



Medication Guidelines

January 2014

Approved by the College and Association of Registered Nurses of Alberta Provincial Council, January 2014.

Permission to reproduce this document is granted. Please recognize CARNA.

College and Association of Registered Nurses of Alberta
11620 – 168 Street
Edmonton, AB T5M 4A6

Phone: (780) 451-0043 (in Edmonton) or 1-800-252-9392 (Canada-wide)

Fax: (780) 452-3276

E-mail: carna@nurses.ab.ca

Website: www.nurses.ab.ca

TABLE OF CONTENTS

| | |
|---|----|
| PURPOSE | 1 |
| MEDICATION MANAGEMENT | 1 |
| <i>The Seven Rights of Medication Administration</i> | 2 |
| MEDICATION RECONCILIATION | 3 |
| MEDICATION ORDERS | 4 |
| <i>What is a Schedule 1 Medication?</i> | 4 |
| <i>Components of a Medication Order</i> | 4 |
| <i>Abbreviations</i> | 5 |
| <i>Verbal and Telephone Orders</i> | 5 |
| <i>Intermediaries</i> | 6 |
| <i>Pre-Printed Orders</i> | 6 |
| <i>Protocols that include Medication Orders</i> | 7 |
| <i>Standing Orders</i> | 8 |
| COMMUNICATION OF MEDICATION ORDERS | 8 |
| TRANSCRIBING | 9 |
| ADMINISTERING MEDICATION | 9 |
| <i>Infection Prevention and Control</i> | 10 |
| <i>Medication Preparation</i> | 10 |
| <i>Compounding Medication</i> | 11 |
| <i>Administration Times</i> | 12 |
| <i>Client Consent</i> | 12 |
| <i>Independent Double Checks</i> | 13 |
| <i>Two Client Identifiers</i> | 13 |
| <i>Range Doses</i> | 14 |
| <i>Allergy Testing and Desensitizing Injections</i> | 15 |
| <i>Investigational and Special Access Program Medication</i> | 15 |
| <i>Placebos</i> | 15 |
| <i>Immunizations</i> | 16 |
| <i>Over the Counter (OTC) Medication</i> | 17 |
| <i>Clients' Own Medication</i> | 18 |
| SELF-ADMINISTRATION OF MEDICATION | 19 |
| MANAGEMENT OF CONTROLLED DRUGS AND SUBSTANCES | 19 |
| <i>Management of Marihuana for Medical Purposes</i> | 19 |
| DISPOSAL AND TRANSPORTATION | 20 |
| DOCUMENTATION | 20 |
| DISPENSING | 21 |
| SAMPLE MEDICATION | 23 |
| ADMINISTRATION OF MEDICATION BY OTHERS | 24 |
| <i>Administration of Medication by Health-Care Aides</i> | 24 |
| <i>Administration of Medication by Nursing Students</i> | 24 |
| MEDICATION SAFETY | 25 |
| <i>Strategies to Reduce Medication Errors</i> | 25 |
| REFERENCES | 27 |
| APPENDIX 1: ENSURING SAFE AND EFFICIENT COMMUNICATION OF MEDICATION PRESCRIPTIONS IN COMMUNITY AND AMBULATORY SETTINGS | 31 |
| APPENDIX 2: MEDICATION SYSTEMS | 43 |

PURPOSE

Nurses¹ play an essential role in medication reconciliation, preparing and administering medication, teaching clients² about medication, monitoring, evaluating and documenting the response to medication (Potter, et. al., 2014). The purpose of this document is to provide guidelines to address various components of safe and effective medication management in the practice setting.

This document contains thirty eight guidelines. The guidelines are included within the applicable section, are bolded and are placed within a text box.

The guidelines are specific to medication practices and are grounded on the foundational document *Practice Standards for Regulated Members* (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* (2011)
- *Health Professions Act: Standards for Registered Nurses in the Performance of Restricted Activities* (2005a)
- *Standards for the Supervision of Care Provided by Nursing Students and Undergraduate Nursing Employees* (2005b)
- *Decision-Making Standards for Nurses in the Supervision of Health Care Aides* (2010)

MEDICATION MANAGEMENT

Safe, competent and ethical medication management is more than performing the technical task of giving the medication. It requires nursing knowledge, skill and judgment. Safe and effective medication practices are a result of the efforts of many individuals and reliable systems (ISMP, 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
- access to information on allergies and sensitivities

¹ 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.

