

Guidelines



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Medication Guidelines

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Approved by the College and Association of Registered Nurses of Alberta (CARNA) Provincial Council, March 2015.

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Purpose

Nurses¹ play an essential role in medication reconciliation, preparing and administering medication, teaching **clients** about medication and monitoring, evaluating and documenting the response to medication. The purpose of this document is to provide **guidelines** to address various components of safe and effective medication management in the practice setting.

Guidelines: This document contains 40 guidelines. The guidelines are bolded and placed within a text box.

These guidelines are specific to medication management practices and are grounded in the foundational *Practice Standards for Regulated Members* (CARNA, 2013b). The directions, concepts and principles are also aligned with other CARNA documents. Some examples include:

- *Complementary and/or Alternative Therapy and Natural Health Products: Standards for Registered Nurses* (CARNA, 2011)
- *Decision-Making Standards for Nurses in the Supervision of Health Care Aides* (CARNA, 2010)
- *Health Professions Act: Standards for Registered Nurses in the Performance of Restricted Activities* (CARNA, 2005a)
- *Prescribing Standards for Nurse Practitioners* (CARNA, 2014)
- *Standards for Supervision of Nursing Students and Undergraduate Nursing Employees Providing Client Care* (CARNA, 2005b)

Medication Management

Safe, competent and ethical medication management is more than performing the technical task of administering the medication. It requires nursing knowledge, skill and

¹ Words or phrases in bold italics are listed in the Glossary. They are displayed in bold italics upon first reference.

judgment. Safe and effective medication practices are a result of the efforts of many individuals and reliable systems (Institute for Safe Medication Practices, 2007b).

Safe medication management includes the knowledge of medication safety, human factors that may impact medication safety, limitations of medication systems and best practices to reduce medication errors.

Safe medication management requires:

- assessing the appropriateness of a medication for the client based on their health status or condition
- upholding the client's rights in the medication process
- information on allergies and sensitivities
- performing medication reconciliation at client ***transitions of care***
- knowledge of the actions, interactions, usual dose, route, side effects and adverse effects of the medication
- knowledge of correct drug dose calculations (drug dose calculators and drug libraries) and preparing the medication correctly
- appropriate documentation
- educating clients on the management of their own health including fully informing them about their medication, anticipated effects, side effects, contraindications, self-administration, treatment plan and follow-up
- monitoring the client before, during and following medication administration
- managing side effects or adverse effects of the drug
- evaluating the effect of the medication on the client's health status

The Seven Rights of Medication Administration

Safe and competent medication practice requires using the seven rights of medication administration.

The rights are:

1. right medication
2. right dose

3. right client
4. right route
5. right time and frequency
6. right documentation
7. right reason

Guideline 1: Nurses practice safe and effective medication management and use the seven rights of medication administration.

Medication Reconciliation

Communicating effectively about medication is a critical component of safe medication delivery (Accreditation Canada, the Canadian Institute of Health Information, the Canadian Patient Safety Institute, & the Institute for Safe Medication Practices Canada, 2012). Medication reconciliation is part of the High 5s Project launched by the World Health Organization to address major concerns about client safety around the world.

Medication reconciliation is a formal process in which health-care providers work together with clients and families to ensure accurate and comprehensive medication information is communicated consistently across transitions of care. It enables authorized prescribers to make the most appropriate prescribing decisions for the client.

Medication reconciliation involves:

- a systematic and comprehensive review of all medication a client is taking including complementary and alternative medications; it is also known as a best possible medication history (BPMH)
- compiling an accurate and current medication list utilizing two sources of information (e.g. client and the electronic health record)
- using the medication list at all transitions of care to create medication orders or compare orders to what the client should be taking
- identifying any discrepancies and bringing them to the attention of the health-care team and client
- resolving all discrepancies

- documenting and communicating any resulting changes and the reasons why
- ensuring that a medication being added, changed or discontinued is carefully evaluated

Nurses play a critical role in the medication reconciliation process.

Guideline 2: Nurses perform medication reconciliation in collaboration with the client/family and the health-care team.

Further information on medication reconciliation can be found at the following websites:

www.ismp-canada.org

www.saferhealthcarenow.ca

www.who.int

Medication Orders

Medication orders are directions from a prescriber authorized under the *Health Professions Act* (2000) for the administration of a medication to a client. Nurses administer medications based on these orders. Ordering a Schedule 1 medication in Alberta is a restricted activity under the *Government Organization Act* (2000) and can only be performed by authorized prescribers. Many practice settings require an order or prescription for medication on any of the Schedules.

What is a Schedule 1 Medication?

A Schedule 1 medication is a medication that requires a prescription or order from an authorized prescriber. Controlled drugs and substances are included in Schedule 1. For information on medication schedules please see the *Scheduled Drugs Regulation* under the *Pharmacy and Drug Act* (2000) at http://www.qp.alberta.ca/documents/Regs/2007_066.pdf.

Nurse practitioners (NP) and graduate nurse practitioners are authorized to prescribe a Schedule 1 medication. Information on a prescriber's authority is available from the prescriber's regulatory college. Registered nurses, graduate nurses and certified graduate nurses are not authorized to prescribe Schedule 1 medications.

Guideline 3: Nurses implement safe medication orders from authorized prescribers.

The physician assistant is not an authorized prescriber. They are unregulated workers who work under the supervision of a physician, and provide direct client care. Any medication order from a physician assistant must be authorized by the supervising physician before it is implemented by nurses. It is the responsibility of the physician assistant to ensure that the medication order is signed by the supervising physician in a timely manner.

Guideline 4: Nurses only implement medication orders from a physician assistant that have been authorized by the supervising physician.

Components of a Medication Order

Medications should be prescribed as direct orders; that is, the medication is ordered for a specific client. An authorized prescriber is expected to document their own medication orders.

A complete medication order includes:

- full name of the client
- the date
- name of the medication
- drug strength, if applicable
- dosage, if applicable
- route of administration
- frequency, and in some cases the length of time the drug is to be administered
- prescriber's name, signature and designation
- reason/purpose (e.g. Acetaminophen for headache, Morphine for post-op pain)
- monitoring as required

Abbreviations

The use of abbreviations in the medication process can be misinterpreted and have been identified as an underlying cause of serious, even fatal medication errors (ISMP, 2013c). Please see ISMP Canada's do not use abbreviation list at <http://www.ismp-canada.org/download/ISMPCanadaListOfDangerousAbbreviations.pdf>.

Nurses should only use practice-setting approved abbreviations and symbols.

Verbal and Telephone Orders

Verbal and telephone orders are more prone to error because of miscommunication when compared to orders that are written or communicated in a secure electronic health record system. The expectation is that authorized prescribers will provide a handwritten order or enter medication orders into a point of care electronic health record whenever possible.

Situations where verbal or telephone orders would be considered acceptable include:

- **emergent or urgent situations** where delay in treatment would place a client at risk of serious harm; or
- when a prescriber is not present and direction is urgently required to provide appropriate client care

In practice settings where authorized prescribers are not present (e.g. community settings, ambulatory care) and cannot enter orders into the electronic record, faxed medication orders are considered preferable to telephone orders.

Guideline 5: Nurses only accept verbal and telephone orders in emergent or urgent situations where the authorized prescriber is unable or not present to document their medication orders directly.

The authorized prescriber is accountable for authorizing or signing all of their verbal or telephone orders unless in an emergent or urgent situation where there is a designated recorder. The practice setting should have a policy that outlines the process for the use of verbal or telephone orders. Nurses are not responsible for ensuring that medication orders are signed off by the authorized prescriber.

When accepting and documenting verbal or telephone medication orders, the nurse is responsible for:

- clearly identifying the client (see the section on two client identifiers)
- assessing the appropriateness of a medication for a client
- confirming the identity and spelling of the prescribers name, if unknown
- accurately recording the medication order received in the client record
- indicating that the order is a verbal/telephone order
- reading back the order to the authorized prescriber to confirm the accuracy of the medication order including spelling out of problematic drug names (ISMP, 2011b) and repeating dosages as single digits for clarity

Intermediaries

Intermediaries are individuals who phone in medication prescriptions to a pharmacy on behalf of an authorized prescriber. Telephone orders or prescriptions to the pharmacy should be by direct communication between the authorized prescriber and the pharmacist. Direct communication between an authorized prescriber and the pharmacist lowers the risk of medication errors.

Communicating a prescription on behalf of an authorized prescriber:

- blurs accountability
- increases the risk of miscommunication
- reduces the effectiveness of the prescription confirmation process
- increases the legal risk for the intermediary and authorized prescriber as current legislation does not support or is silent on the use of intermediaries in the communication of medication prescriptions

There are unique challenges related to providing safe, timely and effective client care in community and ambulatory settings. The document in Appendix 1, *Ensuring Safe and Efficient Communication of Medication Prescriptions in Community and Ambulatory Settings* (Alberta College of Pharmacists, College and Association of Registered Nurses of Alberta, & College of Physicians and Surgeons of Alberta, 2007), provides guidance and direction to nurses about their responsibility and the potential legal and professional implications.

