Quality Standards

Medication Safety

Care in All Settings

Ontario Health

Scope of This Quality Standard

The following quality standard addresses **care for people of all ages who are taking one or more medications**.

It focuses on care in all settings relevant to medication safety, including primary health care, specialist health care, hospital care, long-term care, and home and community care.

Although the quality standard addresses care for people of all ages who are taking medications, there may be additional medication safety considerations for certain groups (e.g., weight-based dosing for infants and children, medication overtreatment for frail older people) that are not addressed in the standard.

This quality standard is intended to complement other quality standards with medication-related content, such as *Transitions Between Hospital and Home*, *Opioid Prescribing for Acute Pain*, *Opioid Prescribing for Chronic Pain*, and condition-specific quality standards.

What Is a Quality Standard?

Quality standards outline what high-quality care looks like for conditions or processes where there are large variations in how care is delivered, or where there are gaps between the care provided in Ontario and the care patients should receive. They:

- Help patients, families, and caregivers know what to ask for in their care
- Help health care professionals know what care they should be offering, based on evidence and expert consensus
- Help health care organizations measure, assess, and improve their performance in caring for patients

Quality standards are developed by Ontario Health, in collaboration with health care professionals, patients, and caregivers across Ontario.

For more information, contact qualitystandards@ontariohealth.ca.

Quality Statements to Improve Care

These quality statements describe what high-quality care looks like for people taking one or more medications.

Quality Statement 1: Involvement in Decisions About Medication

People (or their substitute decision-makers) are involved in making informed decisions about their medications.

Quality Statement 2: Prescribing Practices

Prescriptions are sent to the dispensing pharmacy via e-prescribing software embedded in the patient's electronic medical record, which allows for two-way communication between the prescriber and the pharmacist. Effective clinical decision support systems are used to aid prescribing.

Quality Statement 3: Accurate and Up-to-Date Medication List

An accurate and up-to-date list of medications is available to people taking medication (and their families and caregivers, as appropriate) and to relevant health care professionals.

Quality Statement 4: Structured Medication Review

People taking medication have structured medication reviews, especially during health care visits when medications are a major component of their care, or as clinically indicated.

Quality Statement 5: Medication-Related Patient Safety Incidents

Patients, caregivers, health care providers, and organizations recognize, report, and learn from medication-related patient safety incidents. Health care providers and organizations support a patient safety culture that is person-centred, just, and trusting.

Table of Contents

Why This Quality Standard Is Needed

Medication safety is defined as "freedom from preventable harm with medication use"; it can affect health outcomes, length of stay in a health care facility, readmission rates, and overall costs to Canada's health care system.[1] Globally, unsafe medication practices and medication errors are a leading cause of injury and avoidable harm in health care systems.[2] Medication errors happen for many reasons, including fatigue; poor environmental conditions; staff shortages; and mistakes in prescribing, transcribing, dispensing, administration, and monitoring practices. Medication errors can result in severe harm, disability, and even death.[2] Half (50%) of reported critical medication incidents occur during administration, and 19.4% occur during prescribing.[3]

The populations at greatest risk of harm related to medication safety incidents include[4,5]:

- Children and young people
- Older people (including frail older people and those near the end of life)
- People taking multiple medications (polypharmacy)
- People who are pregnant or breastfeeding
- People with mental health conditions
- People with mild cognitive impairment or dementia
- People with a first language other than English
- People with disabilities that make communication difficult (e.g., vision or hearing impairment)
- People with learning disabilities
- People with low literacy or health literacy
- People who have religious restrictions
- People who are of low socioeconomic status or do not have a drug plan, making access to medication difficult

To protect patients from medication-related harm, the World Health Organization has identified three key action areas, each of which poses substantial risk to patient health and safety[2]:

- **High-risk situations or medications that have a higher risk of serious patient harm when errors occur**
  - A 5-year analysis (2015–2020)[6] of incidents reported to the Canadian Medication Incident Reporting and Prevention System found that:
    - The three medications most frequently reported in harm incidents with outcomes of any degree of severity across all health care settings were insulin (6.1%), hydromorphone (5.9%), and morphine (2.8%)
    - The three medications most frequently reported in incidents involving severe harm or death across all settings were hydromorphone (11.1 %), morphine (6.6%), and methotrexate (5.3%)
- **Transitions in care,** including the movement of people between home, hospital, and residential care settings, and consultations with health care providers (for detailed quality statements related to medication practices at transitions in care, please refer to Ontario Health's *Transitions Between Hospital and Home* quality standard[7])
- **Polypharmacy,** often defined as the routine use of five or more medications,[2,8] including over-the-counter, prescription, and traditional and complementary medicines
  - In 2017 in Ontario, 53.5% of people aged 75 years and older were taking five or more medications concurrently (the Canadian average for people aged 75 years and older was 47.7%)[9]
  - According to the Canadian Institute for Health Information, 61% of residents of Ontario long-term care homes in 2012 were taking 10 or more different prescription medications concurrently[10]
  - A study of Ontario home care clients in 2008 and 2009 found the overall incidence of adverse events was 13%. Medication-related adverse events were among the most common, and polypharmacy was associated with an increased risk of adverse events[11,12]

Medications are the most common therapeutic intervention; ensuring safe medication use and improving patient safety are priorities across the health care system. For example, medication administration is one of five areas of focus related to patient safety in "Acute-Care Hospital Patient Safety and Drug Administration," part of the Auditor General of Ontario's 2019 value-for-money audit.[13] The *Public Inquiry into the Safety and Security of Residents in the Long-Term Care Homes System*, led by Justice Eileen E. Gillese, identified medication management as a key area for improvement to enhance the safety and security of residents living in long-term care homes, as well as those accessing home care services.[14] Safety in home care has become a focus at the provincial and national levels, and safety reviews have identified medications as a major cause of adverse events for people at home, many of which were considered

preventable.[11,12,15,16] The *Protecting Canadians from Unsafe Drugs Act*, also known as Vanessa's Law, requires hospitals to report all serious adverse drug reactions and medical-device incidents to Health Canada to strengthen Health Canada's ability to take quick and appropriate action when serious risks are identified.[17] Medication safety is also a key area of focus for regulatory colleges, accreditation organizations, and professional bodies, who provide best practice recommendations, accreditation standards, guidelines, and regulatory requirements to improve safe medication use.