² 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.

- participating in the medication reconciliation process at patient care transition points
- knowledge of the actions, interactions, usual dose, route, side effects and adverse effects of the drug
- calculating the dosage 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 using the seven rights of medication administration.

MEDICATION RECONCILIATION

Communicating effectively about medication is a critical component of safe medication delivery (Accreditation Canada et al, 2012). 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 medication list
- using the medication list during admission, transfer and/or discharge to create orders or compare orders to what the client should be taking
- identifying any discrepancies and bringing them to the attention of the authorized prescriber
- 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. Nurses complete the BPMH in collaboration with the pharmacist and an authorized prescriber.

Guideline 2: Nurses participate in the medication reconciliation process.

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

www.ismp-canada.org

www.saferhealthcarenow.ca

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. In general, medication orders are required for **any type** of medication.

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.

Registered nurses, graduate nurses and certified graduate nurses are not authorized to prescribe Schedule 1 medication. However, nurse practitioners and graduate nurse practitioners are authorized to prescribe a Schedule 1 drug³.

Guideline 3: Nurses only accept medication orders or prescriptions from authorized prescribers.

Information on a prescriber's authority is available from the prescriber's regulatory college.

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

³ *Registered Nurses Profession Regulation (2005) 15(4)(a)*

Abbreviations

The use of abbreviations in the medication process can be misinterpreted and has been involved in harmful medication errors (ISMP, 2013c). Please see ISMP's list of error-prone abbreviations, symbols and dose designations on their website: <http://www.ismp.org>. Nurses only use practice setting approved abbreviations and symbols.

Verbal and Telephone Orders

Verbal and telephone orders are more error prone because of communication errors when compared to orders that are written or communicated in a secure electronic health record system (Potter et. al., 2014). The expectation is that authorized prescribers will write or enter into a point of care electronic health record their own medication orders whenever possible.

Verbal or telephone orders should be limited to emergent or urgent situations that call for immediate action or attention such that a delay in treatment would place an individual at risk of serious harm. 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 if a prescriber was to interrupt client care and write the medication order; 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 (i.e. community settings, ambulatory care), faxed medication orders are considered preferable to telephone orders.

Guideline 4: Nurses accept verbal and telephone orders only in emergent or urgent situations⁴ 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. 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. The exception to the authorized prescriber authorizing or signing all of their verbal orders would be in an emergent or urgent situation where there is a designated recorder.

When documenting a verbal or telephone medication order, the nurse is responsible for the following:

- Clearly identifying the client (e.g. full name, date of birth and diagnosis).

⁴ 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

- Assessing the appropriateness of a medication for a client.
- Confirming the identity of the prescriber 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 ⁵

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 is problematic because it:

- 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

Guideline 5: Nurses are not authorized to phone in medication prescription to a pharmacy on behalf of an authorized prescriber.

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* provides guidance and direction to nurses about their responsibility and the potential legal and professional implications if acting as an intermediary to communicate medication prescriptions.

Pre-Printed Orders

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

⁵ Individuals who phone in medication prescriptions to a pharmacy on behalf of an authorized prescriber are intermediaries.

Guideline 6: Nurses only implement pre-printed orders that are client specific and are signed by the authorized prescriber.

Protocols that include Medication Orders

Protocols are a set of orders or series of interventions to be implemented by another care provider (i.e. nurse) for a range of clients with identified health conditions and **only** when specific circumstances and criteria exist (CRNNS, 2011b). Protocols need to be written and should be reviewed on a regular basis to ensure that they continue to reflect best practice.

The development of protocols must be developed by an interprofessional team and must be:

- collaborative
- evidence-informed⁶
- in accordance with federal and Alberta legislation and regulation
- approved by the nursing and medical authority within the organization
- supported by the practice setting and nursing policy
- enacted within the nurses scope of practice

The nurse who carries out interventions based on a protocol is responsible for documenting all aspects of the care provided including relevant assessments, medication administered, monitoring and timely communication to the health care provider responsible for care.

