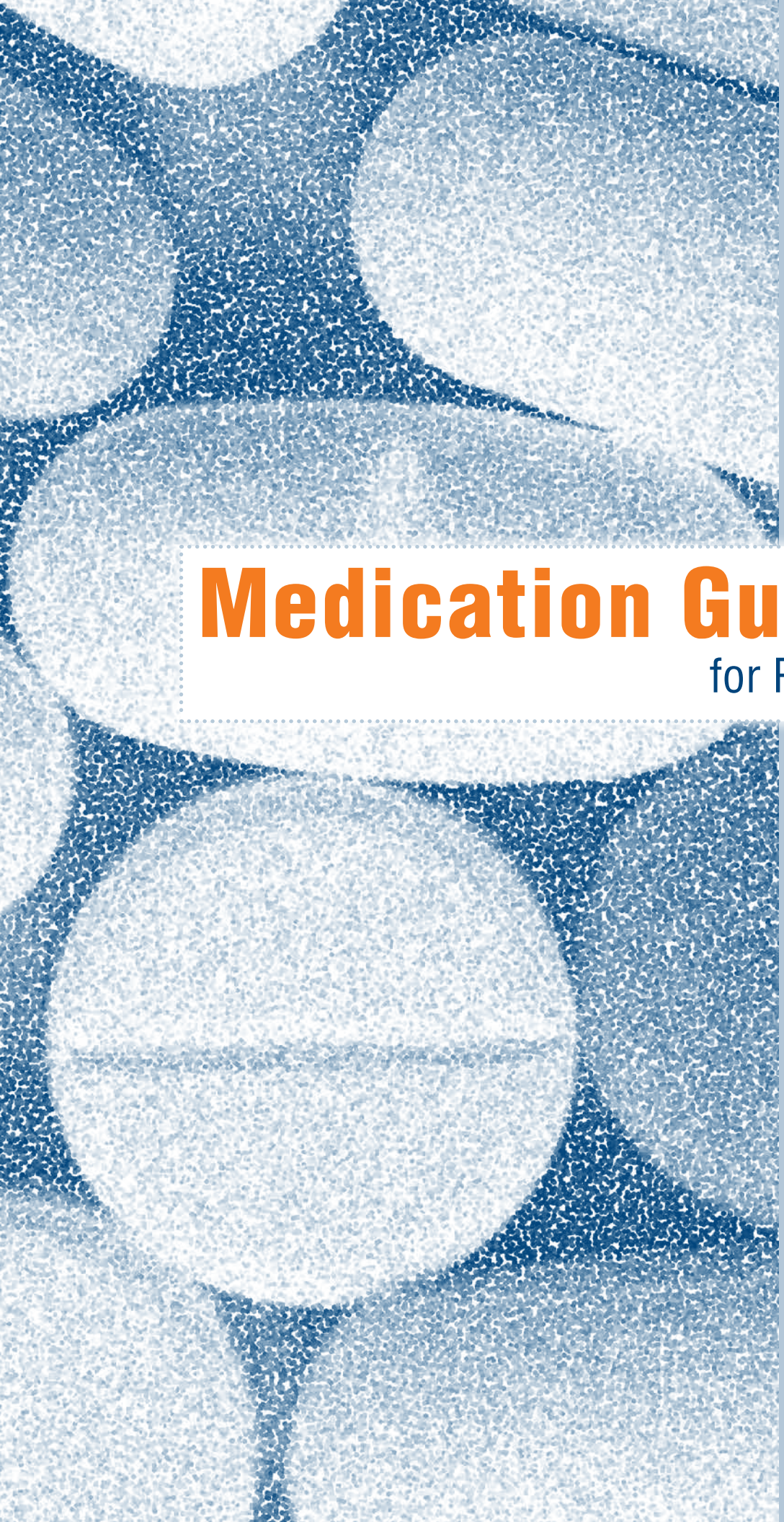

Medication Guidelines

for Registered Nurses

College of Registered Nurses
of Nova Scotia

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NOTE: The information in this document is meant to provide general guidance to registered nurses, and is not intended to replace agency policies.

INTRODUCTION

The safe, effective and ethical administration of medications requires specific knowledge, skill and judgment, and is a cornerstone of quality person-centred care.

Registered nurses (RNs) attain initial competence in this skill during their basic nursing education—through studies in pharmacology and clinical practice—and maintain their competence through continuing education and experience.

As with all healthcare professionals, registered nurses are responsible for understanding their scope of practice, scope of individual practice, scope of employment, and level of competence. They must also practise within the standards set by their regulatory body – the College of Registered Nurses of Nova Scotia (the College).

In relation to the administration of medications, registered nurses must have medication competence in order to: assess the appropriateness of medications for clients; administer medications correctly; monitor the effectiveness of medications; manage adverse reactions; accurately document outcomes; and teach clients how to manage their own health.

Registered nurses also need to be aware of legislation (both federal and provincial), agency policies, other relevant standards/guidelines, and ethical issues that might impact the provision of medications to clients.

As various healthcare providers perform specific and complementary roles in the delivery of medications, a collaborative interprofessional team approach (including clients and families) is recommended to enhance safety and quality care. Quality practice settings can support registered nurses, and the entire healthcare team, in the safe and effective administration of medications through processes that reflect the reality of the workplace and best practices. At the same time, registered nurses are expected to participate in and support quality improvement initiatives and programs.

This document has been created to support registered nurses in the administration of medication by addressing various aspects of the 'medication use' process (i.e., prescribing, transcribing, dispensing, compounding, administering and monitoring of medications). When used in conjunction with other related College documents, agency policies, and current pharmacy resources, these guidelines should assist registered nurses in the administration of medications within the four sectors of health care (i.e., acute care, long-term care, community care, and public health). However, they are not intended to replace agency policies or legal advice in relation to specific practice settings.

Information specific to the role of nurse practitioners (NPs) in medication delivery is not discussed in this document, except as it relates to registered nurses accepting medication orders written by NPs. Authorized medication practices for nurse practitioners can be found in the *Standards of Practice for Nurse Practitioners* (CRNNS, 2009) and a document entitled "*Nurse Practitioners' Authorized Practices: Nova Scotia - Schedule of Drugs and Drug Interventions*" (CRNNS, 2009).

FEDERAL AND PROVINCIAL LEGISLATION

Prescribing, compounding, dispensing and administering medications are activities that present a significant potential risk to the public and are, therefore, reserved for specified health professionals only. Both federal and provincial legislation define the roles of health team members in delivering medications.

As members of an interprofessional collaborative team, registered nurses must be aware and understand the implications of relevant federal and provincial legislation, as well as the roles and responsibilities of each team member involved in the delivery of medications to clients.

The following section provides highlights of federal and provincial legislation that impacts the practice of registered nurses in relation to medication administration.

Federal Legislation

Food and Drug Act

The *Food and Drug Act* (R.S., 1985, c. F-27) governs the sale and distribution of drugs in Canada. This legislation focuses on protecting the public from unsafe drugs and addresses false, misleading or deceptive labeling of drugs. For example, it states that no person shall distribute or cause to be distributed any drug as a sample except physicians, dentists, veterinary surgeons or pharmacists under prescribed conditions. The act also defines prescription drugs and non-prescription drugs. (http://laws.justice.gc.ca/en/ShowTdm/cs/f-27///en)

Controlled Drugs and Substances Act

The *Controlled Drugs and Substances Act* (1996, c. 19), along with the *Narcotic Control Regulations, Part G of the Food and Drug Regulations*, and the *Benzodiazepines and Other Targeted Substances Regulations*, governs the production, distribution, importing, exporting, sale, and use of narcotics, and controlled and targeted drugs, for medical and scientific purposes in Canada. This legislation defines who is authorized to be in possession of these drugs/substances and governs specific activities of pharmacists, other practitioners, and hospitals related to these drugs/substances as they can alter mental processes and harm the health of clients and/or society when diverted or misused (e.g., narcotics such as morphine; controlled drugs such as amphetamines; and benzodiazepines such as lorazepam). Among the directions noted in this legislation, is the requirement for pharmacists and other practitioners, as well as licensed organizations (e.g., public and private hospitals and long-term care facilities licensed under the *Hospitals Act*) to maintain records detailing a count of narcotics, controlled drugs and medication wastage.

In Nova Scotia, the distribution and use of narcotics and controlled drugs is further governed by the *Nova Scotia Prescription Monitoring Act* and *Regulations*.

In their practice settings, registered nurses are legally authorized to be in possession of narcotics/controlled substances when ordered to administer them by an authorized prescriber or when acting as the official custodian of narcotics/controlled substances for an agency. When registered nurses are performing either of these roles, they must comply with federal regulations (i.e., follow agency policy that reflects the legislation in receiving, administering, disposing, or counting narcotics and controlled substances). (http://laws.justice.gc.ca/en/C-38.8/)

Provincial Legislation

Pharmacy Act

The *Pharmacy Act* (2001, c. 36, s. 1) defines the responsibilities of pharmacists in community settings (e.g., long-term care facilities, private agencies, physicians' offices) and provides some direction for other healthcare providers on the compounding, dispensing and administering of medications. For example, under the 2010 amendment to the *Regulations to the Pharmacy Act*, pharmacists may prescribe Schedule I drugs in accordance with the standards of practice to treat conditions approved by the Nova Scotia College of Pharmacists. (http://www.gov.ns.ca/just/regulations/regs/pharmdrugrx.htm)

The *Regulations to the Pharmacy Act* (2002) support a national drug scheduling model developed by the National Association of Pharmacy Regulatory Authorities (NAPRA). These drug schedules classify medications according to those that require a prescription, and those that do not. These regulations also specify how medications are to be sold in pharmacies.

Table 1 (below) outlines the Nova Scotia Drug Schedules. Drugs in schedules 1–3 are also listed from time to time on the National Drug Schedules. Registered nurses should consult with a pharmacist when there is uncertainty about to which schedule a particular drug belongs.

NOTE: The *Pharmacy Act* does not apply to hospital practice.

TABLE 1: NOVA SCOTIA DRUG SCHEDULES
Schedule I drugs require a prescription from an authorized prescriber.
Schedule II drugs (also referred to as "over-the-counter medications") do not require a prescription but are kept in an area of the pharmacy where there is no public access and no opportunity for client self-selection.
Schedule III drugs (also referred to as "over-the-counter medications") do not require a prescription and may be sold by a pharmacist from the self-selection professional products area of the pharmacy. A pharmacist must be available to assist the patient in making an appropriate self-medication selection.
Schedule IV drugs are those listed under the Controlled Drugs and Substances Act (Canada) that require a prescription from an authorized prescriber.
Nova Scotia College of Pharmacists (2006)

Unscheduled drugs (also referred to as 'over-the-counter' medications) can be sold without professional supervision at any retail outlet. Adequate information is available for individuals to make safe and effective choices in relation to these drugs, and labeling is deemed sufficient to ensure appropriate use of these drugs. National Association of Pharmacy Regulatory Authorities (2009)

Hospitals Act

In Nova Scotia, the *Hospitals Act* (1989, R.S., c. 208, s. 1) replaces the *Pharmacy Act* in hospitals. For the most part, the *Hospitals Act* enables the province's nine district health authorities (and the IWK Health Centre) to determine the function of their hospital pharmacies, the practice of pharmacies, and the required medication policies. Although the *Hospitals Act* does not specifically refer to the role of registered nurses in medication administration, according to their standards for practice, registered nurses are expected to follow hospitals'/agencies' medication policies. (http://nslegislature.ca/legc/statutes/novahos.htm)

Homes for Special Care Act

The *Homes for Special Care Act* (1989, R.S., c.203, s.1) governs many long-term care facilities throughout the province, including nursing homes, homes for the aged, homes for the disabled, and residential care facilities.