This quality standard includes five quality statements that address areas identified by the Medication Safety Quality Standard Advisory Committee as having high potential to improve medication safety in Ontario, for people of all ages in all settings.

Measuring the Success of This Quality Standard

The Medication Safety Quality Standard Advisory Committee identified six indicators to measure the success of this quality standard.

Indicators That Can Be Measured Using Provincial Data

- Percentage of people who take one or more prescription medications and who report that their care provider has reviewed and discussed their medications with them in the previous 12 months
- Percentage of people who are eligible for the Ontario Drug Benefit program (i.e., who are aged 65 years or older) who have a MedsCheck medication review within 7 days of being discharged home from hospital
- Percentage of people aged 65 years and older who take prescription medication and who are prescribed medication that appears in the Screening Tool of Older Persons' Prescriptions (STOPP) and Screening Tool to Alert to Right Treatment (START) or Beers Criteria for Potentially Inappropriate Medication Use in Older Adults[18]
- Percentage of people discharged from hospital to home who have a drug-related emergency department visit within 30 days after discharge
- Percentage of people discharged from hospital to home who have a drug-related hospital readmission within 30 days after discharge

Indicator That Can Be Measured Using Only Local Data

- Percentage of people in hospital who are taking one or more medications and who have a medication-related patient safety incident

In some cases, the directionality of these indicators may not always be straightforward. Improved documentation and data collection may show results worsening before they improve. Further analyses can be used to understand any changes in indicator results.

Quality Statements to Improve Care: The Details

<div style="border: 2px solid purple; display: inline-block; padding: 20px 30px;">

1

</div>

Involvement in Decisions About Medication

People (or their substitute decision-makers) are involved in making informed decisions about their medications.

Sources: National Institute for Health and Care Excellence, 2009,[19] 2014,[5] 2015[4]

Definitions

Substitute decision-maker: A person who makes care and treatment decision(s) on another person's behalf if or whenever that person becomes mentally incapable of making those decisions for themself.[20,21] Capacity is issue or task specific.[20] The substitute decision-maker makes a decision(s) based on their understanding of the person's wishes or, if these wishes are unknown or not applicable, makes choices that are consistent with the person's known values and beliefs and in the person's best interests.[22]

Involved in making informed decisions about their medications: In any consultation related to medication, the person's values and preferences should be taken into account, and the person should be offered the opportunity to discuss what is important to them about their medications and about treating or managing their condition.[23]

Using a shared decision-making approach that is sensitive to people's preferences and aligns with their needs, health care professionals should[24]:

- Invite the person (or their substitute decision-maker) to participate; invite family and caregivers, if the person agrees
- Provide evidence-based information about the potential benefits and harms of the medication (including side effects and drug interactions), as well as the risks of nonadherence

- Present options, including information about dosage, frequency, how the medication is taken, route of administration, and cost (if applicable) for each option
- Help people to evaluate the options based on their values and preferences
- Facilitate deliberation and decision-making to obtain informed consent
- Help implement decisions

When involving people in decision-making, health care professionals should consider the following factors that may affect a person's involvement or ability to communicate:

- Any difficulty understanding, reading, or speaking the language in which care is delivered[19]
- Their desire to participate and their personal preferences[19]
- Physical or learning disabilities[19]
- Vision or hearing impairments[19]
- Their health literacy
- Their cognitive ability (if they are mentally incapable of making decisions for themselves, involve their substitute decision-maker)
- Their age, developmental stage, and ability (for children and adolescents)
- Cultural or religious beliefs

Rationale

An important part of medication management is enabling people to make choices about their medications by involving them in decisions, based on their ability and wishes.[25] People may choose to involve their family and caregivers in the decision-making process. Families and caregivers often play an important role in supporting people and helping them follow their medication regimen; in some cases, family members or caregivers may administer the medications. If people are incapable of making treatment decisions for themselves, their substitute decision-maker must be involved. Involving people in evidence-based decision-making (i.e., using the best available evidence to guide decisions) can lead to improved clinical outcomes, satisfaction, and experience of care.[4] People should be given information about their condition; treatment objectives; and treatment options, including side effects, risks, drug interactions, potential benefits and effectiveness, and anticipated out-of-pocket costs.[4,19] The format and content of the information should meet each person's needs.[26]

What This Quality Statement Means

For People Taking Medication, Families, and Caregivers

Every time a decision needs to be made about your medication (for example, starting, using less, stopping, or changing a medication), the person prescribing your medication should ask if you and your family or caregiver would like to be involved in that decision. If you want to be involved, they should give you information that is easy for you to understand so that you can make the decision together. They should talk with you about:

- Any concerns you have about your condition or medication
- The reason for taking the medication
- How long you would need to take it
- When you would need to take it
- Possible benefits of taking it
- Possible harms of taking it (including side effects and drug interactions)
- Costs

For Clinicians

Offer people (or their substitute decision-makers) the opportunity to make informed decisions whenever medications are being started, stopped, changed, or deprescribed. If caregivers are involved in the person's care, they should also be included in these discussions, with the person's permission. To facilitate decision-making[19,23]:

- Establish the most effective method of communication for the person
- Consider using decision aids (if available)
- Ask open-ended questions to understand the person's preferences, concerns, and expectations; answer any questions they may have about the medication
- Present evidence-based information in an understandable and accessible format that is suitable for the person's needs and preferences (e.g., images, symbols, large print, different languages, or with help from an interpreter or a patient advocate). Ensure that, at a minimum, the information addresses the reason for use, potential benefits and harms, and anticipated out-of-pocket costs
- Acknowledge that the person's treatment-related values and preferences may be different from your own, and avoid making assumptions

Ensure that team members reinforce any medication information you have provided, and that they respond to people's concerns or questions about their medication.