Guideline 7: Nurses must perform an assessment and determine if a specific client meets the criteria outlined in the protocol.

When the nurse has determined that a specific client meets the criteria outlined in a protocol, the nurse must identify if the protocol involves the administration of a Schedule 1 medication that requires an order. If the protocol involves the administration of a prescribed medication the nurse must contact the authorized prescriber for a client specific order. This authorization often occurs simultaneously as the nurse implements the other activities within the protocol that are not related to the medication.

Guideline 8: Nurses must have a client specific order from an authorized prescriber to administer a Schedule 1 medication within a protocol.

⁶ Evidence-informed decisions refer to the ongoing process that incorporates evidence from research, clinical expertise, client preferences and other available resources (CNA, 2010).

For protocols that include over the counter (OTC) medications, please refer to the OTC medication section.

Standing Orders

Standing orders should not be used as they are not client specific, do not specifically identify the conditions and circumstances that must be present before being implemented, and are not best practice.

COMMUNICATION OF MEDICATION ORDERS

Physicians, pharmacists, nurse practitioners, and other regulated health professionals who are authorized prescribers, provide orders for Schedule 1 medications.

Physician assistants are a new category of health care provider introduced in Alberta. They are unregulated workers who work under the supervision of physicians, and provide direct client care. Any medication order from physician assistants must be authorized by the supervising physician **before** it is carried out by nurses. It is the responsibility of the physician assistant to ensure that the order is signed by the supervising physician in a timely manner.

Guideline 9: Nurses do not accept medication orders from physician assistants that have not been authorized by the supervising physician.

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.

Guideline 10: Nurses question and clarify orders that are inconsistent with therapeutic outcomes, best practices, and safety standards prior to administration of the medication

Some medications may be prescribed for alternative indications (i.e. off-label use) or be part of a research study. The nurse should review all available information including drug resources and/or product monographs, available research and relevant practice setting policies. Consultation with a pharmacist can also provide support and expert opinion.

Guideline 11: Nurses should only administer medications that are:
a) approved by Health Canada, b) considered best practice or accepted clinical practice in peer reviewed clinical literature or c) part of an approved research study.

TRANSCRIBING

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

Transcribing medication orders is an entry level skill for nurses and is part of the process of administering medication.

Guideline 12: When transcribing medication orders, nurses apply professional judgment in deciding on 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.

Guideline 13: Nurses are accountable for validating the accuracy and completeness of the transcription of the order before administering the medication to the client.

Electronic medication order entry systems are being implemented in practice settings. These systems allow prescribers to enter medication orders directly into the point of care 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 misunderstandings resulting from verbal and telephone orders are decreased.

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

ADMINISTERING MEDICATION

The administration of medication is a cognitive and interactive aspect of nursing care and is more than just the psychomotor task of administering a medication to a client. It involves client assessment, making clinical decisions and planning care based on this assessment. Medication administration is performed in collaboration with the client and family. Best practices for administering medication applies to prescription and 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* (CARNA, 2011).

Infection Prevention and Control

Infection control practices and the prevention of disease transmission with medication administration are essential for client safety. Nurses involved in medication administration must be knowledgeable and competent in infection prevention, effective hand hygiene, safe injection practices and the use of aseptic techniques (ISMP, 2010) including the following:

- Hand washing between client contacts during medication administration.
- Maintaining aseptic technique during preparation and administration of parenteral medication.
- Properly using single-use medical devices (syringes, needles and infusion supplies) – one needle, one syringe, only one 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 one client only.
- Using single-dose vials and pre-filled syringes whenever possible.
- Properly disposing of medication, syringes, needles and infusion supplies.

Guideline 14: The nurse integrates infection prevention and control principles, standards and guidelines in the medication management process.

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

Medication Preparation

The preparation of medication is an important aspect of the medication administration process. Preparation can include selecting, calculating, mixing, labelling, drawing up, pouring, etc. Medication needs to be prepared as close as possible to the administration time. Medication should be kept labeled until administration (Kliger et al, 2009). It is also 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 15: The same nurse prepares and then administers the client's medications.

There may be situations where more than one healthcare 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 healthcare 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 maintain it.

In these situations, the nurse is supported by practice setting policy, shared accountability and documentation.

Pre-pouring⁷ 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 and
- it can increase the possibility of errors (CNPS, 2007).