In May 2011, the *Homes for Special Care Regulations* (1989, c.203) were amended. The regulations now state that medication orders must be in writing and signed by one of the following healthcare professionals (authorized prescribers):

- medical practitioner registered under the *Medical Act*
- nurse practitioner registered under the *Registered Nurses Act*, when appropriate protocols have been established in accordance with the *Pharmacist Drug Prescribing Regulations* made under the *Pharmacy Act*
- pharmacist registered under the *Pharmacy Act*.

In emergency situations or when a medication does not require a prescription, registered nurses practising in homes for special care may accept verbal medication orders from any of the healthcare professionals listed above.

Registered Nurses Act

In Nova Scotia, the professional practice of nursing is defined in the *Registered Nurses Act* (RN Act, 2006, c. 21, s. 1) and *Registered Nurses Regulations* (2009, c. 21, s. 1).

http://nslegislature.ca/legc/statutes/regisnur.htm

According to provincial legislation, the "practice of nursing" is defined as the application of specialized and evidence-based knowledge of nursing theory, health and human sciences, inclusive of principles of primary health care, in the provision of professional services to a broad array of clients ranging from stable or predictable to unstable or unpredictable, and includes

(i) assessing the client to establish the client's state of health and wellness,

(ii) identifying the nursing diagnosis based on the client assessment and analysis of all relevant data and information,

(iii) developing and implementing the nursing component of the client's plan of care,

(iv) co-ordinating client care in collaboration with other health care disciplines,

(v) monitoring and adjusting the plan of care based on client responses,

(vi) evaluating the client's outcomes,

(vii) such other roles, functions and accountabilities within the scope of practice of the profession that support client safety and quality care, in order to

(A) promote, maintain or restore health,

(B) prevent illness and disease,

(C) manage acute illness,

(D) manage chronic disease,

(E) provide palliative care,

(F) provide rehabilitative care,

(G) provide guidance and counselling, and

(H) make referrals to other health care providers and community resources,

and also includes research, education, consultation, management, administration, regulation, policy or system development relevant to subclauses (i) to (vii).

The practice of registered nurses, as defined in the RN Act and Regulations, means registered nurses are responsible to assess, monitor, and evaluate client health outcomes as they relate to nursing practice. Medication delivery is one entry-level competency that supports the provision of professional services by registered nurses.

DETERMINING REGISTERED NURSES' ACCOUNTABILITY

Before administering medications, registered nurses must understand how the following factors determine their accountabilities:

- scope of practice
- scope of employment
- context of practice
- competence.

Scope of Practice

Scope of practice is defined as the roles, functions and accountability which members of a profession are educated and authorized by legislation to perform.

Scope of Practice of the Profession

The scope of practice of the nursing profession in Nova Scotia is determined by the RN Act and Regulations. While the scope of practice establishes the limits on what members of the profession can do, it is also important that the scope of practice remain flexible so as to allow for the growth and development of the professions (Lillibridge, Axford, & Rowley, 2000).

For example, until 2010 registered nurses in Nova Scotia were only authorized to administer medications on the basis of a written order from an authorized prescriber. Now those with the required competency are authorized to recommend and administer over-the-counter medications, in accordance with their agency policy (CRNNS, 2010).

Individual Scope of Practice

While the scope of practice of the nursing profession defines the boundaries of the discipline of nursing (i.e., for all registered nurses), the scope of practice of an individual registered nurse is further defined by the nurse's specific education and experience, and the context of her/his practice (e.g., hospital, community).

For example, all registered nurses can administer medications ordered for their clients by an authorized prescriber. However, registered nurses in emergency departments can administer medications that many other RNs cannot (e.g., epinephrine), based on their agency's care directives (Guidelines for DMFs & Care Directives, CRNNS, 2011). Registered nurses who are licensed as nurse practitioners can also prescribe and order medications.

Scope of Employment

This term refers to the range of responsibilities defined by employers through specific job descriptions and policies. Registered nurses are responsible for ensuring they have the individual scope of practice required for medication administration within the parameters of their employment (scope of employment).

Context of Practice

Context of practice refers to conditions or factors that affect the practice of nursing, including client population, (e.g., age, diagnostic grouping), location of practice setting (e.g., urban, rural), type of practice setting and service delivery model (e.g., acute care, community), level of care required (e.g., complexity, frequency), staffing and availability of other resources. In some instances, context of practice could also include factors outside the healthcare sector (e.g., community resources, government). Registered nurses should always be aware of the context of practice in which medication delivery is to take place.

Competence

Competence is the ability to integrate and apply the knowledge, skills and judgment required to practise safely and ethically in a designated role, and includes both entry-level and continuing competencies (RN Act, 2006).

Registered nurses are accountable to assess their competence to perform medication activities and, in the event that they do not possess the required competence, to refrain from performing such activities until competence is attained. The College's *Standards for Nursing Practice* stipulate that RNs are responsible to attain and maintain competencies relevant to their scope of practice.

Table 2 (p. 11) illustrates how these four factors influence registered nurses' accountability as it applies to medication administration practices.

TABLE 2: DETERMINANTS OF ACCOUNTABILITY		
Factors	RN Accountability	Examples of Medication Administration Practice
Scope of practice	RNs can administer Schedule I medications with an order from an authorized prescriber.	An RN on a medical/surgical unit receives a written order from an authorized prescriber to administer an antibiotic. The RN administers the antibiotic according to the order.
Scope of employment, employer policies	Nurses are knowledgeable about employer medication policies.	A client being cared for in an acute care facility is entering the palliative care phase of her/his treatment and requires PCA (patient controlled analgesia) for pain management. When the client is ready to return to his long-term care (LTC) facility, the RNs at the LTC facility cannot administer the analgesics because the scope of employment at their facility does not allow for the use of PCA pumps.
Context of practice	RNs assess patient population, type of care required, complexity and frequency of nursing interventions, service delivery models, staffing and other resources.	A client on a medical unit requires a dopamine infusion for low blood pressure. Initiation of a dopamine infusion requires close monitoring of a client's vital signs, usually via hemodynamic monitoring. In this agency, a dopamine infusion is usually administered only in a critical care setting. RNs on the medical unit are not authorized to administer the dopamine infusion.
Competence	RNs know and practise within their own level of knowledge, skill and judgment related to medications.	An RN receives an order to administer an injection of morphine via a subcutaneous port. Having little experience with this, the RN reviews the unit's policy and procedure and requests that a practitioner competent in the skill provide guidance during the procedure.

THE PROCESS OF MEDICATION ADMINISTRATION

Medication administration is the act of giving medications to clients through a specific route (e.g., enteral, percutaneous, parenteral). The 'medication use' process begins with prescribing, transcribing, dispensing, compounding and administering medications, and ends with the monitoring of their effects (i.e., expected and adverse). With the exception of nurse practitioners, registered nurses cannot prescribe medications, and dispensing and compounding medications are NOT within their scope of practice.

On the other hand, the process of medication use relies, in large part, on the critical thinking skills and clinical judgment of registered nurses as they proceed through the required assessment, planning, administration, evaluation and documentation.

Core Nursing Responsibilities

In the process of medication administration, registered nurses are responsible to:

- determine that each medication order is clear (legible), accurate, current and complete (medications should be withheld when a medication order is incomplete, illegible, ambiguous or inappropriate; with concerns being clarified with the prescriber).
- assess the appropriateness of a medication for a client by taking into consideration:
  - » the client's age, weight, pathophysiology, laboratory data, medication history, allergies, vital signs, knowledge/beliefs about drugs
  - » knowledge of the medication being administered, including intended therapeutic actions, possible risks, adverse effects, antidotes, contraindications, and interactions with food and other medications including over-the-counter drugs and complementary and alternative medicine (e.g., herbal therapies)
  - » the formal process of medication reconciliation (see p. 38).
- consult with other members of the interprofessional team when additional information is required (e.g., pharmacist to determine appropriateness of a medication).
- discuss any concerns, disagreements, or unclear medication orders with related authorized prescribers.
- ensure medication orders are transcribed correctly to the Medication Administration Record (MAR).
- prepare medications with knowledge of:
  - » aseptic technique
  - » mathematics (required to calculate doses)
  - » trade and generic medication names
  - » risks of combining medications (e.g., for clients receiving two or more)
  - » appropriateness of crushing or splitting pills, and acceptable methods for doing this (refer to Appendix A for list of oral dosage forms that should not be crushed)
  - » stability, storage and labeling of medications once reconstituted.
- verify that medication labels and administration records are current and complete.
- dispose of unusable portions of medications in an appropriate manner.
- store medications in a secure location if unable to administer immediately after preparing. **NOTE**: Routine pre-pouring of medications is not acceptable.

- educate clients about their medications and obtain informed consent before administering drugs.
- discuss reasons for a client's refusal of a medication, when required, and to work with the client and authorized prescriber to determine an alternate plan of action based on this refusal.
- only administer medications that are dispensed by a pharmacist or pharmacy technician.
- only administer medications that were prepared by the nurse herself/himself, except in the case of an emergency (e.g., cardiac arrest).
- adhere to the '10 rights' of medication administration:
  - » Right client
  - » Right medication
  - » Right route
  - » Right time
  - » Right dose
  - » Right reason/assessment
  - » Right education
  - » Right to refuse
  - » Right evaluation
  - » Right documentation.

In an ideal situation, only one registered nurse would perform all components of the medication administration process to decrease the risk of medication errors and maintain accountability.

- monitor clients during and after medication administration for expected benefits and adverse effects, and intervene as necessary (as required, RNs should inform support personnel such as continuing care assistants what adverse effects to watch for and report).
- document the medication process according to agency policy and professional and legal standards.

Prescriptions

According to the Nova Scotia *Pharmacy Act* (2001), a prescription is defined as "an authorization, in writing or otherwise communicated directly to a pharmacist or certified dispenser, from a person authorized by law to prescribe drugs or devices, to dispense a specified drug or device for use by a designated individual or animal".

In Nova Scotia, authorized prescribers include physicians, nurse practitioners, midwives, dentists, optometrists and pharmacists. Registered nurses are not authorized to prescribe medications or to phone in medication prescriptions to a pharmacy on behalf of an authorized prescriber (RN Act (2006).

Prescriptions are either handwritten, on pre-printed forms that are generally assembled as 'prescription pads', or printed on forms similar to those that are pre-printed in an electronic format (e.g., using a computer).