Guideline 6: Nurses are not authorized to phone in a medication prescription to a pharmacy on behalf of an authorized prescriber.

Standing Orders

Historically, **standing orders** were used in some practice settings to prescribe or order treatment(s) or medication(s) that applied to a group or population. Standing orders were not client-specific and did not specifically identify conditions and circumstances that must be present to administer the medication(s) or implement the treatment(s). Standing orders are no longer supported as best practice and should not be used. Order sets and protocols are supported as best practice.

Order Sets

Pre-printed or electronic order sets are used in many practice settings. They provide an authorized prescriber with a choice of medication or treatment orders that apply to a specific population. The authorized prescriber identifies only those particular orders that apply to a specific client (College of Registered Nurses of Nova Scotia, 2011). Order sets have the potential to coordinate care, reduce variation in care, enhance workflow and reduce medication errors (ISMP, 2013b). ISMP has established guidelines for developing standardized order sets. Please see their website at: www.ismp.org.

Guideline 7: Nurses implement pre-printed order sets that are client specific and have been authorized by the prescriber.

Protocols

A protocol is a formal document that guides decisions and includes interventions for specific health-care problems to guide clinical decision making. Protocols are a set or series of treatment interventions that can be implemented by the care provider (e.g. nurse) for a specific group of clients with identified health conditions when specific circumstances and criteria exist (CRNNS, 2011).

A protocol includes:

- identification of any contraindications or exclusions to implementing the protocol

- clear, specific clinical conditions that must be met before the interventions can be implemented for that client
- the relevant assessment data to be collected and used in decision making when implementing the protocol
- monitoring parameters

Established protocols need to be reviewed and evaluated on a regular basis to ensure that they continue to be **evidence-informed** and reflect best practice. For more information on the development of protocols and what must be included, please see Appendix 3.

Implementation of a Protocol

The purpose of a protocol is to provide safe, timely, effective and efficient client care, using best practice and the expertise of health-care professionals. The nurse uses their clinical judgment to decide when to implement the protocol.

Guideline 8: Nurses assess and determine if a specific client with an identified health condition meets the criteria outlined in the protocol.

The nurse who implements interventions based on a protocol must have the necessary knowledge, skill and competence to perform the interventions. The protocol and the interventions included in the protocol must be supported in policy in the specific practice setting. The nurse is responsible for documenting all aspects of the care they provide.

Guideline 9: Nurses have the necessary knowledge, skill and competence to perform the interventions within a protocol.

Protocols that Include Schedule 1 Medications

When the nurse has determined that an individual client's clinical condition or health need meets the criteria outlined in a specific protocol, the nurse must identify if the protocol involves the administration of a Schedule 1 medication that requires a prescription or order. Nurses must have a client-specific order from an authorized prescriber to implement the named protocol prior to administering the Schedule 1 medications within the protocol.

The order can be a client-specific order for the named protocol itself. A client-specific order for the protocol itself would authorize the administration of all medications within the named protocol. In emergent situations where it is not possible to obtain an order prior to initiating a protocol, contacting the authorized prescriber can happen at the same time as the protocol and interventions within it are being implemented. Emergent situations are defined as circumstances that call for immediate action or attention such that a delay in treatment would place an individual at risk of serious harm.

For protocols that include over the counter (OTC) medications or medications that do not require a prescription or order, please refer to the OTC medication section.

Guideline 10: Nurses must have a client specific order from an authorized prescriber in order to implement a protocol that includes the administering of Schedule 1 medications within the named protocol.

Communication of Medication Orders

Physicians, NPs, pharmacists and other regulated health professionals who are authorized prescribers can provide orders for medications.

Nurses have a primary responsibility to advocate for their client's safety and well-being and have a professional responsibility to support decisions with evidence-informed rationale (CARNA, 2013b). Nurses question medication orders that are unclear or inconsistent with therapeutic client outcomes or best practice. The nurse must consider all appropriate information and communicate to the prescriber a clear and evidence-informed rationale to support their concerns when questioning a specific medication order.

If there is a discrepancy between the authorized prescriber's view and what the nurse feels is safe, competent and ethical care, the nurse needs to discuss the concern with the prescriber and notify the supervisor or employer of the discrepancy. The nurse documents the discussion and decision in the health record.

Guideline 11: Nurses question and clarify orders that are inconsistent with therapeutic outcomes, best practices, and safety standards prior to administration of the medication.

Off-Label Use

Some medications may be prescribed or used for alternative indications (e.g. off-label use) or be part of a research study. Prescribing Health Canada approved medications for alternative usages that were not identified as part of the Health Canada approval process (such as another indication, differing age range or a different dosage form) may benefit a client. An example of off-label medication use is prescribing a medication for a child that has only been approved for use in the adult population.

The nurse should be knowledgeable about the scientific rationale for the off-label use of a medication and review all available information including drug resources and/or product monographs, available research findings and relevant practice setting policies. The nurse should consult with a pharmacist for support and expert opinion. Clients should be informed of the reason for the off-label medication use and associated risks.

Guideline 12: Nurses can administer an approved Health Canada medication for off-label use if they have consulted with a pharmacist and the medication is:

- a) considered best practice or accepted clinical practice in peer reviewed clinical literature, or
- b) part of a study approved by an Alberta Research Ethics Board

Transcribing

Transcribing medication orders is the process of transferring medication order information from a paper-based or electronic order form to a medication administration record (MAR). The paper-based or electronic MAR outlines when medications are to be administered to a client and is used by care providers to document when medications have been administered.

Transcribing medication orders is within the scope of practice for nurses and is part of the process of administering medication.

Guideline 13: When transcribing medication orders, nurses apply professional judgment in deciding the administration schedule to maximize the therapeutic effect of the drug, support client choice and comply with practice setting policy.

In some practice settings, such as in acute care hospitals and long term care facilities, other individuals may begin the process of transcribing orders, but the transcribed orders must be verified by a regulated health professional.

Electronic medication order entry systems allow prescribers to enter medication orders directly into the point of care electronic health record system. The system automatically transcribes the orders and generates a MAR. One of the benefits of electronic order entry systems is that errors related to illegible writing, incomplete orders or misunderstanding resulting from verbal and telephone orders are decreased.

Nurses must know their role and responsibility in the transcribing of medication orders in an electronic order entry system as outlined by the employer.

Guideline 14: Nurses are accountable for validating the accuracy and completeness of the transcription of the order before administering the medication to the client.

Administering Medication

The administration of medication is a cognitive and interactive aspect of nursing care and is more than the psychomotor task of administering a medication to a client. It involves client assessment, making clinical decisions and planning care based on this assessment and clinical data. Medication administration is performed in collaboration with the client and family. Best practices for administering medication applies to prescription and over the counter (OTC) medication as well as natural health products. More information on natural health products is provided in the CARNA document *Complementary and/or Alternative Therapy and Natural Health Products: Standards for Registered Nurses* (2011).

Infection Prevention and Control Practices

Infection control practices and the prevention of disease transmission with medication administration are essential for client safety. Nurses involved in medication preparation and administration must be knowledgeable and competent in routine practices, a set of infection prevention and control practices to be implemented at all times with all clients, including effective hand hygiene, safe injection practices, the use of aseptic techniques and waste and sharps handling (ISMP, 2010) including:

- hand washing before, during and after client contact during medication administration
- maintaining aseptic technique during preparation and administration of parenteral medication
- properly using single-use medical devices (syringes, needles and infusion supplies):
 - ◆ always consider a syringe or needle contaminated after it has been used to enter or connect to a client's intravenous (IV) catheter, infusion bag or administration set
 - ◆ use bags or bottles of IV solution for only one client
 - ◆ new needle, new syringe every time
- maintaining sterility of medical devices until the point of use
- capping reusable (one client) IV tubing with a sterile cap when not in use
- properly disinfecting ports on IV tubing/sets when accessing for medication administration (ISMP, 2007c)
- using single-dose vials for only one client
- using single-dose vials and pre-filled syringes whenever possible
- properly disposing of medication, syringes, needles and infusion supplies - dispose of sharps immediately after use in a puncture-proof, biohazard container

Additional infection prevention and control resources can be accessed at Alberta Health's website: www.health.alberta.ca

Guideline 15: The nurse integrates infection prevention and control principles, standards and guidelines in the medication management process.

Medication Preparation

The preparation of medication is an important aspect of the medication administration process. Preparation can include selecting, calculating, mixing, labelling, drawing up and pouring. Medication needs to be prepared as close as possible to the administration time. Medication should be kept labeled until administration (Kliger, Blegen, Gootee, &

O'Neil, 2009). It is important for the same nurse to carry out all the steps of medication administration to decrease the risk of error and maintain clear lines of accountability.