Guideline 16: The nurse does not pre-pour medication for themselves or others to administer.

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

In many practice settings, certain types of medication may be prepared by a pharmacist. For example, nurses in community settings may administer cytotoxic medication (i.e. methotrexate) which requires preparation under a laminar flow hood in a pharmacy setting. These products are prepared 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 (i.e. low molecular weight heparin).

Guideline 17: Pharmacy or manufacturer prepared and labeled medication can be administered by the nurse.

Compounding Medication

The definition of compound is as follows:

“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;⁸

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 intravenous (IV) medication to an IV solution for administration.

The mixing of pharmaceutical products of all dosage forms, oral liquid or solid, parenteral and topical, often affects the storage requirements, stability, and, thus, the

⁷ The term pre-pouring refers to preparing medications in advance and then storing them until you or others need them.

⁸ *Government Organization Act* (2000) Schedule 7.1,1(b)

efficacy of the product. Consultation with a pharmacist and/or published references is expected if the nurse has not prepared the compound in the past, and is required for any compounds that need to be stored.

Guideline 18: Nurses are authorized to compound medication.

Administration Times

ISMP has established acute care guidelines for timely administration of scheduled medication that nurses and employers can use as a resource when developing policies and procedures around timely administration of medication (2011a). Please visit their web site for more information: <https://www.ismp.org>

Drug delivery methods, complexity of care and workload may be contributing factors to 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 19: Nurses administer medications as close as possible to the scheduled time.

Client Consent

Informed and capable⁹ clients have the right to make decisions about accepting or refusing 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 (CNA, 2008). In a situation where a client refuses a medication, the nurse should determine the reasons for refusal; assess the client's level of understanding about the medication's effects, and follow-up with the prescriber.

Guideline 20: Nurses verify informed consent with the client before administering a medication.

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 often implied, such as in having a client hold out an arm for an injection or it may be stated verbally.

Policy and procedures for obtaining informed consent from the capable client should be developed and implemented based on best practices and legislation. The Canadian Nurses Protective Society InfoLAW Bulletin (2009) and the *Adult Guardianship and Trusteeship Act* (2009) provide more detailed information relating to the issue of informed consent.

⁹ 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).

Independent Double Checks

Independent double checking of high-alert medication (highly toxic and/or that require complex calculations) is a strategy that is used to help detect potentially harmful errors before they reach clients (ISMP, 2013a).

An independent double check requires two practitioners to separately check each component of the work process (compare the medication to the order or MAR, calculate the dosage and then compare the result). 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 with another colleague prior to administration.

Guideline 21: 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 two client identifiers is to reliably identify the individual as the person for whom the medication is intended and secondly, to match the medication label to that individual.

Some examples of checking two client identifications:

- The nurse manually or electronically checking the client's name and ID number on the MAR with the clients 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, one of the identifiers can be the client spelling their last name and stating their date of birth and the other their correct address.
- For clients not able to make an informed decision, the nurse is supported by practice setting policies.

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

Guideline 22: Nurses follow 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 (i.e. Morphine 2mg-4mg 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 at a particular point in time.

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

Acceptable: Morphine 2mg-4mg IV q3h
Avoid: Morphine 2mg-4mg 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, use the effectiveness of any previous medication dosages administered as a reference point, monitor the effectiveness of the medication administered and document the results.

Problems can occur with range dosage 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 when the unused dosage of a range dose order is used as a break-through pain order.

An Example:

Morphine 2mg-4mg IV q3h prn for pain is ordered for Mr. Murray. The nurse (based on a comprehensive assessment and discussion with Mr. Murray) decides to administer Morphine 2mg IV at 1400. After one hour, the client continues to have pain. The nurse cannot administer another 1-2mg of Morphine an hour later based on this same order as the order identifies the timeframe as q3h, not q1h. The nurse must either use an existing break-through pain medication order or 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 1-2mg 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

Guideline 23: Once a dosage is chosen within a range dose order, the nurse cannot use the remainder of the range dose as a break-through pain medication order.

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

Policy should address the following:

- 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)?
- Who may determine the dose, frequency and route within the range?
- The need for ongoing evaluation and communication of the range dose medication.