A complete prescription would include:

- client's full name
- date prescribed
- medication name (generic), as well as strength, quantity and concentration, where applicable

- route of administration
- dosage, with instructions for use by the client, including frequency, interval or maximum daily dose and, in some cases, the duration the drug is to be administered
- prescriber's name, signature, designation, licence number, address, telephone and fax number
- number of refills, if applicable
- purpose (e.g., when it is a PRN medication).

Medication Orders

A medication order is a direction provided by an authorized prescriber for a specific medication to be administered to a specific client. Authorized prescribers may give medication orders directly in writing (i.e., documented on a client's record) or transmit them electronically or verbally to licensed practitioners, including registered nurses. However, the type of medication that individual authorized prescribers can prescribe or order varies. For example a midwife, family physician, or dentist would not prescribe chemotherapy.

Abbreviations

The use of abbreviations in the medication process can be hazardous to client safety. Abbreviations frequently cause errors when prescriptions or medication orders are written, transcribed or read. A link to a list of error-prone abbreviations, symbols and dose designations can be found in Appendix B. Agency policies also often specify the acceptable abbreviations that can be used by healthcare teams within an agency/facility.

Different types of acceptable medication orders include, a:

- written prescription
- written order on a consultation form, signed by an authorized prescriber
- written list of medication orders, signed by an authorized prescriber
- copy of a pharmacy call-in order, given to a registered nurse by a pharmacist
- verbal order given to a licensed practitioner (e.g., registered nurse).

http://www.dhhs.nh.gov/dcbcs/bds/nurses/documents/sectionIII.pdf

Medication orders can be:

a. individually recorded for a specific client
b. part of a care directive or delegated medical function
c. pre-printed for specific clients.

A complete medication order would include:

- client's full name
- date of order
- medication name (generic), the strength, quantity and concentration, where applicable
- dosage with instructions for use by the client, including frequency, interval or maximum daily dose and, in some cases, the duration the drug is to be administered

- route of administration
- authorized prescriber's name, signature, designation, licence number (review agency policy)
- purpose (i.e., when it is a PRN medication).

Orders such as "provide medications as at home", "resume medications as pre-op", or "resume medications post-discharge", would not be considered acceptable as they are incomplete and can lead to errors. In these situations, the registered nurse should contact the authorized prescriber for a new order or request that a pharmacist compile a computerized re-order list of prescribed medications that a client is currently taking (once an authorized prescriber reviews and signs these lists, they would be considered as valid orders).

Verbal/Telephone Medication Orders

The expectation is that authorized prescribers will write medication orders whenever possible. However, registered nurses can accept verbal medication orders from authorized prescribers (either face-to-face or by telephone) when it is in the best interest of a client and there are no reasonable alternatives. Situations in which verbal orders would be considered acceptable include:

- urgent or emergency situations when it is impractical for a prescriber to interrupt client care and write the medication order
- when a prescriber is not present and direction is urgently required by a registered nurse to provide appropriate client care.

Authorized prescribers should review and countersign verbal orders as soon as reasonably possible or within the timeframe indicated in an agency's policy.

To ensure that a verbal or telephone medication order is complete, registered nurses should check for the following:

- client's name
- medication name
- dosage form (e.g., tablet, inhalant)
- route of administration
- exact strength of concentration
- dose (in unit of measurement)
- frequency of administration
- quantity and duration
- purpose or indication for the medication (i.e., appropriate for client's treatment plan)
- prescriber's name and designation.

When recording a verbal or telephone medication order, registered nurses should:

- record the time and date directly on the order sheet or in the designated location of an electronic patient care system (PCS)

- record the exact order given by the authorized prescriber
- read the verbal order back to the authorized prescriber to confirm its accuracy. Spell out drug names using words to identify letters that are phonetically similar (e.g., "N" as in November). Confirm the dose by expressing it as a single digit (e.g., 20 milligrams = two zero milligrams). Indicate that the order was read back on the client's order sheet.
- record the authorized prescriber's name and designation on the copy order sheet or in the electronic PCS (e.g., "verbal, or telephone, order from Dr. Jones"), and sign the entry or record the appropriate electronic signature, including her/his designation (i.e., RN).

When prescribers transmit medication orders via the telephone they generally do not have the benefit of conducting direct assessments of clients' conditions and, therefore, base their decisions solely on a registered nurse's assessment of the clients receiving the medications. Comprehensive documentation of RNs' assessments can reduce the likelihood of errors; however, errors can still occur as a result of poor communications or inaccurate transcriptions.

When errors occur in relation to verbal or telephone medication orders, there is always the question of who made the mistake – was it the prescriber who gave the order? or the RN who recorded it? Since negative client outcomes can result from these types of errors, telephone orders are actually discouraged. Whenever possible, faxes should be used instead - to get telephone orders submitted in writing. For example, in some homecare settings, RNs will call a physician with a client's assessment in order to get a medication ordered. However, once a telephone order has been recorded it would be faxed directly to the physician's office for signature. The physician's office would then be required to fax the written order back to the RN. In other situations, such as those where clients live independently in long-term care settings, a prescriber would send a prescription to a community pharmacy and a registered nurse in the long-term care setting would receive a telephone order, followed by a faxed order, from the prescriber.

When a telephone medication order is the only option available to ensure quality care, registered nurses should follow their agency's policy. It is also recommended that they review the College's Documentation Guidelines for Registered Nurses, available at www.crnns.ca/Publications/Resources.

Pre-Printed Orders

Pre-printed orders are used extensively in many settings. Pre-printed orders are an established set of interventions for a specific patient population with similar clinical problems (e.g., clients admitted for a specific diagnostic procedure such as fetal assessment or ultrasound). Pre-printed orders are forms that provide an authorized prescriber with a choice of orders that apply to a specific population. The authorized prescriber would then identify only those particular orders that apply to a specific client. Such standardized pre-printed orders are convenient; promote efficient, appropriate and consistent care; reduce medication errors; and ensure completeness of prescriptions.

However, authorized prescribers must make pre-printed orders client-specific before they can be accepted by registered nurses. They would do this by:

- completing an individual client and medication therapy assessment
- reviewing the orders to ensure that they apply to the client

- selecting client-specific interventions
- adding the client's name to the order before signing and dating.

RNs should review pre-printed orders to ensure that the prescriber's signature has been recorded (hard copy or electronically). Some hard-copy forms have a designated area for prescribers to write additional interventions. Pre-printed orders are not to be altered. Changes to pre-printed orders must be recorded by the authorized prescriber on an agency's official hard copy or electronic order form.

Care Directives

Care directives are orders written by authorized prescribers (e.g., nurse practitioners or physicians) for an intervention or series of interventions to be implemented by another care provider (e.g., registered nurse) for a range of clients with identified health conditions and *only* when specific circumstances exist. A care directive relates to interventions for which the authorized prescribers hold ultimate responsibility, however, which must be within the scope of practice of the care provider implementing them.

For example, a facility might have a care directive that authorizes registered nurses to administer Ventolin aerosols to known asthmatics coming into the facility's emergency department. Or a community clinic might have a care directive that authorizes registered nurses to administer epinephrine to individuals experiencing adverse reactions to a vaccine.

In addition to identifying the specific intervention to be implemented (e.g., medication administration), a care directive must include:

- a relevant assessment process to be used by registered nurses (i.e., specific clinical conditions or other circumstances that must exist before the registered nurse can implement the directive)
- identification of resources essential to performing the intervention (e.g., policy)
- specific monitoring parameters and reference to appropriate emergency care measures.

Registered nurses who are competent to carry out a care directive related to a specific medication must complete and document individual client and medication therapy assessments.

Care directives are generally developed in collaboration with registered nurses and would be incorporated in agency policies but not written on individual client's health records (as is the case with direct medications orders). However, a copy of a care directive may be attached to a client's health record and documented according to agency policy.

Some care directives are only valid for specified periods of time (e.g., influenza vaccine). These time-limited directives authorize specific registered nurses, or RNs employed within specific agencies, to provide identified interventions to groups of individuals exhibiting the same health need (e.g., school children, employees, nursing home residents) within designated timeframes.

Care directives must be approved by an agency's Medical Advisory Committee (or equivalent body) and can only be implemented when an authorized prescriber is available within a pre-determined amount of time (determined by agency policy).

Example of a time-limited care directive:

> Administer influenza vaccine 0.5ml IM to all residents of Shady Grove Long-term Care Facility between October 1, 2012, and January 3, 2013.
>
> Signed: Doctor G Date: September 29, 2012

In many healthcare facilities, care directives are replacing or have replaced what were once known as standing orders. Standing orders are no longer considered to be legal and are not recommended to be used because they do not address the unique needs of specific clients.

Using Technology to Transmit Medication Orders

Faxes, emails, cell phones and other wireless devices are now frequently being used to communicate client information in healthcare settings. Although these technologies offer an efficient and cost-effective manner in which to communicate information, including medication orders, there are confidentiality, security and legal risks associated with their use.

For instance, email and fax messages can be easily misdirected or intercepted by unintended recipients and the security and confidentiality of these messages cannot be guaranteed.

Using emails to transmit a client's health information, including medication orders, is not recommended. While messages on local (network) computers can be deleted, they are never deleted from the central server and could be retrieved at a later date by unauthorized personnel.

In instances where an email message is the option that best suits a client's needs, there must be agency policies regarding email use and a reasonable belief that the transmission is secure (e.g., use of encryption software, user verification, secure point-to-point connections).

Agencies should develop specific policies for transmitting client information electronically, and in relation to email transmission these policies should cover the use of email forms; the procedure to obtain client consent to use emails; and the use of initials, names and hospital or agency numbers. In addition, all entries made or stored electronically are considered a permanent part of a health record and may not be deleted (Documentation Guidelines for Registered Nurses, CRNNS, 2005).

Any client information that is received or sent electronically should be stored electronically or printed on paper and placed in the client's health record (Documentation Guidelines for Registered Nurses, CRNNS, 2005).

Faxed orders are considered legal documents and must be retained as part of a client's permanent record. However, there are significant risks associated with using email or fax machines for the transmission of clients' health information. For more information on maintaining confidentiality and security in the electronic transmission of client health information, refer to the College's *Documentation Guidelines for RNs*, p.18.
www.crnns.ca/documents/CRNNS%20Documentation%20Guidelines%2005.pdf

Transcribing Medication Orders

Transcription is the process of transferring a prescriber's medication order from an order sheet (electronic or hard copy) to either a medication administration record (MAR) or other appropriate medication forms (e.g., medication cards, Kardex).

When transcribing medication orders, professional judgment is required to determine an administration schedule that maximizes the therapeutic effect of the drug, supports clients' choices, and follows agency policy. With the exception of PRN orders, medications should be scheduled to be administered as close as possible to the required time every day and doses should be spaced appropriately to maintain required blood levels of medications.