Guideline 16: The same nurse prepares and administers the client's medications.

There may be situations where more than one health-care professional may be required to administer a single medication. Some examples include:

- an emergency lifesaving or code situation where one nurse prepares and labels the medication and another health-care professional is required to administer it
- the nurse prepares and initiates an IV medication, but due to the length of time required for its infusion, another nurse assumes the responsibility to monitor, maintain and ensure the infusion is completed
- medications prepared by pharmacy

In many practice settings, certain types of medication may be prepared by a pharmacist. For example, nurses in community settings may administer cytotoxic medication (e.g. methotrexate) which requires preparation under a laminar flow hood in a pharmacy setting. These products are prepared, packaged, labelled and delivered to a client's home and are ready to be administered by the nurse.

Some medications are also pre-dosed directly from the drug manufacturer and are ready for administration to the client (e.g. low molecular weight heparin). In these situations, the nurse would need to be supported by practice setting policy and must document the nursing care they provided.

Guideline 17: Nurses can administer pharmacy or manufacturer-prepared and labeled medications with an order from an authorized prescriber.

Pre-pouring medication is **not** acceptable because:

- the pre-poured medication cannot accurately be compared to the MAR
- it can blur the accountability for making sure the seven rights are met
- it can increase the possibility of errors (Canadian Nurses Protective Society, 2007)

If nurses cannot administer medications immediately after preparing them, they ensure that the medications are either discarded or securely stored for them to administer as soon as possible when supported by practice setting policy.

Guideline 18: The nurse does not pre-pour medication for themselves or others to administer.

Compounding Medication

The definition of compound is:

“compound” means to mix together two or more ingredients of which at least one is a drug for the purposes of dispensing a drug or drugs, but does not include reconstituting a drug or drugs with only water;

(*Government Organization Act*. R.S.A. 2000, c. G-10, Sch. 7.1, 1(b))

In most circumstances, compounding is done by pharmacists; however, nurses in Alberta are given the authority to compound medication when supported by practice setting policy. An example is the addition of IV medication to an IV solution for administration.

The mixing of medications of all dosage forms; oral liquid or solid, parenteral and topical often affects the storage requirements, stability, and subsequently the efficacy of the product. Consultation with a pharmacist and/or published references is expected if the nurse is mixing and/or storing compound medications.

Guideline 19: Nurses are authorized to compound medication.

Administration Times

ISMP has established acute care guidelines for timely administration of scheduled medications that nurses and employers can use as a resource when developing policies and procedures around medication administration times (ISMP, 2011a). Please see the following for more information: <http://www.ismp.org/tools/guidelines/acutecare/tasm.pdf>.

Drug delivery systems, complexity of care and workload can effect administering medication at the approved time. Nurses in all practice areas are encouraged to be involved in the development of practice setting guidelines or policies related to timely administration of scheduled medication.

Guideline 20: Nurses administer medications on time or as close as possible to the scheduled time.

Client Consent

Informed and **capable** clients have the right to make decisions about accepting or declining a medication or to self-administer medication. Nurses are responsible for ensuring that clients have accurate information about their medication in a format that the client can understand. Nurses respect client choice and verify informed consent with the client before administering a medication (Canadian Nurses Association, 2008). In a situation where a client refuses a medication, the nurse should determine the reasons; assess the client's level of understanding about the medication's effects, follow-up with the prescriber and document the situation.

Informed consent can be recorded formally, such as on a consent form when a client is participating in a clinical trial. In clinical practice settings consent is given verbally or is implied; for example, a client holding out their arm for an injection.

Policy and procedures for obtaining informed consent from the capable client should be developed and implemented based on legislation and best practices. The *Consent for the Incapable adult* (CNPS, 2009) and the *Adult Guardianship and Trusteeship Act* (2008) provide more detailed information relating to the issue of informed consent.

Guideline 21: Nurses verify informed consent with the client before administering a medication.

Independent Double Checks

Independent double checking of a **high-alert medication** is a strategy that is used to help detect potentially harmful medication errors before they reach clients (ISMP, 2013a).

An independent double check requires two qualified health-care professionals to separately check each component of the work process (check the prescriber order, compare the medication to the order and MAR, calculate the dosage, compare the result and check the client identifiers). An independent double check is completed just prior to

the medication being administered. Two people are unlikely to make the same mistake if they work independently. If they work together or influence the checking process by suggesting what the checker should find, both could follow the same path to an error. The person asking for the double check must not influence the individual checking the product in any way (ISMP, 2013a).

Some practice settings have established policy requiring nurses to perform independent double checks of certain high-risk medications such as insulin, heparin or chemotherapy.

Guideline 22: Nurses follow practice setting policies and procedures for independent double checking of medication and document all aspects of their independent double check.

Two Client Identifiers

Proper identification of the client prior to medication administration is a safety process that can help eliminate the wrong medication being administered to a client (Accreditation Canada, 2013). The intent of checking at least two client identifiers is to reliably identify the individual as the person for whom the medication is intended and to match the medication label to that individual.

Some examples of checking two client identifiers:

- The nurse verbally, manually or electronically checking the client's name and ID number on the MAR with the client's name and ID number on their armband.
- The nurse asking the client to spell their last name and state their date of birth and then comparing the answers with the medication order or MAR.
- In home care, the nurse asking the client to spell their last name and state their date of birth and/or their correct address.
- In occupational health settings, the client spelling their last name and showing their company identification or employee number.
- For clients not having capacity to make informed decisions, the nurse follows practice setting policies.

The goal is to ensure accurate identification of care recipients and to ensure the safety of clients during medication administration.

Guideline 23: Nurses follow practice setting policy regarding using two client identifiers during the medication administration process.

Range Doses

Range doses are medication orders in which the dose, frequency or route of administration for a medication is prescribed in a range (e.g. Morphine 2 mg - 4 mg IV q3h prn for pain). Range doses are used in situations where a client's need for the medication varies from day to day or within the same day. A range dose order gives the nurse the flexibility to make a decision on the appropriate dose of medication to administer, based on their assessment of the client immediately prior to medication administration.

Orders for pain medication that contain a dosage range should have a fixed time interval (Gordon et al, 2004).

Acceptable: Morphine 2 mg - 4 mg IV q4h
Avoid: Morphine 2 mg - 4 mg IV q3h-4h

Complete and comprehensive client assessment is critical when administering medication using a range dose order. Whenever possible, the nurse should have the client rate their pain using approved pain management tools, discuss with the client the appropriate amount of medication required, review the effectiveness of any previous medication dosages administered as a reference point, monitor and document the effectiveness of the medication administered.

Problems can occur with range dose orders when clients are prescribed an exhaustive variety of pain management medication options in multiple routes and dosages without clear indications when to use which analgesic. In addition, problems can occur if the nurse considers using the unused dosage of a range dose order as a break-through pain order as this is not best practice.

An Example:

Morphine 2 mg - 4 mg IV q4h prn for pain is ordered for Mr. Murray. The nurse (based on a comprehensive assessment and discussion with Mr. Murray) decides to administer Morphine 2 mg IV at 1400. After one hour, the client continues to have pain. The nurse cannot administer another 1-2 mg of Morphine an hour later based on this same order as the order identifies the timeframe as q4h, not q1h. The nurse needs to contact the authorized prescriber for further medication orders to address the client's pain.

In the example provided above, the decision by the nurse to administer another 1-2 mg of Morphine is not permitted because of:

- the accountability and legal risk for the nurse acting outside of the timeframe of the Morphine order (the above order indicates that the client needs to wait at least three hours between doses)
- the lack of clarity on the time to administer the next prn dose of Morphine

Clear communication among clients, nurses, physicians and pharmacists is vital for a range dose system to work effectively.

Policy should address:

- which medication may be ordered and administered by means of a range dose order
- what type of range dose orders are appropriate (i.e. dose, frequency, route)
- the need for ongoing evaluation and communication of the range dose medication

Guideline 24: Once a dosage is chosen within a range dose order, the nurse cannot use any portion of the remainder of the range dose within that same time frame.

Prn Medications

Prn medications are medications prescribed to be given only when a client requires it. A prn prescription includes the frequency with which the medication may be given, such as q4h prn. This time frame means that the client needs to wait at least four hours between doses. The purpose of the medication should also be identified in the order (e.g., for sleep, pain, nausea).

When administering prn medications, nurses must document their assessment, the time the medication was administered and the effectiveness of the medication. Nurses must not administer any prn medication for a purpose other than the one identified in the order.

Allergy Testing and Desensitizing Injections

Specialized knowledge, skill and judgment are required to administer allergy tests or desensitizing injections.