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 24: Nurses who administer 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 25: Nurses administering investigational or special access program medication must have the necessary information (i.e. product monograph) to safely administer, monitor and manage these medications and any potential side 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.

Immunizations

Additional knowledge, skill, judgment and authorization are required to administer immunizations. An individual prescription or order is required for a nurse to administer any immunizing agent. In public health settings, the Medical Officer of Health provides authority to administer immunizations.

Guideline 26: Nurses who administer immunizing agents must have specialized knowledge, skill and judgment.

Alberta has a comprehensive immunization program where universal immunization coverage is provided (*Alberta Immunization Strategy*, Alberta Health and Wellness, 2007). For information on Alberta Health's immunization policy go to their website at: <http://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. Safe immunization administration 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 as recommended
- 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 the core competencies needed by health care professionals to administer immunizations in Canada. Please see their website at: <http://www.phac-aspc.gc.ca>

Over the Counter (OTC) Medication

OTC medications refer to medications that can be obtained without a prescription (Schedule 2, 3 and Unscheduled drugs). 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 patient 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 1, 2 or 3 that may be sold from any retail outlet. |
| See <i>Alberta Pharmacy and Drug Act</i> , 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 the following:

- 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 education is completed as required by the practice setting.
- Clients are referred to other care providers when required.

Guideline 27: 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 28: Nurses are responsible and accountable for the assessment, recommendations, and education they provide to clients on OTC medication.

Guideline 29: Nurses are responsible and accountable for: a) following the practice setting OTC medication policies and/or protocols and b) ensuring that they have the knowledge, skill and competence to recommend an OTC medication safely and ethically.

Clients' Own Medication

Practice settings should have policies with respect to OTC and prescription medications that clients bring with them into the health-care setting. When supported by the practice setting policy, nurses may administer a client's own medication if they are appropriately labeled and in their original containers. 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, 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 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.

In some settings, the OTC and prescription medications the client brings with them are identified for a medication history but are then returned to the client's home.

Guideline 30: When supported by the practice setting policy, nurses may administer a client's own medication if they are appropriately labeled and in their original containers.

SELF-ADMINISTRATION OF MEDICATION

When appropriate, clients who are capable should be supported to self-administer medication. These clients may be completely independent or may require some assistance, such as help with opening containers, mechanical aids or preparing/preloading medication. Orders may be required for clients to self-administer medication depending on the practice setting policy.

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

Guideline 31: Nurses are responsible for assessing and documenting the client ability for self-administration of medication.

MANAGEMENT OF CONTROLLED DRUGS AND SUBSTANCES

The requirements for safe handling and administration of narcotics and controlled substances are outlined in federal legislation. The *Controlled Drug and Substances Act* (1996) delegate's authority to pharmacy for establishing practice setting policies. Pharmacists, in consultation with other stakeholders, develop policies at the practice setting level regarding storage, control, access to controlled substances and narcotic counts.

Management of Marihuana for Medical Purposes

It is anticipated that as of March 31, 2014, the Marihuana for Medical Purposes Regulations (MMPR) will come into effect. Medical Marihuana is classified as a Controlled Drug and Substance.

For more information on the regulations please visit Health Canada's website at: <http://www.hc-sc.gc.ca>

At the time of writing of this document there are no specific guidelines that CARNA can recommend. This document will be updated when such information becomes available.

DISPOSAL AND TRANSPORTATION

Nurses need to check medication labels to ensure that expired medications are not used. 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 (i.e. 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 32: Nurses should ensure that medication transport and disposal activities are part of their role in a particular practice setting and should be supported by practice setting policies and procedures.

Transporting a client's medication is not considered illegal since the nurse is viewed as acting as an agent of the client.

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 registered nurse who administered the medication, including professional designation
- effectiveness of the medication

Guideline 33: Nurses should only document medication they have administered themselves as soon as possible following the administration.

Emergency situations, such as a cardiac arrest, are an exception that may have different documentation policies and may warrant that nurses document medication administered by others. An additional exception is when the client self-administers medication, the nurse clearly documents who administered the medication and the reason.

Guideline 34: The nurse documents in the client record additional pertinent information related to the process of administering medication (i.e. self-administration, client questions, client refusal of medication), related interventions (i.e. client education, communication with prescriber) and outcomes of care (i.e., therapeutic drug response, side effects).