Appropriate scheduling is particularly important when the absorption and therapeutic effectiveness of oral medications could be affected by the ingestion of food or when there are contraindicated foods (e.g., grapefruit, dairy products). Agency policies may specify standardized administration schedules to accommodate the timing of meals and eliminate the need for individual interpretations of when to administer a medication.

Agencies with paper health records (not electronic) may have policies that designate persons other than registered nurses to complete the required transcription paper work. In such situations, registered nurses would still be responsible to assess the appropriateness of medications ordered for clients; recheck orders to verify that they are accurate and complete before administering the medication(s) ordered; and verify that medication orders, pharmacy labels or medication administration records are complete (including the client's name and identification number as well as the medication's name, strength, dose, route and frequency of administration).

Electronic medication administration systems allow prescribers to enter medication orders directly into the system after which a MAR is automatically generated. The system may also include automated dispensing from electronic medication carts and bar-coded medication verification. This system eliminates transcription errors caused by illegible hand writing, incomplete orders or misunderstandings of verbal and telephone orders. RNs must be knowledgeable about the operation of these systems and their responsibilities in relation to the electronic order entry as errors can still occur during data entry.

Compounding and Dispensing

Compounding and dispensing medications are not within the scope of practice of registered nurses, but only within the scope of practice of pharmacists. According to the Nova Scotia *Pharmacy Act* (2001, Section 29): "A person who is not a licensed pharmacist or a certified dispenser, intern or registered student in the employ and under the supervision of a licensed pharmacist, shall not … compound or dispense drugs for medicinal purposes".

Compounding means "to cause drugs to be mixed, prepared, altered in form, mixed with non-medicinal ingredients and otherwise changed from the manufactured form" (S. Wedlake, personal communication, October 22, 2004), and is to be performed by a pharmacist. Compounding may be done to meet the unique needs of a client. For example, mixing a drug when a required dosage is not available commercially; changing the form of a drug from pill to liquid; or removing a non-essential ingredient from a drug to which a client is allergic.

It is not considered compounding when registered nurses crush medications to administer via a nasogastric tube. Similarly, it is not considered compounding when registered nurses reconstitute medications for parenteral administration or mix two different types of insulin in the same syringe.

Dispensing is defined as "the interpretation, evaluation and implementation of a prescription drug order, including the preparation and delivery of a drug or device or patient's agent in a suitable container appropriately labeled for subsequent administration to, or use by, a patient" (NAPRA, 2009) and is to be performed by a pharmacist. According to the Nova Scotia College of Pharmacists (S. Wedlake, personal communication, October 22, 2004), medications can be dispensed only once.

The repackaging or providing of medications to clients, after they have been dispensed by a pharmacy should be referred to as 'supplying' not dispensing a medication. Other situations that are often incorrectly referred to as dispensing include:

- filling a mechanical aid or alternative container from a client's own blister pack or prescription bottle, to facilitate self-administration or administration by a caregiver
- repackaging and labeling drugs from a client's own supplies
- administering medications prepared by a pharmacy
- administering medications from a stock supply (dispensed by pharmacy)
- providing clients with their own blister packs or prescription bottles
- providing clients with medications obtained from a ward stock or 'night cupboard'
- providing clients with medications previously dispensed to a stock supply, to cover them at discharge until they can get their prescriptions filled by their local pharmacies (when continuity of medication therapy is essential)
- having an agency pharmacy fill a prescription upon a client's discharge and providing these medications to the client because s/he will be unable to get the required medications from her/his community pharmacy.

Drug Substitution

Pharmacists in both community and hospital settings are authorized to dispense alternate brands of medications than those prescribed (i.e., interchangeable drugs), based on a list of substitute medications in an approved formulary of interchangeable drugs (e.g., Gravol may be substituted with dimenhydrinate).

Registered nurses can only administer substituted generic and interchangeable therapeutic medications when they are dispensed by a pharmacist and approved by an agency. However, when a drug is substituted, registered nurses are responsible to ensure that both the original and substituted drug names are noted on the medication administration record. Both generic substitution and therapeutic interchangeable medications are prohibited when a prescriber indicates "no drug substitution" on a prescription/order.

Common Medication Supply Systems

Medication supply systems assure safe storage and access to medications by using appropriate delivery, storage, drug packaging and technological systems.

The most common medication supply systems are described below:
Unit-Dose – medication is dispensed by a pharmacy in a single-unit package that is ready to administer to a client. All medications are dispensed for a 24-hour period. The unit-dose system is commonly used in hospitals.

Bubble or Blister Packs - a pharmacist dispenses one medication within one 'blister', usually on a weekly or monthly basis. A client may have several packs as each medication is packaged separately. The bubble or blister pack system is used commonly in long-term care environments.

Multi-dose - a pharmacist dispenses all of a client's medications in one sealed package or 'blister' for a particular dosage time (e.g., 0800 hours). These packages are similar to single blister packs except in this case a number of different medications are included in the same blister and the packages are labeled with all the medications in the package.

Stock - registered nurses use the information on a Medication Administration Record (MAR) to select the appropriate medication and dose from medication containers in a storage unit (e.g., medication cupboard). The registered nurses are responsible for placing the correct medication in a container identified with a client's name, the name of the medication, required dose and frequency of administration. The medication is then administered as soon as possible after it has been poured. (NANB, 2009)

Pre-Pouring Medications

As a practice, pre-pouring of medications (e.g., one RN preparing a medication and not administering it immediately or having another RN administer it) is not acceptable as it 'clouds' accountability for the 10 rights of medication administration and increases the likelihood of errors.

To promote best practice, registered nurses should prepare medications as close as possible to the time that they are to be administered and ensure that the medications are safely stored until they are administered (CRNBC, 2006). In addition, to promote client safety and maintain accountability, all aspects of the medication administration process should be performed by the same registered nurse.

However, there may be situations in which more than one healthcare professional (e.g., registered nurses) is required to assist in the administration of a single drug. For example, in light of a client's urgent need for life-saving medications in the event of a cardiac arrest, one RN would be required to prepare and label medications while another RN or authorized health professional would be required to administer them. In these situations, both the registered nurses preparing medications and those administering them would be required to document the medication administration in the client's health record.

Another practice that is well accepted is having one registered nurse prepare and initiate an intravenous medication but due to the length of time required for its infusion having another RN assume responsibility to maintain it. In these situations, both nurses need to recognize that they share accountability and should act cautiously (CRNBC, 2006).

Pre-drawing of syringes during a mass immunization campaign is considered an efficient manner in which to administer a single vaccine to a large number of people. However, it is recommended to limit the practice of pre-drawing syringes to mass immunization campaigns (see Immunization Guidelines for Registered Nurses, CRNNS, 2011).

Range Doses

When a client's need for medication varies from day to day or within one day, range doses are often prescribed. Range doses refer to medication orders in which the dose and frequency of medication is prescribed in a range (e.g., meperidine HCl 50-100 mg IM Q3-4H, PRN for pain).

Complete and comprehensive client assessments are critical when administering range doses. Whenever possible, registered nurses administering medications with a range dose should discuss the appropriate amount of medication required with the client, using the effectiveness of any previous dosages as a reference point.

Agency policies should specify which medications can be ordered in range doses, what ranges are appropriate, and who can determine the dose and frequency within the ranges. When a registered nurse judges that the range prescribed is inadequate in meeting the needs of a client, the prescriber should be notified and a new order should be issued.

Sliding Scales, Algorithms and Correction Doses

Some medications, such as anticoagulants, may be ordered according to a sliding scale. A sliding scale helps registered nurses determine the dose of a medication based on a client's specific laboratory values. Sliding scales may be included in an agency's official medication order form or provided as a pre-printed order (electronic or hard copy).

The dosage of other medications may be determined on the basis of an algorithm: a step-by-step procedure, often included as a flow chart, to help determine dosages based on a client's laboratory values or other parameters such as vital signs, urinary output or cardiac rhythm. For example, in advanced cardiac life support there are algorithms for the administration of various medications based on the type of life-threatening cardiac rhythm the client is experiencing. Algorithms may be provided as part of an agency policy.

In relation to the care of diabetics, a correction dose of insulin can be determined according to a client's blood glucose results and ordered on the basis of an algorithm of the client's category of insulin resistance and blood glucose results. For more information on insulin administration, visit www.diabetescareprogram.ns.ca/guidelines/InsulinDoseAdjustment2010.pdf.

Registered nurses must be aware of an agency's policy regarding the use of sliding scales, correction doses and algorithms, and ensure that these policies are current and based on evidence. Administering medications using sliding scale, correction doses and algorithms requires education and skills beyond the entry-level competencies for registered nurses.

Splitting Scored Pills

When the exact dose of a medication is not commercially available it may be necessary to split a pill. Scored pills may also be split (preferably with a splitting device) as a cost-saving measure or to promote swallowing. However, when pills are split, especially those that are not scored, the dose may not be precise, resulting in potentially limited therapeutic effectiveness. In hospital settings, best practice is to have the pharmacy split non-scored pills.

NOTE: Pill splitting devices should be cleaned after each use.

Clients should be informed about the risks associated with splitting pills and advised that some medications are not suitable for splitting (e.g., capsules, very small tablets, asymmetrical tablets, enteric coated and extended–release medications).

ADMINISTRATION OF SPECIFIC CATEGORIES OF MEDICATIONS

PRN Medications

PRN or 'pro re nata' medications are administered to clients only 'as needed' and only for the purpose for which they are ordered. For example, when Gravol is ordered PRN for nausea, a client should only receive this medication when nauseated – based on the order, it would not be appropriate to administer Gravol as a sleeping aid.

PRN medications should be administered only after a registered nurse has assessed a client's needs. The registered nurse would then be responsible to monitor the client to determine the medication's effectiveness and document the outcomes.

Like other medication orders, an order for a PRN medication should include the purpose of the medication and the frequency with which it may be administered.

Narcotics and Controlled Drugs

Healthcare organizations are mandated by federal law to establish systems and policies for the appropriate dispensing, administration, disposal and security of narcotics and controlled drugs. Agency policy should establish:

- who can receive the delivery of narcotics and controlled drugs
- who can access locked medication storage cabinets
- who can perform narcotic/controlled drug counts
- what times narcotics/controlled drugs are counted
- how to document drug counts
- how to manage any discrepancies in a drug count.

In most facilities, registered nurses and licensed practical nurses are authorized to:

1. receive the delivery of narcotics and controlled drugs
2. access locked medication storage cabinets
3. perform narcotic/controlled drug counts (i.e., 1 coming on shift, with 1 going off). Pharmacists also perform these counts.

Narcotics/controlled drugs are required to be counted at the end of each shift, with all client refusals being noted, as well as late entries and co-signing of discards. To manage any discrepancies in drug counts, registered nurses should fully complete one record sheet before a new one is started and all errors in a count must be fully and accurately documented.

While federal law is clearly stated in regulations for health care facilities how narcotics/controlled drugs are to be managed and discarded these same regulations do not apply once the controlled substances

are in the client's home. Because a high percentage of drug diversion occurs from family member's prescriptions, it is important that the nurse provide client and family education on how to safely store and dispose of their prescribed controlled drugs in the home.