Nurses who administer these agents should be supported by practice setting policy, as there may be a risk of sudden, severe side effects. Emergency equipment and resources should be readily available in the practice setting.

Guideline 25: Nurses administering allergy testing and desensitizing injections must have specialized knowledge, skill and judgment.

Investigational and Special Access Program Medication

Investigational and special access program medication must be prescribed. An investigational drug is a medication that has been approved for human clinical trials by Health Canada and the practice setting. Special access program medications refer to drugs that are not on a practice setting's formulary or approved for general use, and require special authorization through the *Canada Food and Drug Act* (1985).

Guideline 26: Nurses administering investigational or special access program medication must have the necessary information (e.g. product monograph) to safely administer, monitor and manage these medications and any potential side effects and adverse effects.

Placebos

The administration of placebos to clients without their knowledge and consent is inappropriate and unethical. Clients have a right to make informed decisions regarding their medication (CNA, 2008). Administering placebos may be ethically acceptable when the client is aware that the medication is a placebo, or as part of a double-blind research

study in which the client has been informed as part of the consent process that they may receive a placebo.

Cosmetic Procedures

The number of clients who receive cosmetic procedures in Canada is on the rise. Some examples of the services provided are Botox injections, dermal fillers, use of laser for a number of purposes, fat and cellulite manipulation, chemical peels and hair transplants. Nurses require additional education and experience to ensure that they are competent if they engage in these interventions. Nurses are responsible for attaining, maintaining and evaluating their competence in the performance of any intervention or activity.

Nurses involved in these procedures need to carefully consider whether they:

- fully understand all of the risks and benefits associated with the procedures and equipment
- are aware of the possible complications and what is required to deal with such complications
- can provide appropriate recommendations and counseling to clients considering those procedures
- have the technical capacity to provide the service skillfully and safely
- have liability protection for their practice

Any Schedule 1 medication such as Botox requires a client-specific order to administer it. The authorized prescriber is responsible for assessing the client, determining the need for medication and providing the order. Only authorized prescribers can determine the dosage of Botox.

Guideline 27: Any Schedule 1 medication such as Botox requires a client assessment and a client specific order from the authorized prescriber prior to the administration of the medication.

Immunizations

Additional knowledge, skill, and competence are required to administer vaccines. A client-specific prescription or order is required for a nurse to administer any immunizing

agent that is a Schedule 1 vaccine. Schedule 2 vaccines (e.g. flu vaccine) do not require a prescription or order; however, nurses administering Schedule 2 vaccines need to be supported by their practice setting and need to be part of a quality immunization program.

For information on medication and vaccine schedules please see the *Schedule Drugs Regulation* under the *Pharmacy and Drug Act* (2000) at http://www.qp.alberta.ca/documents/Regs/2007_066.pdf.

For nurses employed in public health and some other settings, the Medical Officer of Health provides authority to nurses to administer Schedule 1 and 2 vaccines and epinephrine as part of a provincial immunization program and Alberta Immunization Policy. The nurse administering immunizations is responsible for following the applicable legislation and regulation and for ensuring that a client-specific order is obtained when required.

Guideline 28: The nurse administering immunizations is responsible for following the applicable legislation and regulation and for ensuring that a client specific order is obtained when required.

Alberta has a comprehensive immunization program where universal immunization coverage is provided (Alberta Health and Wellness, 2007). For information on Alberta Health's immunization policy go to their website at: www.health.alberta.ca.

Nurses who immunize clients must have knowledge of the scientific evidence supporting the effectiveness of vaccines, understand the immunization process and must have the knowledge, skill and judgment to assess the appropriateness of administering the vaccine to an individual client. A quality immunization program includes:

- educating the client about the risks and benefits of receiving and not receiving the vaccine, keeping track of and documenting their own vaccine schedule
- comprehensive assessments for anaphylaxis risk such as previous anaphylaxis, severe allergy to any component of the vaccine or to latex
- implementing and following Canadian guidelines when storing, handling or transporting vaccines
- preparing and administering vaccines
- monitoring the client during and following vaccine administration

- managing side-effects or adverse effects of the vaccine, including anaphylaxis
- tracking and reporting all vaccine-related adverse events
- participating in local and provincial initiatives that evaluate immunization programs
- ensuring that documentation procedures are in accordance with the Canadian guidelines
- establishing methods to effectively manage vaccine inventory and monitor vaccine expiry dates

The Public Health Agency of Canada has outlined core competencies needed by health care professionals to administer immunizations in Canada. Please go to their website at www.phac-aspc.gc.ca.

Over the Counter (OTC) Medication

OTC medications refer to medications that can be obtained without a prescription from a pharmacy (Schedule 2, 3 and Unscheduled). The medication/drug scheduling categories are outlined by the *Alberta Pharmacy and Drug Act (2000)* and are aligned with the national drug schedule.

The four categories are:

Alberta Drug Schedules	
Schedule I	Drugs that require a prescription from an authorized prescriber. Includes Controlled Drugs and Substances. Can only be stored in a pharmacy and distributed by a pharmacist.
Schedule II	Drugs that are available without a prescription but must be stored in a pharmacy and distributed by a pharmacist. There is no opportunity for client self-selection.
Schedule III	Drugs that are available without a prescription from the client services section of the pharmacy. Can be self-selected by clients for use from a pharmacy but the pharmacist must be present to offer assistance if needed.
Unscheduled	Drugs not listed in Schedule I, II or III that may be sold from any retail outlet.

See *Alberta Pharmacy and Drug Act (2000)* as legislation changes (www.qp.gov.ab.ca)

Nurses can recommend and assist clients in the selection of OTC medication or implement a protocol that contains an OTC medication when supported by their employer's policy. If there is no policy to support nurses in this role, they should not be engaged in recommending OTC medication.

The safe recommendation of OTC medication requires the involvement of the interprofessional team, including the pharmacist in the establishment of any policies, protocols and procedures involving OTC medication. The nurse needs to ensure:

- support systems are in place that enables the client to make informed decisions and self-select their OTC medication, whenever possible
- the client is referred to other care providers (family physician or pharmacist) when the client's specific health information or medication history is not known
- adherence to the OTC medication policy and/or protocol in their practice setting
- clients who are capable to self-administer OTC medications are recognized and supported
- additional nursing education is completed as required by the practice setting
- clients are referred to other care providers when required

Guideline 29: When involved in the recommendation of over the counter (OTC) medication, nurses support systems that enable the client to make informed decisions and self-select their OTC medication, whenever possible.

The safe recommendation of OTC medication requires additional knowledge and skill as these medications can cause serious side effects, have potential interactions with other medication and/or mask other, more serious health conditions.

The nurse who recommends OTC medication should:

- be knowledgeable about the actions of the specified medication and the possible interactions with current medication, health conditions or diet
- be knowledgeable of current evidence to support the judgment and decision making around the recommendation or administration of an OTC medication

- assess the client to determine that the client's condition requires an OTC medication
- provide education regarding the therapeutic effects and potential risks/side effects to the client
- monitor and evaluate the effects of the OTC medication
- document the action taken or advice given
- counsel the client to discuss recommendations with a pharmacist, if possible

Guideline 30: Nurses only recommend or administer OTC medication when there is supporting practice setting policy in place.

Guideline 31: Nurses are responsible and accountable for:

- 1) following the practice setting OTC medication policies and/or protocols
- 2) performing the appropriate assessment
- 3) ensuring that they have the knowledge, skill and competence to recommend an OTC medication safely and ethically

Client's Own Medication

Self-Administration of Medication

When appropriate, the nurse should support clients who are capable of self-administering medication. These clients may be completely independent or require some assistance, such as help with opening containers, mechanical aids or preparing/preloading medication.

Practice settings should have appropriate policy in place and safe medication storage areas to support self-administration of medication by clients.

Guideline 32: Nurses are responsible for assessing and documenting the client's ability for self-administration of medication.

Acute Care and Continuing Care Facilities

Practice settings should have policies for OTC and prescription medications that clients bring with them into the health-care setting. In many health-care settings, the OTC and prescription medications the client brings with them are identified for a BPMH, but are then returned to the client's home.

In order for a client or nurse to administer a client's own medications in these practice settings, the nurse needs to verify the medication with a pharmacist, have an authorized prescriber's order for the medication, and be supported by the practice setting policy.

Home Care and Supportive Living Settings

In settings such as home care and supportive living, the client may not be able to manage their medications on their own and require assistance. Nurses offer support in these practice areas and can assign assistance or administer a client's own medication when the following criteria are met:

- practice setting policy supports the use of the client's own medications
- a medication reconciliation process is in place to verify that the medication list (or medication profile generated by the pharmacy involved in care) is current and accurate
- the medication list is verified by the most responsible health-care practitioner who is authorized to prescribe
- the medication is:
 - ◆ legibly labeled
 - ◆ labelled according to the dispensing standards from the Alberta College of Pharmacists and in their original containers, or
 - ◆ prepared by a pharmacy (e.g. in a blister pack or multi-dose system)

It is important to note that the dispensing label affixed to a medication container is not the order from the authorized prescriber.