Specialists: Communicate with the patient's primary care provider (family doctor or nurse practitioner; where possible) to inform them of any medication starts, stops, changes, or deprescribing.

For Organizations

Ensure that health care professionals involve people (or their substitute decision-makers, and family and caregivers, with the person's permission) in making decisions about medications. Ensure that health care professionals develop the necessary knowledge, skills, and expertise to make effective use of tools such as patient decision aids in consultations about medications.[4,23] Examples of necessary knowledge, skills, and expertise include relevant clinical knowledge, effective communication and consultation skills, and the ability to explain the trade-offs between benefits and harms. Ensure that health care professionals have access to these tools at the point of care (adapted to patient needs and preferences) to facilitate decision-making.

2

Prescribing Practices

Prescriptions are sent to the dispensing pharmacy via e-prescribing software embedded in the patient's electronic medical record, which allows for two-way communication between the prescriber and the pharmacist. Effective clinical decision support systems are used to aid prescribing.

Sources: Advisory committee consensus | National Institute for Health and Care Excellence, 2015[4]

Definitions

E-prescribing software embedded in the patient's electronic medical record: The prescribing software integrated into the electronic medical record should[27]:

- Securely transmit prescriptions to a patient's pharmacy (including refill requests)
- Integrate with the dispensing pharmacy's management software and automatically populate any appropriate fields[28]
- Allow for timely two-way communication between the prescriber and the pharmacist

Effective clinical decision support systems: A computerized clinical decision support system is "an active, computerized intervention that occurs at the time and location of prescribing, to support prescribers with decision-making."[4] Clinical decision support systems can be embedded into computerized physician order entry systems, providing prompts for accurate and evidence-informed medication prescribing.[29]

Information integrated into a clinical decision support system should[4]:

- Identify important safety issues
- Include a system that requires health care professionals to acknowledge mandatory alerts, including those for medication-related "never events" (i.e., patient safety incidents that result in serious harm or death, and that can be prevented by using organizational checks and balances[30]). Mandatory alerts for "never events" should not be customizable
- Reflect the best available evidence and be updated regularly
- Contain useful, relevant clinical information to minimize alert fatigue (i.e., a decline in a prescriber's responsiveness to a particular type of alert because of repeated exposure to that alert over time)

Rationale

Prescribing errors, common in all care settings, account for 70% of medication errors that could result in adverse effects, causing significant harm to people.[31] They include prescription errors (lapses, mistakes, or unintended omissions in the transcription of drugs) and prescription faults (caused by poor handwriting or erroneous medical decisions, such as inappropriate dosage selection).[31] In inpatient pediatric settings, medication errors and adverse drug events have been reported to occur in more than 5% of prescriptions and 6% of patient admissions.[29]

To improve patient safety and minimize the risk of errors related to handwritten, faxed, or telephone prescriptions, prescribers can generate, transmit, and refill prescriptions using e-prescribing software embedded in a patient's electronic medical record.[27] This process streamlines the flow of clinical practice and patient care, increases patient satisfaction and medication adherence, and leads to cost savings.[27]

Decision-making in health care combines the best available evidence with the experience of the health care professional and the views and experiences of the patient.[4,32] This can be implemented in clinical practice using information technology and a clinical decision support system, coupled with clinical judgment.[4] Automated prescribing systems with clinical decision support functionality can reduce the risk of harm, decrease the number of errors related to medication dispensing and administration, and improve the quality of medical care.[31] An appropriately designed and implemented prescribing system with clinical decision support functionality is critical to ensuring that prescribers reap the potential benefits of this technology and improve patient safety.[29]

What This Quality Statement Means

For People Taking Medication

To make sure your prescription is correct, the person who prescribes your medication should talk with you about what medications are being started or changed. Then, they should send your prescription to the pharmacy electronically. They should offer you a copy of the prescription. They should also use a computer system that helps them work with you to make the best medication choices (see quality statement 1). Unless you are staying in hospital or long-term care, the prescription should be sent to your pharmacy of choice. If you can, have all your prescriptions go to the same pharmacy. That way, the pharmacist can help detect possible drug interactions, and your medication records (including allergy information) will be in one place.

For Clinicians

To reduce the risk of prescribing errors, use e-prescribing software embedded in your patient's electronic medical record, both to ensure that their medication information can be stored, accessed, and shared with their pharmacy,[27] and to facilitate two-way communication with the pharmacist. Along with your clinical experience, use a computerized clinical decision support system or a system with those functionalities to guide prescribing of the optimal medication and dosage and to reduce the risk of adverse effects and harms associated with prescription errors and faults.[31] Use the structured data fields of the e-prescribing software, rather than free-text fields, to ensure that clinical decision support rules are activated. If you are sending the prescription to a community pharmacy, send it to the patient's pharmacy of choice. Encourage patients to use only one pharmacy, if possible, to enable checking for drug interactions and keep their medication records (including allergy information) in one place.

For Organizations

Ensure that health care professionals have access to an electronic medical record system that includes electronic prescribing software, and that they are trained in using it. The system should transmit prescriptions electronically to a patient's pharmacy and allow two-way communication between the prescriber and the dispensing pharmacist.

Ensure that the electronic system also includes appropriate and effective clinical decision support systems so that prescribers can receive prompts and alerts based on the best available evidence (e.g., alerts based on risk of patient harm and its severity). Ensure that robust and transparent processes are in place for developing, implementing, using, reviewing, and updating clinical decision support systems, and that these systems

are used in conjunction with health care professionals' clinical judgment and patients' values and preferences.[4]

3

Accurate and Up-to-Date Medication List

An accurate and up-to-date list of medications is available to people taking medication (and their families and caregivers, as appropriate) and to relevant health care professionals.