Registered nurses need to advise their clients to only keep the minimum amount of their controlled drug in the home; preferably by requesting a smaller supply from their provider or pharmacist. Diversion and theft of controlled substances occur more frequently when these medications are left in plain sight or there is open discussion about their presence in the home. Once in the home, controlled drugs and substances should be kept in a secure location, preferably a locked box or cupboard; with the key kept in the custody of a responsible adult. Registered nurses need to advise clients to return any controlled drugs that are no longer required directly to a pharmacy for proper disposal.

Restrictions

1. Due to the inherent risks in maintaining accurate drug counts and proper disposal, registered nurses practising in community settings are not permitted to transport narcotics and controlled drugs.

2. Registered nurses in homecare settings should provide guidance to family members regarding the handling and disposal of narcotics and controlled drugs, as required.

3. Registered nurses practising with temporary licences are not permitted to count narcotics with another holder of a temporary licence.

4. Some registered nurses may not be able to handle narcotics or controlled drugs as a result of restrictions imposed through the College's disciplinary processes (e.g., someone experiencing problematic substance use).

In October 2013 an exemption to the Controlled Drugs and Substances Act (2013) was released. S*ection 56 Class Exemption for RNs delivering primary health care at a health facility in a remote and/or isolated community* provides registered nurses with the authority to possess, provide, administer, transport, send and deliver controlled substances in the course of providing primary health care services to patients located in a remote and/or isolated community, subject to the terms and conditions of this exemption. The client must be a patient of the health authority or agency delivering the service. Exemption 56 also states the RN's ability to provide and administer controlled substances is subject to the following conditions:

a) the person is a patient under the professional treatment of a registered nurse;
b) the controlled substance is required for the condition for which the person is receiving treatment;
c) the registered nurse obtains an order/prescription signed and dated by a practitioner unless otherwise stipulated in the policies or procedures;
d) follow the policies and procedures of the health care service provider for the handing of medication that contain controlled substances at the health facility.

Verbal orders cannot be received for Controlled Drugs and Substances under Exemption 56

This practice is not without risk. The risk of the ability to maintain accurate drug counts, proper disposal and the safety of the nurse all exist. These risks should be examined when considering implementing this practice in your health authority or agency. The employer risk management department should be consulted and agency policy must be developed related to this practice.

Procedural Sedation and Analgesia

Registered nurses are not authorized to administer medications intended for purposes of general anaesthesia. However, if the practice is supported by agency policy, they may administer some anaesthetic/analgesic agents for purposes other than general anaesthesia. For example, registered nurses can administer procedural sedation and analgesia (PSAA), formerly called 'conscious sedation' to control pain or psychological stress during procedures such as ankle reductions or cast applications.

Administering anaesthetic agents used with PSAA is within the scope of RN practice, but requires that registered nurses have additional education and skills beyond the entry-level competencies. As well, registered nurses in these situations would need to ensure that adequate human resources (e.g., authorized health professionals, appropriate support staff) and equipment (e.g., airway and resuscitation equipment such as supplemental oxygen, suction, respiratory kit, crash cart and reversal agents) are available to ensure client safety both during and after the procedure. Although clients receiving PSAA have a slightly depressed level of consciousness, they retain their ability to maintain an airway and are able to respond appropriately to verbal commands and physical stimulation.

Immunization

The competencies required to administer immunizations are far greater than for most routine medications. According to the Public Health Agency of Canada, competencies for immunization range from knowledge of the scientific basis of immunization to essential immunization practices and contextual issues relevant to immunization (Immunization Competencies for Health Professionals, Public Health Agency, 2008, p.3).

The administration of immunizing vaccines also requires individual prescriptions or a care directive (i.e., for a specific client population such as residents in a long-term care facility). As noted previously, care directives need to be developed and approved by an agency's Medical Advisory Committee or equivalent policy approval body (Guidelines for DMFs & Care Directives, CRNNS, 2011).

In the administration of immunizations, registered nurses must:

a. possess the required competencies
b. determine client eligibility for the immunization
c. assess for adverse effects and provide appropriate interventions if required (note: a separate care directive is required to administer a medication for an adverse/allergic reaction).
d. ensure her/his agency has established policies related to immunizations administered by registered nurses.

Mass Immunization

As in the administration of other medications, one registered nurse should be responsible for all of the steps required to administer a vaccine. However, to facilitate efficient administration of a single vaccine to a large number of people, pre-loading of syringes is sometimes considered. The practice of pre-loading syringes should be limited to mass immunization campaigns.

The *Canadian Immunization Guide* states: "Ideally, a vaccine should be withdrawn from the vial by the vaccine provider administering the vaccine. Pre-loading syringes with vaccine is discouraged because of the uncertainty of vaccine stability in syringes, risk of contamination, increased potential for vaccine administration errors and vaccine wastage. Pre-loading of

syringes in the hospital setting where vaccines are drawn up and labeled in the pharmacy may be considered. In addition, to facilitate timely and efficient administration of a single vaccine to a large number of people in an immunization clinic setting, pre-loading of syringes may be considered."

Canadian Immunization Guide, Seventh Edition – 2006, p. 2.

Agencies that have a policy enabling registered nurses to pre-load syringes for the purpose of mass immunization also need to ensure that processes are in place to keep the syringes safely and securely stored until they are administered. Pre-loaded syringes should be accompanied by information/labeling about the stability of the vaccine (i.e., an expiration time/date), and it is critical that the cold chain (2-8 degrees Celsius) be maintained during storage.

If agency policies allow for one person to reconstitute and prepare vaccines while another administers them, the College recommends that:

1. this practice be limited to mass immunizations only.
2. prior agreement on professional accountability be established .
3. individual healthcare professionals responsible for reconstituting the vaccines and administering them clearly document their roles in the immunization process.
4. registered nurses label pre-loaded syringes with their expiry times (to ensure stability of the medication) .
5. registered nurses ensure policies are in place related to the maintenance of the cold chain
6. policies be in place to ensure that this practice is time-limited and not considered to be routine practice.

Immunization Resource Guide, Appendix B (CRNNS, 2010)

An up-to-date listing of immunization resources is located on the College website (go to Publications & Resources). This listing includes current documents from Nova Scotia as well as the Public Health Agency of Canada.

www.crnns.ca/default.asp?mn=414.1116.1130.1495

Over-the-Counter Medications

Over-the-counter medications (OTC) can be purchased, without a prescription, in local pharmacies and other retail outlets. The three types of OTCs available include:

- Schedule II drugs, which are kept in an area of a pharmacy where there is no public access and no opportunity for client self-selection.
- Schedule III drugs, which are found in the self-selection professional products area of a pharmacy.
- unscheduled drugs, which can be sold in any retail outlet by non-pharmacists.

Although medication orders are routinely required in hospital settings, some agencies have policies that authorize registered nurses to administer and recommend over-the-counter medications (Schedule III *only*) without an order. It is the responsibility of registered nurses to be aware of the medication administration policies in their agencies, and to ensure that they have the knowledge, skills and judgment required to administer these medications, including OTCs, safely and ethically (see the College's position statement on *Registered Nurses Recommending and/or Administering Over-the-Counter Medications*: available

at www.crnns.ca/documents/PositionStatementRNsAdministeringOver-the-CounterMedications2010.pdf).

The safe administration of OTCs requires that registered nurses:

- are knowledgeable about the actions of the specified medications, and possible interactions with a client's current medications and diet
- assess the client's condition before recommending or administering the medication
- explain the therapeutic effects and potential risks and side effects of the medication to the client
- document the client assessment and any action or advice provided
- refer the client to the appropriate care provider for further assistance when required (e.g., when a client assessment indicates that the OTC medication is not appropriate for the client's needs or when the OTC medication is not effective).

Off-Label Use of Medications

Off-label use of medications is a term that means the practice of using a Health Canada-approved drug for a purpose that is not indicated on the package insert but may benefit a client. Given that this is an unapproved use of a legal medication, the drug monograph (written account on medication container) may not provide beneficial information (e.g., about benefits or side effects).

The following are examples of off-label use of medications:

- Prescribing a medication for a purpose for which it has not been approved (e.g., dimenhydrinate or Gravol is intended to relieve nausea, however, may be prescribed for insomnia because of its tendency to induce drowsiness – a risk of using Gravol to treat insomnia is that it is highly addictive and ineffective with extended use).
- Prescribing a medication for a child which has only been approved to be safe for use in the adult population.
- Prescribing a route or dose for a medication that is different from what was originally approved.

Registered nurses should be knowledgeable about the scientific rationale for the off-label use of a medication. In addition to being aware of the known possible side effects, it is important to recognize that the drug may also have some unknown side effects related to its off-label use. Clients should be informed of the reason for the off-label use of a medication and associated risks.

Restricted, Non-Formulary, Special Access Medications

In addition to formulary medications (those routinely stocked in a facility's or community-based pharmacy), registered nurses in various practice settings may be requested to administer:

1. Restricted drugs - formulary medications that are restricted for a specific indication or specialty.

2. Non-formulary drugs – not stocked in a pharmacy, and may be prohibited because they pose a risk to clients or may not be covered under health insurance plans.

3. Special access drugs – only authorized through the Special Access Program of Health Canada, for use in serious or life-threatening conditions for which conventional therapies have failed or are

unsuitable or unavailable.

Before administering restricted, non-formulary or special access medications, there should be a recorded prescription and a signed and dated client consent form. Again, registered nurses would be responsible for knowing each drug's actions and potential adverse effects. They should also be prepared to intervene appropriately when untoward effects occur and to have the resources required to manage potential risks.

Investigational Medications

An investigational medication is one that is available and approved for human clinical trials by an independent research ethics board and healthcare facility. Registered nurses can only administer investigational medications that have been approved for use as part of a formal research clinical trial and only to those clients involved in the trial.

Before administering an investigational medication, registered nurses must:

- ensure there is an order written by an authorized prescriber, which has been approved by a principal investigator in the research study
- have competency in administering the medication
- be familiar with the investigational protocol and have all the necessary drug information to ensure safe medication administration
- have reviewed, discussed and clarified any questions about the study with the client prior to her/him signing the consent form to receive the medication. This consent should inform the client about the study's title, purpose, reasonable expected benefits, foreseeable risks, alternative procedures, compensation and contact information for the research team
- ensure that a signed and dated copy of the investigational medication consent form is in the client's heath record
- ensure resources are in place to manage any possible risks or adverse effects of the medication.

Following the administration of an investigational medication, registered nurses must monitor the client for all possible side effects and thoroughly document their observations and related interventions in the client's health record and/or on study forms provided.

Distribution of Medication Samples

Samples of prescription medications are often provided by pharmaceutical companies to specific authorized healthcare providers (usually physicians) free of charge. These samples may be in the form of a packet, card, blister pack, bottle, container or other single packaging.