If there is a discrepancy between the dispensing label and the client's or family member's directions for administration, or there are questions about the identity of the medication or the label, the nurse must clarify the order with the prescriber and document the discrepancy and the rationale for following the selected direction.

The nurse may be involved in implementing and/or maintaining medication delivery systems that support the administration and storage of the client's own medications. In these instances, consultation with a pharmacist or with the Alberta College of Pharmacists is recommended to ensure that an appropriate system is established to meet the needs of clients.

Guideline 33: The dispensing label affixed to a medication container is not the order from the authorized prescriber.

Management of Controlled Drugs and Substances

The requirements for safe handling and administration of narcotics and controlled substances are outlined in federal legislation. Pharmacists, in consultation with other stakeholders, develop policies at the practice setting level regarding storage, control and access to controlled substances and narcotic counts. Nurses should follow organizational policy related to the management of controlled drugs and substances.

Administration of Cannabis for Medical Purposes

The *Access to Cannabis for Medical Purposes Regulations* (ACMPR) is federal regulation under the *Controlled Drugs and Substances Act* that came into effect August 2016. These regulations allow for authorized individuals to possess cannabis for medical purposes and for others to possess cannabis for the sake of aiding the authorized individual to take the cannabis.

As of September 2017, a registered nurse and a nurse practitioner can administer and assist with the administration of cannabis for medical purposes in a 'hospital' as defined in the *Narcotic Control Regulations* provided all the requirements identified below are met:

- The individual is a hospital employee or an individual acting as the agent or mandatary of a hospital employee
- There is a prescription or written order or a cannabis medical authorization document signed and dated by a physician indicating the medical cannabis is to be administered to a particular person. A cannabis medical authorization document includes the following information: the client's name and date of birth, a period of

use of up to one (1) year and a daily quantity of dried cannabis to be used by the client in grams/day

- The medical cannabis is from a licensed producer
- The hospital has authorized the admission of medical cannabis in the facility
- There are policies in place to support the use of cannabis for medical purposes in the facility
- The medical cannabis is administered to a person under treatment as an inpatient or outpatient of a hospital where 'hospital' means a facility that is:
 - ◆ Licensed, approved or designated in accordance with the laws of Alberta to provide care or treatment to a person from any form of disease or illness, or
 - ◆ owned or operated by the Government of Canada or the Government of Alberta and that provides health services

The definition of hospital as defined in the *Narcotic Control Regulations* excludes home care.

RNs and NPs working with clients using cannabis for medical purposes should review resources such as Health Canada's information sheet *Information of Health Care Practitioners- Medical Use of Cannabis*.

Disposal and Transportation

Nurses safely dispose of medications according to the practice setting policy or return expired medications to the pharmacy for environmentally safe disposal. There are instances where a nurse may be involved in the transport of medications for disposal. Examples of such situations include a nurse returning unused medication to a pharmacy for proper disposal for a client, or a nurse carrying medication for administration during the transfer of a client (e.g. air ambulance). Practice setting policies should identify health professionals authorized to perform these activities and outline criteria for appropriate storage, safe handling and disposal of medication.

Guideline 34: Practice setting policies and procedures need to be in place to support those nurses whose role and responsibilities include medication transport and disposal.

Documentation

The documentation of medication administered to clients is an important aspect of the medication administration process.

The *Practice Standards for Regulated Members* (CARNA, 2013b) and *Documentation Standards for Regulated Members* (CARNA, 2013a), outlines that nurses are accountable for ensuring timely, accurate documentation of all medication they administer and related client care and outcomes of care. Nurses must also comply with relevant documentation requirements arising from legislation and practice setting policies.

Appropriate documentation related to medication administration should include:

- client name
- drug name
- drug dose and route
- date/time of actual administration
- signature of the nurse who administered the medication, including professional designation
- effectiveness of the medication

Guideline 35: Nurses document medication they have administered as soon as possible following the administration.

In emergency situations, such as a cardiac arrest, documentation may be by a designated recorder. There should be established procedures and documentation policies for emergency situations that support the designated recorder to document medication administration by others.

A nurse clearly documents when a client self-administers their own medication and the reason.

In settings where a point of care electronic health record system is implemented, care providers must log onto the system using their own name and personal password. There must be a process in place for identifying the full name and designation of the care provider who administers medication.

Guideline 36: The nurse documents in the client record additional pertinent information related to the process of administering medication (e.g. self-administration, client questions, client refusal of medication), related interventions (e.g. client education, communication with prescriber) and outcomes of care (e.g. therapeutic drug response, side effects).

Dispensing

Dispensing medication is a restricted activity defined in the *Government Organization Act* (2000). The authority for dispensing and selling medication lies with the pharmacist. However, nurses in Alberta are given the authority to dispense in some circumstances. This authorization provides flexibility to meet client needs when a pharmacist is unavailable.

Examples where this authority might be needed include, but are not limited to:

- partial doses of a medication or a full prescription in a small rural emergency department when a pharmacist is not available to do so
- dispensing medication for a client who is leaving a health-care facility on a pass for a limited time period when a pharmacist is not available to do so

The following questions need to be considered when examining potential dispensing by nurses when there is no pharmacist available:

- Is the medication necessary to meet the immediate needs of clients or vulnerable populations?
- Do the regulated members have the knowledge and skill to appropriately dispense the medication?
- Is there organizational policy to support the practice?

The Alberta College of Pharmacists' (ACP) *Standards of Practice for Pharmacists and Pharmacy Technicians* (2011) outlines standards for dispensing medication. These are available from their website at www.pharmacists.ab.ca. These Standards are to be followed in any setting where nurses will be dispensing medication. ACP or a pharmacist must be involved in establishing the infrastructure, policies and procedures in those specific situations where it is appropriate for nurses to dispense medication. This will

assist in ensuring the integrity of the drug distribution system, client safety and quality control.

When dispensing a medication, nurses need to ensure:

- the appropriateness of the medication for the client
- dispensing policies and procedures are established
- medications are dispensed in a child-proof container, except where inappropriate for the client
- correct labeling of the medication package by including:
 - ◆ client name
 - ◆ medication name, dosage and route
 - ◆ prescriber's name and designation
 - ◆ directions for use
 - ◆ quantity dispensed
 - ◆ date dispensed
 - ◆ nurses initials and the practice setting phone number
 - ◆ expiry date, when appropriate
- documentation of the dispensing in the client record including the name and dosage of the medication and the quantity dispensed
- client education
- appropriate storage of the medication to ensure security, integrity and stability

Guideline 37: Nurses are authorized to dispense medication in a particular practice setting:

- 1) when supported by practice setting policy
- 2) based on client need
- 3) when there is no pharmacist available
- 4) when following ACP's standard for dispensing

Sample Medication

Samples of medication are often provided by pharmaceutical companies free of charge to specific authorized health-care providers. *The Canada Food and Drug Act (1985)*, states that no person shall distribute or cause to be distributed any drug as a sample except to physicians, dental surgeons, veterinarian surgeons or pharmacists under prescribed conditions. Nurses and nurse practitioners are not authorized to accept medication samples from pharmaceutical companies.

Nurses need to be aware of the following risks associated with sample medication:

- Sample medications are often dispensed without clear instructions for use. Errors of all types have occurred when clients are unclear about the use of sample medication (ISMP, 2007a).
- Sample medication packaging may not contain adequate or clear information related to administration, safe storage, handling or disposal of the medication and often do not come in child proof containers.
- Extended storage of sample medications may lead to the distribution of expired drugs.
- Distribution of sample medications may bypass the client seeing the pharmacist. Therefore, drug interactions with other prescription and non-prescription medication may not be explored.
- Distribution of sample medications may bypass the recording of the medication on the Provincial electronic health record.
- Clients supplied with sample medications often do not receive the monitoring required to detect possible adverse effects.

Guideline 38: Nurses may dispense sample medication provided they:

- 1) have a medication order from an authorized prescriber
- 2) dispense in accordance with ACP's dispensing standard
- 3) are supported by practice setting policy

The *ISMP Medication Safety Alert* (2007b) with recommendations for safe handling of sample medication can be found at

https://ismp.org/newsletters/ambulatory/archives/200703_1.asp.

Administration of Medication by Others

Many health-care settings deliver care in collaborative teams. Well-functioning teams contribute to client safety and deliver quality care (Canadian Nurses Association, Canadian Physiotherapy Association, Canadian Home Care Association, et al, 2008). In many of these settings, nurses may have the responsibility to supervise others in the performance of medication administration. Effective communication and clear roles within the interdisciplinary team will contribute to the functioning of the team and the expectations of accountability.