Sources: National Institute for Health and Care Excellence, 2014[5], 2015[4]

Definition

Accurate and up-to-date list of medications: A complete list of all the medications a person takes regularly or as needed (including prescription medications, over-the-counter medications, vitamins and minerals, herbal and natural health products, traditional medicines, medication samples from prescribers, etc.) and any drug allergies (including the type of reaction experienced). This list includes medications of all forms (e.g., pills, liquids, creams, patches, inhalers [puffers], eye and ear drops). Information about each medication should include:

- The drug name, dosage, frequency, and route of administration
- The indication or reason for use
- Dates of initiation, dosage changes, and reorders
- The planned duration of use

Additional information listed may include:

- Any adverse drug reactions (including drug allergies) or drug intolerances reported, and the presumed cause
- Reasons for dosage changes, discontinuation, or deprescribing of medications, if applicable
- The date the list was created or updated

Rationale

Because there is no centralized provincial repository where people's medication lists are stored, people often have multiple medication lists from numerous health care providers and previous hospitalizations. Out-of-date and inaccurate medication lists can contribute to medication errors and make reaching treatment decisions challenging for health care professionals and their patients. An accurate and up-to-date list of medications is often the "best possible medication history": it can help health care professionals identify people who might benefit most from a structured medication review (see quality statement 4), and from medication reconciliation and optimization; it can also support health care professionals in performing these activities.[4]

Health care providers should meaningfully engage with patients (and, if they give consent, their family or caregivers) when creating or updating a list of medications, and in discussions about medication changes. Primary care providers are ideally situated to create and update the medication list with the patient because of (1) their knowledge of the patient and their health care needs and (2) primary care providers' connection with specialists. Other sources of information that can be used to inform the medication list include a person's MedsCheck record or medication list from their community pharmacist, medication vials or blister packs, specialist's consultation reports, hospital discharge summaries, or the Ontario Digital Health Drug Repository.[7,33] Once a medication list has been established, it should be updated whenever changes are made. A person's updated medication list should be shared with them and their family or caregivers, unless the person indicates that they do not want it shared. Medication lists are an important tool that can be used to reconcile medications at transitions between care settings, health care providers, and levels of care. They can also be used to identify and resolve medication-related problems. Medication review and support during transitions between hospital and home are addressed in quality statement 7 of the *Transitions Between Hospital and Home* quality standard.[7]

What This Quality Statement Means

For People Taking Medication, Families, and Caregivers

You (and any family or caregivers if you choose) should be offered an accurate, up-to-date list of all your medications. The list should include information about what each medication is for, your dosage, when to take your medications, and how to use them. It might also include any medications you took before that didn't work or caused side effects. Your health care providers should involve you in creating and updating this list. They should also make sure you fully understand the medications you are taking and

talk with you about any questions and concerns you have. Keep a copy of your medication list with you (e.g., in your wallet, on your mobile phone) and share it with any health care providers who help you manage your medications. If you have medications that you no longer need or that are expired, bring them to your local pharmacy for safe disposal.

For Clinicians

Engage people in creating and updating their medication list, and talk with them to make sure they understand what medications they are taking and why. Ask people if they are taking the medications on their list and doing so as prescribed; also ask how they are tolerating each medication. Ensure that people's electronic medical record includes an accurate and up-to-date list of their medications. Share medication lists with relevant health care professionals, especially during transitions in care. Encourage people to keep an up-to-date copy of their medication list with them, share it with their health care providers, and safely dispose of any unused, unneeded, or expired medications at their local pharmacy.

For Organizations

Implement medication-related communication systems and processes so that accurate, up-to-date lists of medications can be created, revised, and shared across health care providers and care settings, especially during transitions in care. This can be best achieved using an electronic medical record that is integrated into provider practices and systems and allows health care professionals to share information with each other.

<div style="border:1px solid #8000ff; display:inline-block; padding:10px 20px;">

4

</div>

Structured Medication Review

People taking medication have structured medication reviews, especially during health care visits when medications are a major component of their care, or as clinically indicated.

Sources: National Institute for Health and Care Excellence, 2009,[19] 2014,[5] 2015[4]

Definitions

Structured medication review: A critical examination of all medications a person takes regularly or as needed (including prescription medications, over-the-counter medications, vitamins and minerals, herbal and natural health products, traditional medicines, medication samples from prescribers, etc.).[7] This includes medications of all forms (e.g., pills, liquids, creams, patches, inhalers [puffers], eye and ear drops). The aim is for the health care professional and the patient to agree on the treatment plan; ensure each medication is indicated, beneficial, appropriate, and being used effectively; identify and resolve medication-related problems; and reduce waste.[4]

A structured medication review should be completed once a year at minimum, or more frequently depending on the clinical context. Other types of medication assessment activities can be conducted for particular purposes between structured medication reviews (e.g., assessment of a medication for a specific indication or condition, to address issues relating to a side effect or the patient's medication-taking behaviour)[34] or for people with less complex needs.[4]

Structured medication reviews may be particularly important for the following groups:

- Infants, children, adolescents, and adults who are taking five or more medications (polypharmacy).[4] However, numerical definitions of polypharmacy do not necessarily account for specific concurrent conditions and may make it

difficult to assess the safety and appropriateness of medication therapy in the clinical setting[8]

- Infants, children, adolescents, and adults with chronic or long-term health conditions[4]
- Older people (aged 65 years and older)[4]
- People taking high-risk (high-alert) medications (e.g., opioids, insulin, anticoagulants, chemotherapy agents)[4,35] or a risky combination of medications.[35] The Institute for Safe Medication Practices Canada has developed lists of high-alert medications for acute care,[36] community/ambulatory settings,[37] and long-term care[38]
- People living with mild cognitive impairment or dementia
- People transitioning within and between care settings or health care professionals. Medication review and support during transitions between hospital and home are addressed in quality statement 7 of the *Transitions Between Hospital and Home* quality standard[7]

As clinically indicated: Clinical indications for a medication review include, but are not limited to:

- People experiencing symptoms of a potential adverse drug reaction (e.g., confusion, falls, sleepiness, weight loss or decreased appetite, urinary incontinence, bowel issues)[4]
- People starting a new medication
- People with frequent unplanned hospital admissions or emergency department visits
- People who have had significant changes to their medication regimen in the last 3 months[4]
- People experiencing a subtherapeutic response to treatment with medication
- People, family, or caregivers who have concerns about the number of medications a person takes, or if there are known or potential issues with adherence[4]
- People who have had a significant change in their health status (e.g., diagnosis of a progressive, life-limiting illness that may alter treatment goals)

Rationale

A structured medication review using an accurate, up-to-date list of medications (see quality statement 3) can help ensure that people are prescribed the most appropriate

medications, identify and resolve medication-related problems, reduce errors, encourage shared decision-making, and optimize medication use. Who will complete the structured medication review and how it will take place should be established locally; the health care professional or team with the right therapeutics knowledge, familiarity with the person's medical history, and the most effective communication skills is best positioned to perform the review.[4] Medication reviewers should assess the safety and effectiveness of a person's medications, as well as the appropriateness (e.g., alignment with best evidence). Medication adherence (the extent to which the person's actions match the agreed-upon recommendations) should be considered in a medication review.[19] Nonadherence may limit the benefits of a medication, resulting in a lack of improvement or a deterioration in health.[19] Nonadherence may be intentional or unintentional. Reasons for nonadherence include poor recall or difficulty understanding the medication regimen, problems taking the medications, an inability to pay for medications, and forgetting to take them.[19]

With polypharmacy, the risk of people experiencing harm from their medication increases.[4] Polypharmacy is widespread and increasingly common, occurring in all settings and all age groups.[39] It is driven by the growth of an aging population,[40] the increasing prevalence of people living with more than one chronic condition (called multimorbidity), and the increasing availability of effective medications for these conditions.[40,41] Polypharmacy can be appropriate when medication use is optimized and therapeutically beneficial, but it can be problematic if it leads to undesirable consequences, including drug–drug interactions, medication errors, adverse drug reactions, nonadherence, lower quality of life, and high health care costs.[39,40] One Canadian study estimated that the cost of potentially inappropriate prescribing among older Canadians was $419 million each year, and that the indirect health care costs of treating the harmful effects of these medications was $1.4 billion each year.[42]

Medications need to be reviewed periodically with the person taking them to ensure that essential laboratory tests are performed; adverse drug reactions and potential drug–drug or drug–condition interactions are detected; potentially inappropriate medications are discontinued or deprescribed; people are given essential information and involved in decisions about their medications; and therapy is optimized.[4,39,40]

A change in the number of medications prescribed is not necessarily an indicator of the quality of the medication review. Medications can be added or stopped to optimize therapy.[4] A structured medication review is also important when people transition between care settings, health care providers, and levels of care. [19]

What This Quality Statement Means

For People Taking Medication

Your health care professionals should regularly review your list of medications with you. They should talk with you about your treatment plan, what medications you are taking and why, and whether your medication is working. They should discuss how to prevent or reduce the risk of side effects or errors. Together you can decide if you need all of your medications.

For Clinicians

Identify people who may benefit from a structured medication review. Undertake medication reviews regularly with people taking medication, or refer people to a specialist in this area, especially when medications are a major component of care, or as clinically indicated. Work with people to address any individual issues or concerns they raise about their medications. During a structured medication review, take into account the following[4]:

- All medications a person takes regularly or as needed (see list in the definition of "structured medication review" above), and what they are for
- How safe the medications are, how well they work for the person, and how appropriate they are
- Whether the person is at risk for or has experienced a current or previous adverse drug reaction
- The person's views and understanding of their medications, and any concerns, questions, or problems they may have (as well as those of their family members or caregivers, where appropriate)
- Any monitoring needed to evaluate the effectiveness or safety of their medications

For Organizations

Determine locally the most appropriate health care professional or team of health care professionals to carry out a structured medication review based on their knowledge and skills, including technical knowledge of processes for managing medications, therapeutic knowledge of medication use, and effective communication skills.[4]

<div style="border: 1px solid purple; display: inline-block; padding: 10px;">

5

</div>

Medication-Related Patient Safety Incidents

Patients, caregivers, health care providers, and organizations recognize, report, and learn from medication-related patient safety incidents. Health care providers and organizations support a patient safety culture that is person-centred, just, and trusting.

Source: National Institute for Health and Care Excellence, 2015[4]

Definitions

Medication-related patient safety incidents: Unintended or unexpected incidents that are specifically related to medication use, and that could or did lead to patient harm[4]; "any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient, or consumer."[43] These include potentially avoidable medication-related hospital admissions and readmissions, prescribing errors, dispensing errors, administration errors, monitoring errors, potentially avoidable adverse events, missed doses of medicines, and near misses.[4] Medication incidents may be related to professional practice, drug products, procedures, and systems; they include prescribing, order communication, product labelling/packaging/nomenclature, compounding, dispensing, distribution, administration, education, monitoring, and use.[44]

Patient safety culture that is person-centred, just, and trusting: A culture in which human error is dealt with openly rather than punitively.[14] Reporting and learning from medication-related patient safety incidents at all levels (including individual care, facilities, and health systems locally, provincially, and nationally) is encouraged and supported.[14,19,45] Team members (including patients and families) are included in

the incident review process, and the outcome of the incident review and improvements made are shared with them.

Rationale

Recognizing and reporting medication-related patient safety incidents allows for future learning, prevention, and the minimization of harm. An expanded awareness of reporting systems and the portals available to anyone reporting, including patients and their families or caregivers, reinforces the importance of the reporting process to patient safety.[46] This is important in all health care settings.