However, the distribution of drug samples can be an unsafe practice as the:

- drug packaging may not contain adequate or clear information related to the safe storage, handling, use or disposal of the medication
- extended storage of samples may lead to the distribution of expired drugs
- drugs may interact with other prescription and non-prescription medications or foods
- drugs may be contraindicated due to a client's medical condition or medication history
- clients supplied with drug samples often do not receive the monitoring required to detect possible adverse effects, and documentation is often lacking.

According to the *Food and Drug Act* (1985, 14s.s.2), under certain conditions drug samples can be distribute to physicians, pharmacists, dental surgeons and veterinarians. These authorized prescribers can then provide drug samples to clients when needed. Registered nurses and nurse practitioners can distribute drug samples under a physician's order or care directive. Agency policies pertaining to the distribution of drug samples should address their procurement, storage, access, distribution/supplying and proper disposal.

Medications Brought From Home

Registered nurses practising in community settings such as summer camps, respite care, or shelters, often have clients who bring prescription (Schedule I and IV) and over-the-counter medications (Schedule II, III, unscheduled) from home and expect the registered nurse to administer them. Whenever possible, clients should be encouraged to self-administer these medications. If it is necessary that the registered nurse administer them, s/he may do so only if the practice is supported by agency policy and the medications are in their original containers and appropriately labeled (i.e., with an affixed prescription label). If there is a discrepancy between the affixed prescription label and the administration directions

> The installation of an automated medication dispensary such as PYXIS is one of the newer advancements aimed at reducing medication errors and improving client safety and quality care. This system is a standard of medication management in many hospitals.

from the client/family, the registered nurse should clarify the order with the authorized prescriber. Any discrepancies and reasons for following the chosen directions should also be documented.

However, when clients bring prescription (Schedule I and IV) and over-the-counter medications (Schedule II, III, unscheduled) into a healthcare facility (e.g., hospital) registered nurses must ensure that they have an approved order or facility policy that authorizes them to administer these medications.

Complementary and Alternative Therapies

Although clients may incorporate a variety of complementary or alternative therapies into their daily lives, scientific evidence demonstrating the efficacy and safety of many of these therapies (e.g., herbal remedies) is often lacking. Before administering these types of therapies or providing advice to clients about their use, registered nurses should ensure that they are knowledgeable about the therapeutic benefits, side effects, contraindications, and potential interactions with traditional medications.

Further information on the roles and responsibilities of registered nurses in relation to complementary and alternative therapies, as well as a framework for ethical decision-making regarding their use, are provided in a document published by the College, entitled "*Complementary and Alternative Therapies: A Guide for Registered Nurses*" (2005).

MEDICATION TRANSPORTATION, DISPOSAL, AND STORAGE

Registered nurses practising in healthcare facilities are sometimes required to transport clients' medications (e.g., from a pharmacy to a care setting , from a care setting back to a pharmacy, or during a client transfer from one facility to another). In these types of situations, registered nurses must verify that their agency policy supports medication disposal and transportation as part of the nursing role. If an agency supports these practices, then being in possession of these medications is not illegal as the nurse is viewed as an agent of the client (CARNA, 2007).

In many agencies, registered nurses are responsible for medications stored in cupboards, cabinets, medication carts and emergency containers. To ensure their safety and stability, medications must be labeled and stored properly to protect them from unsuitable variations in temperature, humidity and light. For information on proper storage and handling, registered nurses should check product monographs or other more specific guidelines (e.g., National Vaccine Storage and Handling Guidelines for Immunization Providers). Medications must also be secured in a safe location to prevent unauthorized access in accordance with legislation and agency policy.

CLIENT CONSENT

Registered nurses are ethically and legally obligated to obtain a client's consent before administering any medication. This consent may be verbal or implied (e.g., when an individual takes a medication from an RN or helps to position her/himself to receive an intramuscular injection). In the case of some medications, clients may be asked to provide their consent in writing.

Informed Consent

Beyond a simple agreement (consent), registered nurses administering medications should ensure that their clients provide informed consent. This means that their clients have been:

- provided with complete and accurate information about their medications, in terms that they can understand
- informed about the possible risks and benefits of their medications
- informed about possible risks and benefits if they refuse medications
- provided with an explanation of therapeutic alternatives
- told that they have a right to refuse their medications without fear of repercussions
- given the opportunity to make a reasoned decision about whether to accept a proposed medication
- made aware that they can withdraw their consent at any time.

It is important to remember that clients are assumed to be capable of giving informed consent until proven otherwise. Registered nurses are expected to respect the rights of their clients, or substitute decision-makers, to refuse or withdraw consent at any time for any reason, provided they are capable of doing so and there is no legislation that removes that right (www.crnbc.ca/Standards/Consent/Pages/Default.aspx). The practice of administering medications without a client's knowledge or consent is unethical and unacceptable. It is equally unacceptable to force, coerce or manipulate clients to accept medications.

When clients ask questions, hesitate to accept, or simply refuse medications, registered nurses should attempt to determine the reasons for these decisions and help their clients better understand the benefits of taking the medications, possible consequences of not taking them, and even exploring other options. It is also the responsibility of registered nurses to inform the authorized prescriber of a client's refusal of or concerns about a medication.

Covert Medication Administration

Covert medication administration is the practice of administering medications to individuals without their knowledge or consent (e.g., concealing medications in a client's food when s/he has declined the medication). This practice disregards a client's right to informed consent

and her/his right to refuse medications. Covert medication administration also breaches client trust, violates the *Code of Ethics for Registered Nurses*, and is a misuse of a registered nurse's professional status.

When a client has made an informed choice not to take a medication, it should be withheld. However, if a registered nurse determines that /he has permission to administer a medication, judgment should be used when a client still vehemently resists taking it.

If there is concern about an individual's capacity to provide informed consent, it is essential to respect the law concerning capacity assessment and substitute decision making. In the event that a client does not possess capacity, registered nurses must be clear who is legally authorized to act as the client's substitute decision-maker. Substitute decision-makers and healthcare professionals must consider and respect a client's best interests, as well as previously known wishes or advance directives.

Administering Placebos

A placebo may be administered when its use has been discussed with the client involved, informed consent has been acknowledged, and the client's signature has been received and witnessed.

When clients are participating in a placebo-controlled study, they should understand their chance of receiving a placebo versus the investigational drug. Intentionally withholding information regarding placebo use denies clients the opportunity to make their own judgments.

Administering placebos without a client's knowledge or consent is an unacceptable practice that violates the clients trust and the *Code of Ethics for Registered Nurses* (CNA, 2008 p.18).

In the event that a registered nurse witnesses unsafe, unethical, incompetent or inappropriate medication practice on the part of another registered nurse or healthcare provider, that registered nurse is accountable to take appropriate action to ensure the safety of the client. In most agencies, registered nurses are expected to discuss these types of concerns with the RN (healthcare provider) involved and report the practice to their clinical leader, charge nurse and/or manager (CRNNS, 2004).

Withholding Medications

Medications may be withheld when a capable client or a client's substitute decision-maker has made an informed choice not to have them administered. As registered nurses are accountable to advocate for client safety, medications could also be withheld when a registered nurse is concerned that a medication order places a client at risk of harm.

Concerns that could lead to a registered nurse's decision to withhold a medication might include, but are not limited to:

- unclear, illegible, incomplete or ambiguous orders
- orders written using non-standard abbreviations
- medications determined to be unsafe, contraindicated or inappropriate for a client
- medications inconsistent with therapeutic outcomes
- medication dosages exceeding the recommended range

- medications ordered to be given via a route not approved for that medication
- off-label medications
- orders for investigational medications (see Investigational Medications, p.27).

Registered nurses are accountable and responsible to communicate and collaborate with members of the interprofessional team when they have concerns about a client's medications. After reviewing all available drug information, registered nurses should address their concerns by:

- consulting with a pharmacist, when necessary
- promptly contacting the authorized prescriber, to clearly articulate the concern and request rationale for the order (when the prescriber is unavailable, the RN should consult with her/his manager, supervisor or another designated authority within the facility)
- informing the prescriber that the medication will not be administered if the concern remains unresolved
- referring to the appropriate authority and committee within the agency for further discussion and resolution
- documenting the concerns and related actions in the client's health record
- determining if necessary information unrelated to client care should be documented on designated forms (e.g., occurrence/incident report).

DOCUMENTATION

Nursing documentation, in written or electronic formats, should provide an account of the judgment and critical thinking used by registered nurses in the delivery of client care. Documentation should be an accurate record of care provided and meet professional, legislative and agency standards. A legal record may be a paper or electronic health record, a service record, or a permanent office file.

Effective documentation promotes continuity of care; establishes accountability; enhances communication between nurses and other healthcare providers; and conveys the unique contribution of nursing to health care.

In relation to documentation, registered nurses in Nova Scotia are required to adhere to the College's *Standards for Nursing Practice* and *Documentation Guidelines for Registered Nurses*. According to these resources, registered nurses are accountable and responsible to record and maintain documentation that is clear, timely, accurate, reflective of observations, permanent, legible and chronological.

In relation to medication administration, registered nurses' documentation would include any adverse outcomes and related interventions; a client's therapeutic response; information or education given to a client; supervision provided; and communications with other members of the healthcare team. When a PRN medication is administered, the reason for its administration and the client's response (outcome) should also be documented.

Agencies must ensure that their healthcare records allow adequate space for registered nurses to document fully in relation to medication administration. This documentation should include:

- client's name (each form should be properly completed with client identification)
- name of drug(s)
- date and time* of administration

- dose
- route and/or site
- nurse's signature/designation (if only initials are used, a mechanism must be in place to identify provider by name [e.g., a master signature roster with initials maintained as part of a client's original health record]).

*Recording on approved agency forms should take place as soon as possible after a medication has been administered. Medications ordered *more* often than every six hours (q2h or q4h) must be given within 30 minutes of the designated administration time. When a medication is administered outside the range of recommended times, registered nurses must record the actual time that the medication was administered. Registered nurses should be familiar with their facility's policy on when the 'actual' time of medication administration must be documented. For example, actual administration times are generally recorded for medications given during urgent, emergent situations and high risk procedures. Accurate timing of administration is also generally required for the maximum therapeutic effect of some medications. For information on the '30-Minute Rule', refer to the ISMP newsletter *Nurse Advise-ERR* (www.ismp.org/Newsletters/nursing/Issues/NurseAdviseERR201007.pdf).

Withheld, Omitted or Declined Medications

When medications are withheld, omitted or declined, it is important to document the related assessment, including the reasons why a client did not receive the medications. For example, certain oral medications may be withheld if a client is fasting pre-operatively. Similarly, a dose of digoxin may be withheld based on an assessment indicating toxic side effects. Documentation should include how and why a medication treatment plan was altered and who was notified. When clients decline medications, subsequent discussions and follow-up should also be documented.

Medications Administered by Other Staff

Registered nurses should only document medications that they personally administered, and should not permit anyone else to document for them except in an emergency. For example, in a cardiac arrest, a registered nurse is usually designated to record all medications given by other healthcare professionals. However, the healthcare professionals who actually administer the medications should countersign this record as soon as possible after the event.