Administration of Medication by Health-Care Aides

The joint document *Decision-Making Standards for Nurses in the Supervision of Health Care Aides* (College and Association of Registered Nurses of Alberta, College of Licensed Practical Nurses of Alberta, & College of Registered Psychiatric Nurses of Alberta, 2010) provides direction for nurses who work in settings where health-care aides (HCA) are employed. The HCA's responsibility may be to:

- assist the client with taking their medication
- remind or prompt the clients to take their medication
- assist in opening medication containers
- ensure that the medication is taken at the appropriate time

The HCA is responsible to report to the nurse if they have any concerns related to the clients care.

It is not appropriate for the HCA to assess the client and then administer prn medication as the knowledge, skill and judgment of a nurse is required in the assessment and evaluation of the administration of a prn medication. The nurse is responsible for the overall assessment and monitoring of the client, the supervision of the HCA, and the assessment, administration and evaluation involved with any prn medication.

A formalized medication delivery system needs to be in place if HCAs assist with medication administration. The HCA's role must be outlined clearly in practice setting policy to further guide staff to maintain quality and safety in practice.

Administration of Medication by Nursing Students

When nursing students are involved in client care, they practice under the supervision of a faculty member and nurse (or other regulated health-care professional). The nurse maintains the responsibility and accountability for the overall plan of care for the client. Nursing students are responsible for functioning within their level of competence, recognizing their limitations and for seeking consultation or direction when needed.

The *Standards for Supervision of Nursing Students and Undergraduate Nursing Employees Providing Client Care* (CARNA, 2005) provides direction for nurses who practise with student nurses.

Guideline 39: In instances where medication administration is assigned to others, the nurse is accountable for appropriately assigning the intervention according to supervision standards, determining the level of supervision required, assessing the process of delivery of the medication and assessing the outcomes of the intervention on the client's health status.

Medication Safety

Quality professional practice environments are required to support safe and effective medication management. Nurses and health-care agencies must work collaboratively to identify system and individual risk factors, initiate proactive measures to decrease error situations, report all errors and near misses, and intervene to minimize the potential for client health to be compromised as a result of medication errors.

Nurses play a significant role in intercepting potential medication errors as they are the care providers who are most often involved in the administration of medication to clients. Nurses are also ideally positioned to play a critical role in minimizing medication errors at client care transition points by implementing strategies such as medication reconciliation processes.

The client is an important resource for reducing the incidence of medication errors as well. The client can and should be supported to question why they are receiving a medication, verify that it is the appropriate medication, dose, and route, and alert the health professional involved in prescribing, dispensing, or administering a medication to potential problems such as allergies or past drug interactions.

Nurses have a specialized body of knowledge and are uniquely positioned to take leadership roles in safety initiatives, research, policy development, and in the design and implementation of new medication systems. See Appendix 2 for examples of medication systems. Nurses should be consulted to assist in identifying and addressing system problems.

Guideline 40: Nurses have a responsibility to report medication errors and near misses according to practice setting policy.

Strategies to Reduce Medication Errors

Ensuring a quality practice environment will also serve to reduce medication errors. Examples of strategies for nurses and organizational strategies for supporting quality medication practice include:

- performing medication reconciliation at transitions of care
- creating a health-care culture of safety
- reporting all medication errors or near misses
- ensuring adequate staff mix levels for the client population
- offering 24-hour access to current nursing specific drug resources and medication administration resources (e.g. Compendium of Pharmaceuticals and Specialties)
- utilizing parenteral drug libraries on smart pumps

- providing continuing education opportunities for nurses to further develop their competency related to medication systems and pharmacology
- involving pharmacists in the medication process, including being available for consultation with prescribers on medication ordering, interpretation and review of medication orders, preparation of medication, dispensing of medication, and monitoring of medication
- implementing a computerized prescriber order entry system, enhanced by the prescriber entering their own orders
- standardizing the methods for labeling, packaging and storing medication
- dispensing medication in unit-dose form, whenever possible
- implementing scheduled maintenance processes for equipment used in the administration of medication (e.g. IV pumps)
- providing appropriate environment for nurses to prepare medication
- providing uninterrupted time for nurses to administer medication
- keeping workspaces where medication are prepared clean, orderly, well lit, and free of interruptions
- implementing strategies to reduce distractions and noise during medication administration processes

Did you know?

Medication errors can occur when nurses become distracted or lose focus during medication administration (Potter et. al., 2014). In today's busy health-care environment, multiple interruptions can be experienced. Systems and measures need to be put in place to minimize distractions and disruptions during the medication administration process. Nurses need to investigate strategies that will decrease distractions and enhance their ability to follow nursing procedures during medication administration. Pape et al. (2008) found that using a safety checklist, avoiding extraneous conversations and using "do not disturb" signs reduced medication errors.

Glossary

Capable – Is defined as being able to understand and appreciate the consequence of various options and make informed decision about one's own care and treatment (CNA, 2008).

Client – The term client(s) refers to the individual, group, community or population, who is the recipient of nursing services and, where the context requires, includes a substitute decision-maker for the recipient of nursing services.

Emergent/Urgent Situations – Are circumstances that call for immediate action or attention such that a delay in treatment would place an individual at risk of serious harm.

Evidence-Informed – Refers to the ongoing process that incorporates evidence from research, clinical expertise, client preferences and other available resources (CNA, 2010).

Guidelines – Guidelines are suggestions for members, for enhanced or best practices. Guidelines are statements that identify principles, give instructions, information or direction, clarify roles and responsibilities, and/or provide a framework for decision-making.

High-Alert Medication – High-alert medications are drugs that bear a heightened risk of causing significant client harm when they are used in error.

Transitions of Care – Occur when clients are being admitted, discharged or transferred to or from home, another facility/practice setting or another care provider.

Nurse – The term nurse(s) refers to all regulated members of the College and Association of Registered Nurses of Alberta including: registered nurses, graduate nurses, certified graduate nurses, nurse practitioners and graduate nurse practitioners..

Pre-Pouring – The term pre-pouring is defined as preparing medications in advance and then storing them until you or others need them.

Standing Order – Directions for medication administration that apply to a group or population; not a specific client.

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**Appendix 1: Ensuring Safe and Efficient
Communication of Medication Prescriptions in
Community and Ambulatory Settings**

**Ensuring Safe & Efficient
Communication of
Medication Prescriptions**

in Community and Ambulatory Settings

(September 2007)

Joint publication of the:

**Alberta College of Pharmacists (ACP)
College and Association of Registered Nurses of Alberta (CARNA)
College of Physicians and Surgeons of Alberta (CPSA)**

Guiding Principles for Ensuring Safe and Efficient Communication of Medication Prescriptions in Community and Ambulatory Settings

Preamble:

Medication errors are a major source of potential harm to patients. Current literature on medication safety highlights two potentially error prone practices:

- 1) The use of *verbal prescriptions*; and
- 2) The communication of prescriptions to a pharmacist through an *intermediary*.

(Source: Lesar, 2003 Nov.; Koczmara, Jelincic & Perri, 2006).

The use of verbal prescriptions (spoken aloud in person or by telephone) introduces a number of variables that can increase the risk of error. These variables include:

- Potential for misinterpretation of orders because of accent or pronunciation;
- Sound alike drug names;
- Background noise;
- Unfamiliar terminology; and
- Patients having the same or similar names.

Some medication dosages are also more prone to error. For example, numbers in the teens such as 15 and 16 may be heard and transcribed as 50 and 60. Once received, a verbal prescription must be reduced to writing which adds further complexity and risk to the prescribing process. No one except the prescriber can verify the accuracy of a verbal order against what was intended, and identification of an error in a verbal prescription by a prescriber relies on their memory of what was spoken.

Medication safety literature recognizes that the more direct the communication between a prescriber and a pharmacist, the lower the risk of error. The introduction of intermediaries into the prescribing process has been identified as a prominent source of medication error. Communicating a prescription by telephone through an intermediary:

- Blurs accountability;
- Further increases the risk of miscommunication;
- Reduces the effectiveness of the prescription confirmation process; and
- Lessens the likelihood that effective communication occurs if questions arise about a prescription.

(Source: Lesar, 2003, Nov.)

Medication safety literature also recognizes that the patient represents an untapped resource for reducing the incidence of medication errors. Patients can and should be supported to question why they are receiving a medication, verify that it is the appropriate medication, dose, and route, and alert the health professional involved in prescribing, dispensing, or administering a medication to potential problems such as allergies or past drug-drug interactions.

(Source: CARNA, 2005)

The *Food and Drugs Act* (R.S., 1985) provides the following key definitions:

“Prescription” means an order given by a practitioner directing that a stated amount of any drug or mixture of drugs specified therein be dispensed for the person named in the order.