What This Quality Statement Means

For People Taking Medication, Families, and Caregivers

Your health care providers should talk with you about how to recognize mistakes or reactions related to your medication, and how to report them. (A reaction is an unwanted effect that happens when you take your medication as directed.) They should give you information about how to ask for help or report an error or reaction. This information should let you know who to contact and tell you about the role of patient advocates. You can also report a medication error or reaction through programs such as the Institute for Safe Medication Practices Canada Medication Error Reporting program or the Health Canada MedEffect Canada program.

For Clinicians

Offer information to people taking medication (and their family and caregivers) about how to identify and report medication-related patient safety incidents. Report any such incidents in a consistent and timely manner, in line with existing reporting systems. When incidents are identified, take action to reduce further risk and prevent future incidents. Apply and share learnings with others. The Canadian Incident Analysis Framework is a resource to support those who analyze patient safety incidents in any health care setting and to identify ways to implement system improvements and prevent similar incidents.[47]

For Organizations

Ensure robust and transparent processes are in place to identify, report, and investigate medication-related patient safety incidents and learn from them to prevent future incidents. Consider using multiple methods to identify and report medication-related patient safety incidents, such as health record reviews, surveys, and direct observation

of medication adminstration.[4] Identify and address barriers to the identification and reporting of patient safety incidents. Share learning across organizational boundaries to reduce the risk of a similar type of incident occurring elsewhere. The Canadian Incident Analysis Framework is a resource to support those who analyze patient safety incidents in any health care setting and identify ways to implement system improvements and prevent similar incidents.[47]

Appendices

Appendix 1. About This Quality Standard

How to Use This Quality Standard

Quality standards inform patients, clinicians, and organizations about what high-quality care looks like for health conditions or processes deemed a priority for quality improvement in Ontario. They are based on the best evidence.

Guidance on how to use quality standards and their associated resources is included below.

For Clinicians and Organizations

The quality statements within this quality standard describe what high-quality care looks like for people taking one or more medications. They are based on the best evidence and designed to help you know what to do to reduce gaps and variations in care.

Many clinicians and organizations are already providing high-quality evidence-based care. However, there may be elements of your care that can be improved. This quality standard can serve as a resource to help you prioritize and measure improvement efforts.

Tools and resources to support you in your quality improvement efforts accompany each quality standard. These resources include indicators and their definitions (Appendix 2). Measurement is key to quality improvement. Collecting and using data when implementing a quality standard can help you assess the quality of care you are delivering and identify gaps in care and areas for improvement.

There are also a number of resources online to help you, including:

- Our patient guide on medication safety, which you can share with patients and families to help them have conversations with you and their other health care providers. Please make the patient guide available where you provide care
- Our measurement resources, which include our measurement guide of technical specifications for the indicators in this quality standard, and our "case for improvement" slide deck to help you to share why this standard was created and the data behind it
- Our *Getting Started Guide*, which includes links to templates and tools to help you put quality standards into practice. This guide shows you how to plan for, implement, and sustain changes in your practice

- Quorum, an online community dedicated to improving the quality of care across Ontario. This is a place where health care providers can share information and support each other, and it includes tools and resources to help you implement the quality statements within each standard
- The Health Equity Impact Assessment tool, which can help your organization consider how programs and policies impact population groups differently. This tool can help maximize positive impacts and reduce negative impacts, with an aim of reducing health inequities between population groups

How the Health Care System Can Support Implementation

As you work to implement this quality standard, there may be times when you find it challenging to provide the care outlined due to system-level barriers or gaps. These challenges have been identified and documented as part of the development of the quality standard, which included extensive consultation with health care professionals and lived experience advisors and a careful review of available evidence and existing programs. Many of the levers for system change fall within the purview of Ontario Health, and as such we will continue to work to address these barriers to support the implementation of quality standards. We will also engage and support other provincial partners, including the Ministry of Health or other relevant ministries, on policy-level initiatives to help bridge system-level gaps.

In the meantime, there are many actions you can take on your own, so please read the standard and act where you can.

Appendix 2. Measurement to Support Improvement

The Medication Safety Quality Standard Advisory Committee identified six indicators for this quality standard. These indicators can be used to monitor the progress being made to improve care for people taking one or more medications. Most indicators are provincially measurable, while one can be measured using only locally sourced data.

Using data from these indicators will help you assess whether your adoption of this quality standard has been successful. We recommend that you use currently available data sources to measure one or more of the indicators to guide and evaluate your quality improvement efforts. Additional information on collecting data for these indicators is available in the measurement guide.

Where possible, data for provincially measured indicators is reported by various equity stratifications, such as patient socioeconomic and demographic characteristics, which include age, income, region, and rurality. To assess equitable delivery of care, you can collect data for locally measured indicators by patient socioeconomic and demographic characteristics, such as age, education, gender, income, language, race, and sex.

Measuring the Success of This Quality Standard

Indicators That Can Be Measured Using Provincial Data

Percentage of people who take one or more prescription medications and who report that their care provider has reviewed and discussed their medications with them in the previous 12 months

- Denominator: total number of people who take at least one prescription medication
- Numerator: number of people in the denominator who answer "yes" to the question, "In the last 12 months, has your provider reviewed and discussed with you the prescription medicine(s) you are using?"
- Data sources: Health Care Experience Survey,[48] Ministry of Health

Percentage of people who are eligible for the Ontario Drug Benefit program (i.e., who are aged 65 years or older) who have a MedsCheck medication review within 7 days of being discharged home from hospital

- Denominator: total number of people who are eligible for the Ontario Drug Benefit program who present to a pharmacy within 7 days of being discharged home from hospital and who meet the criteria for a MedsCheck
- Numerator: number of people in the denominator who have a MedsCheck review claim within 7 days of being discharged from hospital
- Data sources: Discharge Abstract Database, Canadian Institute for Health Information, Ontario Drug Benefit, Ministry of Health

Percentage of people aged 65 years and older who take prescription medication and who are prescribed medication that appears in the Screening Tool of Older Persons' Prescriptions (STOPP) and Screening Tool to Alert to Right Treatment (START) or Beers Criteria for Potentially Inappropriate Medication Use in Older Adults