Medications Administered by Client/Family

To promote autonomy, decision making and independence, clients with the required capacity should be educated and supported to self-administer medications both at home and when admitted to healthcare facilities. After assessing a client's capacity (e.g., judgment, memory, understanding, functional ability), the registered nurse caring for this client should collaborate with the client (and her/his family, if required) to establish a plan for medication administration. This plan should include the provision of all relevant knowledge (e.g., medication dose, frequency and route, expected outcomes, potential side/adverse effects, and ways to monitor the expected and unexpected effects of the medication).

Clients should be continuously assessed for their capacity to self-administer their medications, and these assessments should be documented. In the event that a client is no longer capable of self-administration, a qualified healthcare professional would be expected to assume this responsibility (in clients' home, this responsibility could be assumed by a family member).

Although clients may administer their own medications in healthcare facilities, registered nurses still have the overall responsibility for coordinating and evaluating client medications. They should be familiar with agency policies related to self-administration as well as any restrictions placed on this practice. These policies should include documentation requirements.

Clients receiving healthcare in facilities such as hospitals or health centres may be educated to self-administer in specific situation (e.g., when granted a leave of absence or 'pass' to leave the hospital). Agency's policies should describe the documentation required in these cases (e.g., time of client's departure, duration of pass, medications given to the client or family member, instructions provided, and self-reported adherence to the medication regimen).

Clients receiving care in their homes do not normally document when they take medications unless there is a specific reason for doing so (e.g., tracking compliance, implementation of a new medication plan, administration of narcotics/controlled drugs).

Mass Immunization

The overall principles for documentation would apply to mass immunizations. For example, immunization documentation should reflect all aspects of the nursing process and include recording of the medication (i.e., vaccine), lot number, dose, site, route, provider name and date. Generic names and/or trade names with lot numbers should be included when appropriate. Agency policy may require additional documentation (e.g., recording expiry dates).

Documentation related to mass immunization must be completed and submitted according to agency policy. An official health record may be a client's electronic or paper health care record, a service record or a permanent office log or file. For example, a signed consent card on which a registered nurse documents a vaccine will be the official document that needs to be retained in some settings, even though a clerk may enter the information into a registry.

MEDICATION ADMINISTRATION BY NURSING STUDENTS

When nursing students (basic/pre-licensure) are involved in client care, they work under the guidance of a registered nurse who maintains responsibility and accountability for the overall plan of client care. Students are responsible for functioning within their level of competence, recognizing their limitations, asking questions and seeking consultation or direction from experienced registered nurses.

A nursing student's role in medication administration depends on their year of academic study, an agency's policy, and the policy of the student's nursing program (academic institution). Nursing instructors and
preceptors are accountable for providing guidance to nursing students when they administer medications. They are expected to conduct an assessment of students' knowledge, skill and judgment to determine if each student can safely administer medications independently. Beyond a student's competence, a decision as to whether a student can administer medication should also relate to factors such as the client's health condition and acuity level, and the specific clinical area of practice

Registered nurses should be knowledgeable about policies pertaining to the administration of medications by nursing students, including any restrictions placed on students' practice. For instance, student nurses are not permitted to carry narcotic keys. Student nurses must have narcotics co-signed by a registered nurse, cannot sign a narcotic count, and may not witness the wastage, order, receipt or return of narcotics or controlled drugs to a pharmacy.

For more detailed guidelines related to the administration of medications by nursing students, by academic year, it is recommended that agencies contact the individual schools of nursing.

MEDICATION ERRORS

Medication delivery is a complex process which involves many healthcare providers, departments, processes and conditions, making it susceptible to errors. Each year a significant number of Canadians succumb to injury or death from medication errors, often due to various system-related problems. Up to one-quarter of adverse events in healthcare involve medications. Medication errors may happen at several stages, including prescription, preparation and administration (Coffey, 2009), and can be prevented by identifying the human and system factors that cause them and developing strategies for improvement.

Medication errors are defined as "any preventable event that may cause or lead to inappropriate medication use or client harm, while the medication is in the control of a healthcare professional, client, or consumer. Such events may be related to professional practice, healthcare products, procedures, and systems including: prescribing; order communications; product labeling, packaging and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use" (National Coordinating Council for Medication Error Reporting and Prevention, 2006).

When medication errors occur, immediate steps should be taken to safeguard clients, resolve issues, and report honestly. Immediate intervention may be necessary to protect a client from further harm. This would entail assessing the client for any untoward effects and notifying appropriate healthcare team members. Once a medical assessment of the client has been completed, and any required corrective treatments initiated, a registered nurse would be responsible to assess the client's condition until it is stable. Agency policy should be followed when informing the client and/or family of an error, addressing the healthcare professional responsible for the error, documenting the occurrence, and completing an incident report.

Registered nurses are often involved in promoting a culture of safety, in which healthcare providers are comfortable disclosing medication errors without fear of reprisal, shame or punishment. Such blame-free cultures encourage interprofessional dialogue, reflection, problem analysis and the development of preventive strategies. Transparent reporting processes should also assist in preventing the same errors from reoccurring and improve client safety.

It is considered an error when a medication is:

- administered to the wrong client
- administered at the wrong time
- administered via the wrong route
- administered in the wrong dose
- mixed in the wrong solution
- improperly reconstituted
- given for the wrong reason
- not given or omitted
- administered despite knowledge of a medication allergy

It is also a medication error when:

- the wrong medication is administered to a client
- documentation of administration is incorrect or absent
- medications are administered by healthcare professionals who do not have the appropriate training or authority.

Near Misses

Near misses occur when safety checks and systems fail but the event does not reach a client. In other words, a near miss is an event, situation or error that could have resulted in negative consequences, but did not occur because either by chance or through timely intervention the error did not reach the client (ISMP, 2009).

An example of a near miss would be when a medication error is not picked up despite an independent double-check, but is identified and averted prior to the medication being administered to a client. Near misses must be reported so underlying system failures can be analyzed and changes made to improve client safety.

Common Causes of Medication Errors

Some of the more common causes of medication errors include:

- stress
- multitasking
- demanding workloads
- time pressure
- inadequate number and type of healthcare providers
- nurse fatigue
- non-compliance with the 10 rights of medication administration
- technical flaws/equipment failures
- lack of knowledge (medication) on behalf of a prescriber or a practitioner administering the medication, or both
- lack of readily available medication administration resources
- outdated or an absence of medication policies and procedures
- miscommunication or poor communication between healthcare providers and departments
- information overload
- fear of reprisal when questioning an order
- inadequate client information
- memory lapses
- inaccurate or illegible transcription of orders
- illegible or erroneous orders
- ambiguity in product names, appearance or packaging
- confusing directions for use

- medications that are available in more than one concentration or dosage
- use of error-prone abbreviations and symbols
- transitions in care delivery (e.g., coffee break)
- faulty technique
- interruptions during the preparation or administration of a medication
- pharmacy dispensing and labeling errors
- packaging errors
- borrowed medications.

Borrowing Medications

In 2010, the Institute for Safe Medication Practices (ISMP) issued a safety alert about healthcare providers borrowing medications from one client when they do not have an adequate dose for another .

There could be several reasons for not having a required dose of a medication, including problems with the restocking of automated dispensing cabinets or the delivery of medications to a healthcare unit. A medication dose for a particular client may also be missing or unavailable because the:

- dose was actually already given but not documented
- dose was given to a client on another unit
- medication time or frequency was scheduled incorrectly and is being reviewed
- order was incorrectly interpreted or transcribed into the medication administration record
- medication was not dispensed by pharmacy because of a safety problem
- dose was used to replace one dropped on the floor or a dose that had been vomited
- medication was misplaced
- pharmacy never received the order
- name of a discontinued drug is still listed on the medication administration record
- dose was borrowed for administration to another client.

Borrowing medications is not only a nursing problem it is a complex interprofessional clinical issue that requires continuous team work and excellent communication among healthcare providers. Registered nurses should talk with colleagues to learn why medications are being borrowed and approach these issues and their causes collaboratively to stop this practice. It is also important to ensure that all healthcare practitioners understand the risks and consequences of borrowing medications and discourage the accumulation of discontinued or unused medications on healthcare units. For more information, visit www.nurses.ab.ca/carna-admin/Uploads/ab_rn_julyaug_10.pdf.

For a more complete list of reasons for ‘missing doses’, visit www.ismp-canada.org.

Strategies to Reduce Medication Errors

Collaboration between all members of the healthcare team responsible for medication delivery is needed to create strategies that will prevent medication errors. Registered nurses can act as leaders in recognizing system failures and addressing human factors that can lead to medication errors.

In an ideal medication administration system, there would be more than one practitioner between a drug and a client (i.e., the pharmacist, registered nurse, and physician). There would also be accompanying systems, with safeguards and strategies, to reduce the risk of errors when ordering, dispensing, or administering medications. For example, pharmacies would have a system of checks before medications are dispensed.

The following strategies, when implemented by registered nurses and/or employers, can help to reduce medication errors:

Competency

- Being knowledgeable about all aspects of a medication.
- Consulting with an authorized healthcare provider to verify drug calculations.
- Asking another authorized healthcare provider for an independent double-check when administering medications. In cases where there is no established agency policy, it is the registered nurse's responsibility to evaluate and decide whether to ask a colleague to double check a medication.
- Being attentive to look-alike/sound-alike drug names to ensure you have the correct one (e.g., Lamictal vs. Lamisil).
- Complying with the 10 rights of medication administration.

Communications

- Obtaining a comprehensive past and present client history and physical assessment.
- Clarifying incomplete or unclear orders.
- Using verbal medication orders only in limited circumstances.
- Always using clear, consistent communications.
- Using capital letters to avoid look-alike/sound-alike confusion (e.g., distinguish DOBUTamine from DOPamine).

System

- Conducting medication reconciliation (see p. 38).
- Preparing medications in a location free from distractions.
- Restricting and standardizing drug storage, stock and distribution.
- Standardizing medication delivery devices (e.g., infusion pumps) by minimizing the number of different kinds and maintaining competence in their operation.
- Providing adequate, secure workspaces in which to prepare medications.
- Providing adequate human resources and reference materials.

Culture

- Educating and encouraging clients to ask questions about their medications and express concerns about any aspect of the delivery process.
- Rechecking an order when a client expresses concern about a medication.
- Examining the root cause of system issues that can lead to error.
- Helping create a blame-free culture for the reporting of medication errors.

Medication Reconciliation

Safer Healthcare Now! , the flagship program of the Canadian Patient Safety Institute, supports the practice of medication reconciliation as a means of reducing the risk of medication error.

Medication reconciliation is a formal process in which healthcare professionals partner with clients, families, and each other to ensure that accurate and complete medication information is transferred at different points of care (within the continuum).

Medication reconciliation involves a systematic process for obtaining a medication history, and using that information to identify and resolve discrepancies in medication orders.

In acute care, medication reconciliation can be achieved by:

1. getting a complete and accurate list of a client's current home medications—including name, dosage, frequency and route.

2. using that list when writing admission, transfer and/or discharge medication orders.