“Practitioner” means a person authorized by the law of a province of Canada to treat patients with any drug listed or described in SCHEDULE F to the Regulations.

This information is available online at: <http://laws.justice.gc.ca/en/F-27/C.R.C.-c.870/237615.html#rid-237621>.

There is significant legal risk associated with the use of intermediaries because current legislation does not support or is silent on the role of intermediaries in the communication of medication prescriptions. Given this level of risk, we recommend that health professionals involved in the communication of medication prescriptions in community and ambulatory settings apply the core principles outlined in this document.¹

The Alberta College of Pharmacists (ACP), the College and Association of Registered Nurses of Alberta (CARNA) and the College of Physicians and Surgeons of Alberta (CPSA) developed these core principles to support the delivery of safe, efficient and timely care to Albertans. The principles provide guidance to health professionals involved in the prescribing and management of medication prescriptions in community and ambulatory practice settings.

As this document was written during the transition to new legislation and to new technology such as e-prescribing, the ACP, CARNA and CPSA are committed to updating these principles on a regular basis, incorporating new practices and standards as they evolve.

¹ **Note:** The core principles outlined in this document can contribute to best practices for verbal communication of prescriptions to health providers in hospitals and other in-patient facilities. However, adherence to the specific policies of those institutions is essential.

In endorsing these principles, these organizations also acknowledge that some period of transition and redesign of processes may be required. Practitioners are encouraged to work collaboratively in addressing needed changes and to consult with their professional colleges for advice as required.

Core Principles for Safe Communication of Medication Prescriptions in Community and Ambulatory Settings:

1. To minimize the risk of error, medication prescriptions must be issued clearly and completely. (See Appendix A)
2. Health professionals involved in the management of medication prescriptions have a responsibility to question any medication prescription issued by another health professional if they believe that it may not be safe or may otherwise not be in the patient's best interest.
3. In-hand delivery of a written prescription to the pharmacist by the patient/guardian is preferred over a verbal prescription order.
4. The faxed communication of a medication prescription from the prescriber's office to the pharmacist is preferred over a verbal prescription order when in-hand delivery of a written prescription by the patient/guardian is not possible. (See Appendix B)
5. Verbal communication of prescriptions must be limited to situations where immediate written or faxed communication is not feasible.
6. If necessary, verbal prescriptions communicated by telephone to a pharmacy are best conveyed by direct communication between the authorized prescriber and the pharmacist.
7. The accuracy of a verbal prescription should be confirmed using strategies such as a 'read back' of the prescription and/or a review of the indication for the medication. (See Appendix C)

8. The use of an intermediary to communicate verbal prescriptions between a prescriber and a pharmacist must be a last resort.² Patient safety and well-being is of utmost importance in making a decision to use an intermediary. When filling a medication prescription on an urgent basis, the benefit to the patient must be weighed along with the recognition of the legal risk incurred by the intermediary and the prescriber. If a decision to use an intermediary is made, the use of the intermediary must be done according to the guidelines outlined below:
- a) Communication of verbal prescriptions through intermediaries does not diminish the prescriber's responsibility for accuracy and appropriateness of prescribing or the responsibility to be available if the pharmacist requires direct communication with the prescriber.
 - b) New prescriptions may be transmitted to a pharmacist through an intermediary only:
 - i) In unusual or urgent situations.³
 - ii) By a regulated health professional intermediary who speaks directly with a pharmacist. Under no circumstances may two intermediaries be used.
 - c) A prescriber's authorization to refill an existing prescription may be transmitted through an intermediary only:
 - i) Following approval and documentation by the prescriber.
 - ii) If there are no changes to the prescription
 - d) Communication via an intermediary should include the indication for which the medication is being prescribed as well as the name and credential of the intermediary.
 - e) Intermediaries must not communicate verbal prescriptions for narcotics or controlled drugs, including benzodiazepines and other Targeted Substances as defined in the *Controlled Drugs and Substances Act* and its Regulations.
(<http://laws.justice.gc.ca/en/C-38.8/>)

² **Note:** For the purpose of these principles, *intermediary* refers to any individual "third party" or "agent" who communicates a medication prescription on behalf of a prescriber to a pharmacist. Intermediaries also refer to electronic devices such as voice messaging systems and telephone answering devices used to receive medication prescriptions.

³ **Note:** Unusual situations are circumstances that are not typical or that are out of the ordinary. Urgent/Emergent situations are circumstances that call for immediate action or attention

- f) A new prescription that is communicated verbally to a pharmacist through an intermediary must be confirmed as soon as possible through direct communication between the prescriber and the pharmacist or via fax. Recommended time is within 24 hours.
9. A prescription that is communicated verbally must be documented by the prescriber issuing the order and the person receiving the order as per their professions' standards of practice.

Appendix A
Determining currency, authenticity and completeness of prescriptions

HPA Standards for Pharmacist Practice	
<p>STANDARD 5 Pharmacist's duties before dispensing a drug</p> <p>5. A pharmacist must not dispense a drug or blood product under a prescription unless the pharmacist has determined that the prescription is current, authentic, complete and appropriate.</p> <p>APPLICATION OF STANDARD 5 Determining the currency of a prescription</p> <p>5.1 A pharmacist must review the prescription to determine when it was written.</p> <p>5.2 A pharmacist must not dispense a drug or blood product under a prescription that was issued more than one year before the date the drug or blood product is to be dispensed.</p> <p>5.3 A pharmacist must not refill a prescription for</p> <ul style="list-style-type: none"> (a) a benzodiazepine or other targeted substance, as defined in the regulations to the <i>Controlled Drugs and Substances Act</i>, for a period greater than 12 months, or (b) a schedule 1 drug for a period greater than 18 months after the prescription was first filled. <p>Determining the authenticity of a prescription</p> <p>5.4 A pharmacist must determine the authenticity of a prescription by taking reasonable steps to:</p> <ul style="list-style-type: none"> (a) identify the prescriber, (b) determine whether the prescriber is legally authorized to prescribe the drug or blood product for which the prescription has been given, and (c) assess whether the prescription has been altered, forged or stolen. <p>Determining the completeness of a prescription</p> <p>5.5 A pharmacist must determine the completeness of a prescription by ensuring that the prescription includes:</p> <ul style="list-style-type: none"> (a) name and address of the patient; (b) drug or blood product name; (c) drug strength, if applicable; (d) dosage form, if applicable; (e) route of administration, if applicable; (f) quantity of drug or blood product to be dispensed; (g) directions for use; (h) number of refills authorized and interval between each refill, if applicable; 	<ul style="list-style-type: none"> (i) prescriber's name and phone number; (j) prescriber's signature, in the case of a written prescription; and (k) the date of the prescription. <p>Factors to be considered in determining the appropriateness of a prescription</p> <p>5.6 A pharmacist must determine the appropriateness of a prescription for the condition being treated by considering relevant factors that a reasonable pharmacist would consider in the circumstances including, but not limited to, whether:</p> <ul style="list-style-type: none"> (a) the prescription is accurate; (b) the prescription orders a drug or blood product for an indication that is: <ul style="list-style-type: none"> (i) approved by Health Canada, (ii) considered a best practice or accepted clinical practice in peer-reviewed literature; or (iii) part of an approved research protocol; (c) the dose, frequency and route of administration are appropriate; (d) there is therapeutic duplication; (e) there are actual or potential adverse reactions, allergies or sensitivities; (f) there are actual or potential drug interactions; (g) the regimen for administration is practical, based on the patient's functional ability; (h) the patient's organ function, such as renal and hepatic function, will tolerate the drug or blood product; (i) the results of laboratory or other tests, if applicable, support that prescription; and (j) other patient-specific characteristics such as age; pregnancy or lactation status; cognitive, mental and physical challenges; lifestyle; cultural beliefs or living environment may negatively affect the appropriateness of the drug or blood product. <p>Verbal order to be reduced to writing</p> <p>5.7 If a pharmacist receives a verbal order for a drug or blood product from a prescriber, the pharmacist must reduce the prescription to writing and initial the prescription.</p>

(Source: ACP Standards for Pharmacist Practice, 2007)

Appendix B

Guideline for facsimile (Fax) transmission of prescriptions – July 2007

Introduction:

Facsimile transmission (faxed) means transmission of the exact visual image of a document by way of electronic equipment.

Faxed prescriptions may be accepted as equivalent to a written prescription. The prescriber and the dispenser must ensure that the process of faxing provides for patient confidentiality, authenticity, validity and security of the prescription; and that the patient is free to use the pharmacy of their choice.