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 and use the electronic signature for signing their entries in the client record. There must be a process in place for identifying the full name and designation of the care provider who administers medication.

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.**

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

- provision of partial doses of a medication or a full prescription in a small rural emergency or where a pharmacist is not available
- providing 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

Guideline 35: Nurses are authorized to dispense medication in a particular practice setting a) when supported by practice setting policy b) based on client need and c) when there is no pharmacist available.

The following questions need to be considered when examining potential dispensing by nurses:

- Is there a pharmacist available?
- If there is no pharmacist, is this medication necessary to meet the needs of clients or vulnerable populations?
- Do the regulated members have the knowledge and skill to appropriately dispense the medication?
- Is there policy to support the practice?

The Alberta College of Pharmacists Standards of Practice 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. The Alberta College of Pharmacists 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
- medication 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
 - prescribers name and designation
 - directions for use
 - quantity dispensed
 - date dispense
 - 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

SAMPLE MEDICATION

Samples of medication are often provided by pharmaceutical companies to specific authorized health care providers free of charge. *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 the drug manufacturer.

Guideline 36: Nurses may dispense sample medication provided they a) have a medication order from authorized prescriber b) dispense in accordance with dispensing standards and c) are supported by practice setting policy.

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, the 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.

ISMP recommendations for safe handling of sample medication can be found at their website: www.ismp.org.

ADMINISTRATION OF MEDICATION BY OTHERS

Many healthcare settings deliver care in collaborative teams. Well-functioning teams contribute to patient safety and deliver quality care (CNA et al, 2009). In many of these settings, nurses may have the responsibility to supervise others in the performance of medication administration. Effective communication and clear roles 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* (CARNA, CLPNA & CRPNA, 2010) provides direction for nurses who work in settings where health-care aides (HCA) are employed. The HCAs responsibility may be to assist the client with taking their medication. They are responsible to remind or prompt the clients to take their medication, assist in opening medication containers and to ensure that the medication is taken at the appropriate time. The HCA may also be 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 administration system needs to be in place if HCAs assist with medication administration. The HCAs 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 work under the supervision of a faculty member and nurse. 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 37: In instances where medication are given to the client by either a HCA or a student, the nurse is accountable for appropriately assigning the intervention according to the 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 administration practice. 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.

Guideline 38: Nurses have a responsibility to report medication errors and near misses.

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 represents a resource for reducing the incidence of medication errors. 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 an important role in educating clients about their medication regime, in advocating for their needs, and in supporting them to be partners in their care.

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.

Strategies to Reduce Medication Errors

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

- creating a health-care culture of safety
- reporting all medication errors or near misses
- ensuring adequate staff mix levels for the client population
- 24-hour access to current medication administration resources (i.e. CPS)
- 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
- implementation of scheduled maintenance processes for equipment used in the administration of medication (i.e. IV pumps)
- provision of an appropriate environment for nurses to prepare medication
- provision of uninterrupted time for nurses to administer medication
- keeping workspaces where medication are prepared clean, orderly, well lit, and free of clutter
- implementation of 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 safety checklist, avoiding extraneous conversations and using "do not disturb" signs reduced medication errors.