3. comparing the list against a client's admission, transfer, and/or discharge orders; identifying and bringing any discrepancies to the attention of the prescriber; and, if appropriate, making changes to the orders, and documenting.

Medication errors that can be prevented by reconciling medications may include, but not limited to:

- omission of needed home medications
- failure to restart home medications following transfer and discharge
- duplicate therapies at discharge (the result of brand/generic combinations or formulary substitutions)
- errors associated with orders having incorrect doses or dosage forms.

In long-term care, as in acute care, the 'best possible medication history' forms the basis of medication reconciliation. The 'best possible medication history' would document all medications that a resident is currently receiving, even though some may be different from those that were actually prescribed. At each point of care when a resident is being transferred from one healthcare facility/service to another, the 'best possible medication history' would be compared to the resident's list of medication orders.

Registered nurses in home care settings are currently working in collaboration with Safer Healthcare Now! to institute the practice of medication reconciliation. Quite often clients' medications have changed when they return home from a stay in hospital. Registered nurses should use a systematic process to obtain the 'best possible medication history' and use that information to resolve any discrepancies between clients' old and new medication plans. As part of the reconciliation process, registered nurses should educate clients about their new medication plans, as well as the need to discard old or discontinued medications.

Medication reconciliation may prevent up to 70 per cent of all potential errors and 15 per cent of all adverse drug events. Reconciliation can be realized by looking at current processes, analyzing failures

and correcting them.

For more information on medication reconciliation, visit www.saferhealthcarenow.ca/EN/Interventions/medrec_acute/Pages/default.aspx.

Documenting Medication Errors

The facts of a medication must be documented in a client's health record, including the medication administered, what happened to the client, the client's status, corrective actions taken to safeguard the client, and follow-up monitoring.

Agency-specific forms should also be used to complete an occurrence or incident report, wherever available. However, the fact that an incident report was completed should not be documented in a client's health record and copies of these reports should not be added to the record. An incident report is a quality improvement tool intended to alert healthcare professionals of potential risks.

A medication occurrence or incident report should detail the:

- name and designation of the person who discovered the error
- client's name, and date, time, place of error
- original medication order as written by prescriber
- identification of type of error (e.g., transcribing, dispensing, administering, documenting)
- characteristics of the error (e.g., wrong patient, dose, drug, time, route)
- factors contributing to the error
- nursing assessment, including an evaluation of the client's response/condition following the error
- names and designations of personnel involved in the error
- immediate actions taken to safeguard the client, along with client responses.

Anyone involved in a medication error may be asked to participate in an agency's quality improvement review, conducted to improve client care and reduce future risks.

GLOSSARY

Accountability: answering for the professional, ethical, and legal responsibilities within one's role (i.e., decisions, activities, interventions): can never be shared or delegated.

Authorized prescriber: a healthcare provider authorized by legislation to prescribe drugs and other health products. In Nova Scotia, authorized prescribers include physicians, dentists, nurse practitioners, midwives, optometrists, and pharmacists.

Care directive: an order written by an authorized prescriber (e.g., nurse practitioner or physician) for an intervention or series of interventions to be implemented by another care provider (e.g., registered nurse) for a range of clients with identified health conditions and only when specific circumstances exist. A care directive relates to interventions for which the authorized prescribers hold ultimate responsibility, however, which must also be within the scope of practice of the care provider involved. Care directives can only be implemented when an authorized prescriber is available (determined by agency policy).

Clients: individual/s (e.g., family member/guardian/substitute caregiver), families, groups, populations or entire communities who require nursing expertise. In some settings, clients may be referred to as 'patients' or 'residents'.

Compounding: "to cause drugs to be mixed, prepared, altered in form, mixed with non-medicinal ingredients and otherwise changed from the manufactured form" (Nova Scotia College of Pharmacists, 2003). Compounding is performed only by pharmacists.

Context of practice: conditions or factors that affect the practice of nursing, including client population, (e.g., age, diagnostic grouping), location of practice setting (e.g., urban, rural), type of practice setting and service delivery model (e.g., acute care, community), level of care required (e.g., complexity, frequency), staffing and availability of other resources. In some instances, context of practice could also include factors outside the healthcare sector (e.g., community resources, government).

Dispensing: "the interpretation, evaluation and implementation of a prescription drug order, including the preparation and delivery of a drug or device or patient's agent in a suitable container appropriately labelled for subsequent administration to, or use by, a patient" (NAPRA, 2009).

Independent double check: a process in which two healthcare providers verify the accuracy of a medication prepared for administration. For example, a registered nurse may use this process to verify a dosage calculation. The most critical aspect is to ensure that the healthcare providers do not communicate with each other, so the visibility of the mistake would be reduced and the second provider would not have any expectation of what s/he would find. The second healthcare provider can conduct a verification either in the presence or absence of the first healthcare provider.

Individual scope of practice: the roles, functions, and accountabilities which members of a profession are legislated, educated and authorized to perform. The individual scope of practice for a registered nurse is based on the scope of practice of the nursing profession, and further defined by the registered nurse's specific education, experience, and context of practice (e.g., hospital, community).

Informed consent: a phrase used in law to indicate that the consent given by a person has been based upon a clear appreciation and understanding of the facts, implications, and future consequences of an action. In order to give informed consent, the individual concerned must have adequate reasoning faculties and be in possession of all relevant facts at the time consent is given. In some instances, a substitute decision-maker may be involved in giving informed consent.

Intervention: task, procedure, treatment or action with clearly defined limits, which can be assigned or delegated within the context of client care.

Medication administration: the act of giving medications to an individual client through a specific medication route (e.g., enteral, percutaneous, parental).

Medication reconciliation: a systematic process used to obtain a complete and accurate current list of a client's medications (i.e., name, dose, frequency, route) which is then compared to a physician's admission, transfer and discharge medication orders to identify and resolve any discrepancies (Canadian Patient Safety Institute; Safer Health Care Now!).

Medication use process: in Nova Scotia, this process involves prescribing, transcribing, dispensing, compounding, administering and monitoring medications.

Near miss or close call: an event, situation or error that could have resulted in unwanted consequences, but did not occur because, either by chance or through timely intervention, the event did not reach a client (ISMP, 2009).

Order: a written or verbal medication order (prescription) from an authorized prescriber who has the legislative authority (e.g., nurse practitioner, physician).

Patient population: the demographics and other particulars of a population being serviced: includes age, ethnicity, health status, socioeconomic status, and geographical location (rural versus urban).

Persons: the individuals, families, friends and communities that are the focus of the health system.

Person-centred care: a process that places a person at the centre of the collaborative healthcare team and supports that person's strengths, capabilities, needs, values, culture and choices.

Policy approval body: should consist of representative physician(s) delegating a medical function or representative authorized prescriber(s) providing a care directive; representative registered nurses involved in implementing a DMF or care directive; content experts, quality or risk management personnel, and ad hoc outside experts when necessary (e.g., ethics). An example of a policy approval body is a Medical Advisory Committee.

Registered nurse: a healthcare practitioner whose name appears on the register and who is licensed in the active-practising roster, the active-practising with conditions or restrictions roster, the transitional licence roster or the transitional with conditions or restrictions roster of the College of Registered Nurses of Nova Scotia (RN Act,2006).

Scope of employment: the range of responsibilities defined by the employer through specific job descriptions and policies.

Scope of practice of the profession: the roles, functions and accountabilities which members of a profession are legislated, educated and authorized to perform. In Nova Scotia, the scope of practice of registered nurses is defined within the Registered Nurses Act.

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APPENDICES

Appendix A: ISMP List of Oral Dosage Forms Not be Crushed

http://www.ismp.org/tools/donotcrush.pdf
(from www.ismp.org reprinted with permission from the Institute for Safe Medication Practices)

Appendix B: ISMP Canada's List of Dangerous Abbreviations, Symbols, and Dose Designations

http://www.ismp-canada.org/download/ISMPCanadaListOfDangerousAbbreviations.pdf
(from www.ismp-canada.org reprinted with permission from ISMP Canada)

Appendix C: ISMP's List of High-Alert Medications

http://www.ismp.org/tools/highalertmedications.pdf
(from www.ismp.org reprinted with permission from the Institute for Safe Medication Practices)

Appendix D: ISMP's List of Confused Drug Names

http://www.ismp.org/tools/confuseddrugnames.pdf
(from www.ismp.org reprinted with permission from the Institute for Safe Medication Practices)

ADDITIONAL RESOURCES FOR REGISTERED NURSES

College of Registered Nurses of Nova Scotia

A number of publications and resources are available on the College website (www.crnns.ca) to assist registered nurses with medication administration, including:

- ***Standards for Nursing Practice***
- ***CNA Code of Ethics for Registered Nurses***
- ***Complementary and Alternative Therapies: A Guide for Registered Nurses***
- ***Documentation Guidelines for Registered Nurses***
- ***Guidelines for Delegated Medical Functions and Care Directives***
- ***Immunization Guidelines for Registered Nurses***

The College also provides confidential nursing practice consultation services for members. To access these services, contact a practice consultant at the College (902.491.9744, ext. 224 - toll-free in NS 1.800.56.9744). Email info@crnns.ca.

QEII Health Sciences Centre Drug Information Centre: The Drug Information Centre offers a free service for health professionals in Nova Scotia; to find answers to questions about medications and best practice in medication administration. T 473.4234 or 473.4211.

Nova Scotia Poison Centre: The regional Poison Centre, housed at the IWK, provides a 24-hour toll-free poison information service. Medically allowable information is provided to the public, health professionals and others regarding treatment of poisonings and general questions about toxicology. For more information, go to www.iwk.nshealth.ca.

Canadian Nurses Association: *Patient safety resource guide*. Retrieved 2009 from http://www.cna-aiic.ca/CNA/practice/environment/safety/guide/default_e.aspx

Canadian Nurses Protective Society http://www.cnps.ca

Institute for Safe Medication Practices Canada (ISMP Canada): ISMP Canada is an independent national non-profit agency committed to the advancement of medication safety in all healthcare settings. ISMP works collaboratively with the healthcare community, as well as regulatory agencies; policy makers, provincial, national and international patient safety organizations; the pharmaceutical industry; and the public to promote safe medication practices. For more information, go to www.ismp-canada.org.

Safer Healthcare Now! (SHN): SHN offers Canadian healthcare organizations the opportunity to participate in and support a campaign dedicated to improving patient safety, through the implementation targeted interventions in patient care including medication reconciliation. For more information, go to www.saferhealthcarenow.ca.

ISMP Institute for Safe Medication Practices: A non-profit organization educating the healthcare community and consumers about safe medication practices. The ISMP Medication Safety Alert! is an innovative alert system sent biweekly by email that provides vital and potentially life-saving information about medication and device errors, as well as adverse drug reactions. In addition to the alerts, ISMP sends urgent advisories about serious errors or information that requires immediate attention. http://www.ismp.org/Newsletters/acutecare/default.asp.

Nurse Advise-ERR: **a** newsletter published throughout the year with articles of particular interest to nurses. http://www.ismp.org/Newsletters/nursing/Issues/NurseAdviseERR201007.pdf