Faxed prescriptions are permitted for all classes of drugs, including triplicate prescription medications provided the following requirements are met:

Prescriber Responsibilities:

1. The prescription must be sent to only one pharmacy.
2. The prescription must be sent directly from the prescriber using a secure, confidential, reliable and verifiable fax machine with no intervening person having access to the prescription drug order.
3. The prescriber must only send the prescription to a licensed or publicly funded pharmacy.
4. The prescription must include the following legal requirements of a complete prescription:
 - Date of issue.
 - Name and address of the patient.
 - Name of drug or ingredient(s) and strength, if applicable.
 - Dosage form, if applicable.
 - Quantity of drug to be dispensed.
 - Route of administration, if applicable.
 - Directions for use.
 - Number of refills authorized and interval between each refill, if applicable.

- Prescriber's name and phone number.
 - Prescriber's signature.
5. In addition to the legal requirements of a prescription, the transmission must also include the following:
- The prescriber's address, fax number and phone number.
 - The time and date of the fax transmission.
 - The name and fax number of the pharmacy intended to receive the transmission.
 - The signature of the sender verifying that:
 - i) The prescription represents the original of the prescription drug order;
 - ii) The addressee is the only intended recipient and there are not others; and
 - iii) The original prescription will be invalidated, securely filed and not transmitted elsewhere at another time.
6. For triplicate prescription medications, the prescriber should fax the top copy of the TPP prescription so that the TPP prescription's unique number and the prescriber's TPP registration number are included with the transmission.
7. After successful transmission, the original written prescription must be invalidated and retained with the patient record.
8. A sample form is provided. (See Appendix B-1)

Receiving Pharmacist's Responsibilities:

1. The equipment for receipt of the faxed prescription must be located within a secure area to protect the confidentiality of the prescription information.
2. The origin of the transmission and the legitimacy and authenticity of the prescription must be verified.
 - Faxes can be accepted from a practitioner registered to practice in any Canadian province or territory.

3. The prescription drug order must be maintained on permanent quality paper by the pharmacy and retained as required in the *Standards for Pharmacist Practice (2007)*.

Appendix B-1

Model form for initiating medication orders and renewals

PRESCRIBER'S LETTERHEAD

Prescriber Name/ Clinic Name

Prescriber address

Prescriber telephone number

Prescriber fax number

Confidential fax transmission to:

Pharmacy Name: _____

Fax Number: _____

Date: _____ **Time:** _____

Patient Given Name and Surname: _____

Patient address: _____

Rx #1

Refill _____ **times every** _____ **day**

Rx #2

Refill _____ **times every** _____ **day**

Prescriber Certification

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

Practitioner / Prescriber Name (print name) _____ Registration # _____

Practitioner / Prescriber Signature _____ Date _____

Appendix C

Appendix C

Additional Resources and Information

Verbal prescribing should be a choice of last resort. A prescriber issuing a verbal medication prescription by telephone should communicate the prescription only to qualified professionals who have knowledge of pharmacology. Communicating about medication prescriptions with other health professionals, clerical staff and unregulated care providers who do not have knowledge of pharmacology is inappropriate because the risk of error increases when the individual accepting a medication prescription does not know the medication and its action.

Safety recommendations for practitioners receiving verbal medication prescriptions by telephone include:

- Ensure telephone orders are complete (e.g. patient name, medication, dose, time(s)/frequency, and route).
- Reduce the order to writing.
- Read back all telephone orders.
- Read back should include:
 - spelling of the drug name;
 - spelling of patient/client name; and
 - dose confirmation expressed as a single digit.
- Verify indication for medication(s) ordered. Ask questions as needed.
- Consider review by a second practitioner before initiating an order.
- Call prescriber if any questions or concerns arise.

Safety recommendations for prescribers issuing medication prescriptions by telephone include:

- The caller should introduce themselves indicating their name, credentials, and if they are a prescriber's agent, identify who they are calling on behalf of. Identification can be further clarified by providing a return telephone number at which the prescriber can be contacted and the prescriber's business address.
- When calling in a telephone order, confirm patient identity.
- Spell the name of the medication(s).

- Consider providing both generic and trade names of the medication for clarity.
- Avoid truncating, using abbreviations, short forms or acronyms for drug names to avoid confusion.
- Avoid confusion with spoken numbers by restating the dosage in single digits. If a dose range is ordered, include this in the verification.
- Provide complete dosage and route for all medications ordered and comply with formulary guidelines.
- Avoid abbreviations for the dose frequency.
- Provide the indication for medication(s) ordered.
- Obtain a read back of the entire telephone order.
- Ensure the order is clear and understandable to the person receiving the telephone order.
- Provide identity confirmation when communicating with a retail pharmacist in the community.

(Adapted from: Koczmar, Jelincic, & Perri, 2006)

Minimizing Fax Transmission Errors:

Fax transmission errors can be minimized by:

Administrative procedures:

- Double-check the recipient's fax number before transmission.
- Use a pre-printed confidentiality statement on all fax cover sheets.
- Review faxed prescriptions for *fax noise* (refers to random marks and streaks that can appear on faxes).

Physical safeguards and technical security mechanisms:

- Place fax machines in areas that require security keys, badges or similar mechanisms in order to gain access.
- Periodically remind regular fax recipients to communicate changes in their fax number.

Technical security services

- Ensure storage and regular review of fax transmittal summaries and confirmation sheets.
- Pre-program and verify frequently used destination numbers in order to minimize the potential for human error.

- Ensure regular maintenance is scheduled for fax machines.

OIPC Guidelines on Facsimile Transmission:

The Office of the Information and Privacy Commissioner of Alberta provides *Guidelines on Facsimile Transmission* which set out guidelines for public bodies and custodians to use when developing systems and procedures to maintain the confidentiality and integrity of personal information received and transmitted by fax. These guidelines are available at: http://www.oipc.ab.ca/ims/client/upload/Guidelines_on_Facsimile_Transmission.pdf.

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Transfer of Authority to Fill Prescriptions by Facsimile Transmission Model Policy, National Association of Pharmacy Regulatory Authorities (NAPRA) Approved 1997, revised 2001

Appendix 2: Medication Systems

Systems for storing and distributing medications vary.

Stock Supply System: Medications are available in quantity, in large, multidose containers. The nurse selects the appropriate medication and dosage from the medication containers stored on the unit. The nurse would then place the appropriate medication in a container labeled with the client's name and the name of the medication. This type of medication delivery has been associated with a high rate of medication errors (Potter et. al., 2014).

Unit-Dose System: Uses portable carts containing a drawer with a 24-hour supply of medications for each client. The pharmacist individually packages and labels each medication. The cart also contains a limited amount of prn medications. Controlled drugs and substances (CD&S) are not kept on the cart. The nurse then selects the appropriate medication and dosage package for the client from the labeled drawer. Pouring the medication from the package occurs simultaneously with administering the medication to the client. The unit-dose system is designed to reduce the number of medication errors and to save steps during the medication administration process (Potter et. al., 2014).

Automated Dispensing System (i.e. Pyxis): These systems use computerized controls to dispense CD&S and unit-dose medications. The nurse accesses the system by entering a personal password, the client's identification number or barcode and the chosen medication. The system opens the drawer containing the medication and records the transaction. Pouring the medication from the package occurs simultaneously with administering the medication to the client.

Multidose System or Blister Pack: The pharmacist dispenses all of the client's medication for a particular dosage time (i.e. 0800 hrs) or time period (i.e. one week) in a sealed package or container. Multidose systems are generally used in community and long-term care settings.

Each multidose package must provide the following information:

- client name
- prescriber name
- medication name and strength for each medication in the package as identified in the prescription and the MAR

- administration time

Medications that could be potentially withheld should not be included in the multidose package and should be packaged separately. Nurses should be able to quickly and correctly identify a specific medication in a multidose package.

Appendix 3: Development of a Protocol

A protocol addresses the identified health-care needs of clients in a specific practice setting. The development of a protocol, including the determination of competency requirements, should be developed in collaboration with members of the health team who will use the protocol.

Protocols are developed by an interprofessional team and must be:

- developed collaboratively
- evidence-informed
- in accordance with federal and provincial legislation and regulation
- approved by the organization
- supported by the specific practice setting policy
- appropriate for the scope of practice of the health-care professional performing the interventions within the protocol
- based on client health needs
- appropriate for the particular practice setting (such as the availability of essential technical and human resources)
- reviewed, evaluated and revised, if needed, on a regular basis

A protocol must include:

- the name of the specific protocol and identification of the practice setting (specific units or services) in which the protocol may be implemented
- a description of the intervention(s) included in that protocol
- identification of any contraindications or exclusions to implementing the protocol
- clear, specific clinical conditions that must be met before the interventions can be implemented for that client
- identification of the competencies, educational requirements and/or health-care professionals that can implement the protocol
- the relevant assessment data to be collected and used in decision-making when implementing the protocol

- monitoring parameters
- the required communication to the most responsible health-care practitioner
- documentation required for the nurse implementing the protocol
- the name, date and signature of the nursing and medical administration that has formally established and endorsed the protocol in the organization
- the date to be reviewed