REFERENCES

- Accreditation Canada. (2013). *Medication administration standards*. Ottawa, ON: Author.
- Accreditation Canada, the Canadian Institute of Health Information, the Canadian Patient Safety Institute, & the Institute for Safe Medication Practices Canada. (2012). [*Medication reconciliation in Canada: Raising the bar – progress to date and the course ahead*](#). Ottawa, ON: Accreditation Canada.
- Adult Guardianship and Trustee Act*. R.S.A. 2000, Chapter A-4.2.
- Alberta College of Pharmacists. (2011). *Standards of practice for pharmacists and pharmacy technicians*. Edmonton, AB: Author.
- Alberta College of Pharmacists, College and Association of Registered Nurses of Alberta & the College of Physicians and Surgeons of Alberta. (2007). *Ensuring safe & efficient communication of medications prescriptions in community and ambulatory settings*. Edmonton, AB: Author.
- Alberta Health and Wellness. (2007). *Alberta immunization strategy: 2007-2017*. Retrieved from <http://www.health.alberta.ca/documents/Immunization-Strategy-07.pdf>.
- Alberta Pharmacy & Drug Act*, R.S.A. 2000, c. P-13.
- Canada Food and Drug Act*, R.S.C. 1985, c. F-27.
- Canadian Nurses Association. (2008). *Code of ethics for registered nurses*. Ottawa, ON: Author.
- Canadian Nurses Association. (2010). [*Evidence-informed decision-making and nursing practice*](#). Ottawa, ON: Author.
- Canadian Nurses Association, Canadian Physiotherapy Association, Canadian Home Care Association, Canadian Pharmacists Association, Canadian Council for Practical Nurse Regulators, Registered Psychiatric Nurses of Canada, & the Canadian Psychological Association. (2008). *Maximizing health human resources: Valuing healthcare team members: Working with unregulated health workers: A discussion paper*. Ottawa, ON: Author.
- Canadian Nurses Protective Society. (2007). [*Medication errors*](#). Ottawa, ON: Author.
- Canadian Nurses Protective Society. (2009). *Consent for the incapable adult*. Ottawa, ON: Author.

- College and Association of Registered Nurses of Alberta. (2005a). *Health professions act: Standards for registered nurses in the performance of restricted activities*. Edmonton, AB: Author.
- College and Association of Registered Nurses of Alberta. (2005b). *Standards for supervision of nursing students and undergraduate nursing employees providing client care*. Edmonton, AB: Author.
- College and Association of Registered Nurses of Alberta. (2011). *Complementary and/or alternative therapy and natural health products: Standards for registered nurses*. Edmonton, AB: Author.
- College and Association of Registered Nurses of Alberta. (2013a). *Documentation standards for regulated members*. Edmonton, AB: Author.
- College and Association of Registered Nurses of Alberta. (2013b). *Practice standards for regulated members*. Edmonton, AB: Author.
- College and Association of Registered Nurses of Alberta, College of Licensed Practical Nurses of Alberta and College of Registered Psychiatric Nurses of Alberta. (2010). *Decision-making standards for nurses in the supervision of health care aides*. Edmonton, AB: Author.
- College of Registered Nurses of Nova Scotia. (2011a). [Immunization guidelines for registered nurses](#). Halifax, NS: Author.
- College of Registered Nurses of Nova Scotia. (2011b). [Medication guidelines for registered nurses](#). Halifax, NS: Author.
- Controlled Drugs and Substances Act*, S.C. 1996, c. 19.
- Gordon, D., Dahl, J., Phillips, P., Frandsen, J., Cowley, C., Foster, R., & ... Finley, R. (2004). *The use of "as-needed" range orders for opioid analgesics in the management of acute pain: A consensus statement of the American Society for Pain Management Nursing and the American Pain Society*. Retrieved from <http://www.aspmn.org/pdfs/As%20Needed%20Range%20Orders.pdf>
- Government Organization Act*, R.S.A. 2000, G-10.
- Health Professions Act*, R.S.A 2000, c. H-7.
- Institute for Safe Medication Practices. (2007a). Safe practices not evident when dispensing drug samples. *ISMP Medication Safety Alert! Community/Ambulatory Care Edition*. Retrieved from https://ismp.org/newsletters/ambulatory/archives/200703_1.asp.