- Denominator: total number of people aged 65 years and older who are prescribed medication
- Numerator: number of people in the denominator who are prescribed medication that appears in the STOPP/START tools or Beers Criteria for Potentially Inappropriate Medication Use in Older Adults[18]
- Data sources: National Prescription Drug Utilization Information System, Canadian Institute for Health Information

Percentage of people discharged from hospital to home who have a drug-related emergency department visit within 30 days after discharge

- Denominator: total number of people discharged from hospital to home
- Numerator: number of people in the denominator who have a drug-related emergency department visit within 30 days after discharge
- Data sources: National Ambulatory Care Reporting System and Discharge Abstract Database, Canadian Institute for Health Information

Percentage of people discharged from hospital to home who have a drug-related hospital readmission within 30 days after discharge

- Denominator: total number of people discharged from hospital to home
- Numerator: number of people in the denominator who have a drug-related hospital readmission within 30 days after discharge
- Data sources: National Ambulatory Care Reporting System and Discharge Abstract Database, Canadian Institute for Health Information

Indicator That Can Be Measured Using Only Local Data

Percentage of people in hospital who are taking one or more medications and who have a medication-related patient safety incident

- Denominator: total number of people in hospital who are taking one or more medications who are discharged from hospital during the reporting period
- Numerator: number of people in the denominator who have a medication-related patient safety incident (including death or serious disability) or a near miss
- Data source: local data collection

Appendix 3. Glossary

Adverse drug reaction: An unwanted effect that happens when the medication is used as directed. Sometimes called a "side effect." Unlike a medication error, an adverse drug reaction does not involve a mistake and can typically be prevented. Reactions can range from minor reactions, such as a skin rash, to serious and life-threatening events such as a heart attack or liver damage.[49]

Beers Criteria: A consensus list of medications that are potentially inappropriate for older people, developed by Dr. Mark Beers and a panel of experts from the United States. It was first published in 1991, with the goal of reducing preventable adverse drug effects among older people in long-term care homes. The Beers Criteria were updated in 1997 and 2003 and are now targeted at all older people, including those living in the community. Building on Dr. Beers's work, a Canadian review of inappropriate prescription practices in older persons was conducted in 1997.[18]

Capable: Under Ontario's *Health Care Consent Act*, "capable" means mentally capable.[21] A person is capable with respect to health care decision-making if they understand the information that is needed to make a decision and appreciate the consequences of the decision or lack of decision.[21] Capacity is issue or task specific.[20] A person's specific capacity to understand information and appreciate the decisions that must be made should be respected so that their abilities are recognized.[50] A person may be capable of making some health care decisions but incapable of others.[21] A person may also be capable of making a health care decision at one time but incapable at another time.[21] If a person is incapable of making a health care decision about a treatment or plan of treatment, a substitute decision-maker gives or refuses consent on the person's behalf.[21]

Caregiver: An unpaid person who provides care and support in a nonprofessional capacity, such as a parent, other family member, friend, or anyone else identified by the person taking medication. Other terms commonly used to describe this role include "care partner," "informal caregiver," "family caregiver," "carer," and "primary caregiver."

Deprescribing: The planned and supervised process of dose reduction or stopping a medication that might be causing harm or no longer be of benefit. Deprescribing is part of good prescribing—decrease when doses are too high, and stop medications that are no longer needed.[51]

Family: The people closest to a person in terms of knowledge, care, and affection; this may include biological family, family through marriage, or family of choice and friends. The person defines their family and who will be involved in their care.

Health care professionals: Regulated professionals, such as nurses, nurse practitioners, occupational therapists, pharmacists, physicians, physiotherapists, psychologists, social workers, and speech-language pathologists.

Health care providers: Health care professionals as well as people in unregulated professions, such as administrative staff, behavioural support workers, personal support workers, recreational staff, and spiritual care staff.

High-risk (high-alert) medications: Drugs with an increased risk of causing significant patient harm if they are used in error.[52]

Medication error: "Any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems, including prescribing, order communication, product labeling, packaging, and nomenclature, compounding, dispensing, distribution, administration, education, monitoring, and use."[53]

MedsCheck: The Ontario MedsCheck program, funded by the Ontario government, is a one-on-one interview between the pharmacist and the patient to review the patient's prescription and nonprescription medications.[54] The MedsCheck medication review encourages patients to better understand their medication therapy; it helps to ensure that medications are being taken as prescribed, and that patients are getting the most benefit from their medications.[54]

Multimorbidity: The presence of two or more chronic conditions at the same time.[41]

Near miss: An event that could have led to inappropriate medication use or patient harm but was intercepted before it reached the patient.[44]

Over-the-counter medication: Medications sold, supplied, or administered directly to a person without a prescription.

Polypharmacy: Often defined as the routine use of five or more medications.[2,8] This includes medications a person takes regularly or as needed (including prescription medications, over-the-counter medications, vitamins and minerals, herbal and natural

health products, traditional medicines, medication samples from prescribers, etc.). However, numerical definitions of polypharmacy do not necessarily account for specific concurrent conditions, and they make it difficult to assess the safety and appropriateness of medication therapy in the clinical setting.[8]

Prescriber: A regulated health professional who is authorized to prescribe medication (subject to any regulations, conditions, or limitations).[55] This includes physicians and surgeons, nurse practitioners, nurses, pharmacists, chiropodists (podiatrists), dentists, midwives, naturopaths, and optometrists.[55,56]

Primary care provider: A family doctor (also called a primary care physician) or nurse practitioner.

STOPP/START: Screening Tool of Older Persons' Prescriptions (STOPP) and Screening Tool to Alert to Right Treatment (START) are criteria used as tools for health care professionals to review potentially inappropriate medications in older adults. Using these tools has been endorsed as a best practice by some organizations.[57]

Substitute decision-maker: A person who makes care and treatment decision(s) on another person's behalf if or whenever that person becomes mentally incapable of making those decisions for themself.[20,21] Capacity is issue or task specific.[20] The substitute decision-maker makes a decision(s) based on their understanding of the person's wishes or, if these wishes are unknown or not applicable, makes choices that are consistent with the person's known values and beliefs and in the person's best interests.