- Institute for Safe Medication Practices. (2007b). The five rights: A destination without a map. *ISMP medication Safety Alert! Nurse Advise-ERR*. Retrieved from https://www.ismp.org/Newsletters/nursing/articles/2007_05.asp.
- Institute for Safe Medication Practices. (2007c). Failure to cap IV tubing and disinfect IV ports place patients at risk for infections. *ISMP Medication Safety Alert! Acute Care*. Retrieved from <https://www.ismp.org/newsletters/acutecare/articles/20070726.asp>.
- Institute for Safe Medication Practices. (2010, December). Perilous infection control practices with needles, syringes, and vials suggest stepped-up monitoring is needed. *ISMP Medication Safety Alert! Acute Care*. Retrieved from <https://www.ismp.org/newsletters/acutecare/articles/20101202.asp>.
- Institute for Safe Medication Practices. (2011a). *ISMP acute care guidelines for timely administration of scheduled medications*. Retrieved from <http://www.ismp.org/tools/guidelines/acutecare/tasm.pdf> .
- Institute for Safe Medication Practices. (2011b). *ISMP's list of confused drug names*. Retrieved from Institute for Safe Medication Practices.
- Institute for Safe Medication Practices. (2013a). Independent double checks: Undervalued and misused: Selective use of this strategy can play an important role in medication safety. *ISMP Medication Safety Alert! Acute Care*. Retrieved from <http://www.ismp.org/newsletters/acutecare/showarticle.asp?id=51>.
- Institute for Safe Medication Practices. (2013b). *ISMP's guidelines for standard order sets*. Retrieved from <http://www.ismp.org/tools/guidelines/standardordersets.pdf>.
- Institute for Safe Medication Practices. (2013c). *ISMP's list of error-prone abbreviations, symbols, and dose designations*. Retrieved from <http://www.ismp.org/tools/errorproneabbreviations.pdf>.
- Kliger, J., Blegen, M. A., Gootee, D., & O'Neil, E. (2009). Empowering frontline nurses: A structured intervention enables nurses to improve medication administration accuracy. *The Joint Commission Journal on Quality and Patient Safety*, 35(12), 604-612, AP1-2.
- Pape, T. M., Guerra, D. M., Muzquiz, M., Bryant, J. B., Ingram, M., Schraner, B., Alcalá, A., Sharp, J., Bishop, D., Carreno, E., & Welker, J. (2005). Innovative approaches to reducing nurses' distractions during medication administration. *Journal of Continuing Education in Nursing*, 36(3), 108.
- Potter, P. A., Perry, A. G., Ross-Kerr, J. C., Wood, M. J., Astie, B. J., & Duggleby, W., (Eds.). (2014). *Canadian Fundamentals of Nursing* (5th ed.). Toronto, ON: Mosby Elsevier.

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.; Koczmar, 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.

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.

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.

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.

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.

- 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/>)
 - 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.

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.

Appendix A

Determining currency, authenticity and completeness of prescriptions

STANDARD 5

Pharmacist's duties before dispensing a drug

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.

APPLICATION OF STANDARD 5

Determining the currency of a prescription

- 5.1 A pharmacist must review the prescription to determine when it was written.
- 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.
- 5.3 A pharmacist must not refill a prescription for
 - (a) a benzodiazepine or other targeted substance, as defined in the regulations to the *Controlled Drugs and Substances Act*, 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.

Determining the authenticity of a prescription

- 5.4 A pharmacist must determine the authenticity of a prescription by taking reasonable steps to:
 - (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.

Determining the completeness of a prescription

- 5.5 A pharmacist must determine the completeness of a prescription by ensuring that the prescription includes:
 - (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;

- (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.

Factors to be considered in determining the appropriateness of a prescription

- 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:
 - (a) the prescription is accurate;
 - (b) the prescription orders a drug or blood product for an indication that is:
 - (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.

Verbal order to be reduced to writing

- 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.

(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

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.

References

- Alberta College of Pharmacists. (April 2007). *Health Professions Act: Standards for Pharmacist Practice*.
- College and Association of Registered Nurses of Alberta. (2005). *Medication administration: Guidelines for registered nurses*. Edmonton, AB.
- Facsimile Transmission of Prescriptions*, Alberta College of Pharmacists, Approved April 5, 2002.
- Facsimile Transmission of Prescriptions*, CPSA Guideline, College of Physicians & Surgeons of Alberta, March 1999.
- Food and Drugs Act*, (R.S., 1985, c.F-27)
- Government Organization Act*, R.S.A. (2000), c. G-10.
- Koczmar, C., Jelincic, V., & Perri, D. (2006). Communication of medication orders by telephone – “Writing it right”. [Electronic version] *CACCN Dynamics*. 17 (1). 20-24. Retrieved July 19, 2006, from <http://www.ismp-canada.org/download/CACCN-Spring06.pdf>
- Lesar, T. S. (2003, Nov.). 40 of K. *AHRQ Web M&M: Morbidity & Mortality Rounds on the Web*. Retrieved July 11, 2006, from <http://webmm.ahrq.gov/printview.aspx?caseID=36>
- 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: Medication 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.