Transitions in care: These occur when patients transfer within a health care setting (e.g., from the emergency department to an inpatient unit), between different care settings (e.g., hospital, primary care, long-term care, and home and community care), or between different health care providers during the course of an acute or chronic illness.

Appendix 4. Values and Guiding Principles

Values That Are the Foundation of This Quality Standard

This quality standard was created, and should be implemented, according to the Patient Declaration of Values for Ontario. This declaration "is a vision that articulates a path toward patient partnership across the health care system in Ontario. It describes a set of foundational principles that are considered from the perspective of Ontario patients, and serves as a guidance document for those involved in our health care system."

These values are:

- Respect and dignity
- Empathy and compassion
- Accountability
- Transparency
- Equity and engagement

A quality health system is one that provides good access, experience, and outcomes for all people in Ontario, no matter where they live, what they have, or who they are.

Guiding Principle

In addition to the above values, this quality standard is guided by the principle outlined below.

Acknowledging the Impact of Colonization

Health care providers should acknowledge and work toward addressing the historical and present-day impacts of colonization in the context of the lives of Indigenous Peoples throughout Canada. This work involves being sensitive to the impacts of intergenerational and present-day traumas and the physical, mental, emotional, and social harms experienced by Indigenous people, families, and communities, as well as recognizing their strength and resilience. This quality standard uses existing clinical practice guideline sources that may not include culturally relevant care or acknowledge traditional Indigenous beliefs, practices, and models of care.

Acknowledgements

Advisory Committee

Ontario Health thanks the following individuals for their generous, voluntary contributions of time and expertise to help create this quality standard:

References

(1)   Canadian Patient Safety Institute. Improving medication safety [Internet]. Edmonton (AB): The Institute; 2020 [cited 2020 Nov 18]. Available from: https://www.patientsafetyinstitute.ca/en/Topic/Pages/Improving-Medication-Safety.aspx

(2)   World Health Organization. Medication without harm—global patient safety challenge on medication safety. Geneva, Switzerland: The Organization; 2017.

(3)   Institute for Safe Medication Practices Canada. Ontario hospital critical incidents related to medications or IV fluids analysis report [Internet]. Toronto (ON): The Institute; 2013 [cited 2020 Nov 11]. Available from: https://www.ismp-canada.org/download/ocil/ON_Critical_Incidents_Analysis_Report_31May2013.pdf

(4)   National Institute for Health and Care Excellence. Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes [Internet]. Manchester (UK): The Institute; 2015 [cited 2020 Nov 11]. Available from: https://www.nice.org.uk/guidance/ng5

(5)   National Institute for Health and Care Excellence. Managing medicines in care homes [Internet]. London (UK): The Institute; 2014 [cited 2020 Oct 26]. Available from: https://www.nice.org.uk/guidance/sc1

(6)   Institute for Safe Medication Practices Canada. ISMP Canadian Safety Bulletin [Internet]. Toronto (ON): The Institute; 2020 [cited 2021 Jan 4]. Available from: https://www.ismp-canada.org/download/safetyBulletins/2020/ISMPCSB2020-i11-Medications-Reported-Harm.pdf

(7)   Ontario Health (Quality). Transitions between hospital and home [Internet]. Toronto (ON): Queen's Printer for Ontario; 2020 [cited 2020 Nov 11]. Available from: https://hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-transitions-between-hospital-and-home-quality-standard-en.pdf

(8)   Masnoon N, Shakib S, Kalisch-Ellett L, Caughey GE. What is polypharmacy? A systematic review of definitions. BMC Geriatr. 2017;17(1):230.

(9)   Canadian Institute for Health Information. OECD interactive tool: international comparisons—prescribing in primary care. Ottawa (ON): The Institute; 2017.

(10)   Canadian Institute for Health Information. Drug use among seniors on public drug programs in Canada, 2012. Ottawa (ON): The Institute; 2014.

(11)   Doran D, Hirdes JP, Blais R, Baker GR, Poss JW, Li X, et al. Adverse events associated with hospitalization or detected through the RAI-HC assessment among Canadian home care clients. Healthc Policy. 2013;9(1):76-88.

(12)   Doran DM, Hirdes JP, Blais R, Baker GR, Poss JW, Li X, et al. Adverse events among Ontario home care clients associated with emergency room visit or hospitalization: a retrospective cohort study. BMC Health Serv Res. 2013;13:227.

(13)   Office of the Auditor General of Ontario. 2019 annual report. Section 3.01: acute-care hospital patient safety and drug administration. Toronto (ON): The Office; 2019.

(14)   Long-Term Care Homes Public Inquiry. Public inquiry into the safety and security of residents in the long-term care homes system. Volume 1:

executive summary and consolidated recommendations [Internet]. Toronto (ON): The Inquiry; 2019 [cited 2020 Nov 11]. Available from: http://longtermcareinquiry.ca/wp-content/uploads/LTCI_Final_Report_Volume1_e.pdf

(15) Masotti P, McColl MA, Green M. Adverse events experienced by homecare patients: a scoping review of the literature. Int J Qual Health Care. 2010;22(2):115-25.

(16) Sears N, Baker GR, Barnsley J, Shortt S. The incidence of adverse events among home care patients. Int J Qual Health Care. 2013;25(1):16-28.

(17) Health Canada. Mandatory reporting of serious adverse drug reactions and medical device incidents by hospitals. Guidance document [Internet]. Ottawa (ON): Health Canada; 2019 [cited 2020 Nov 11]. Available from: https://www.canada.ca/content/dam/hc-sc/documents/services/drugs-health-products/medeffect-canada/adverse-reaction-reporting/drugs-devices/guidance/Mandatory-reporting-hospitals-eng.pdf

(18) Institute for Safe Medication Practices Canada. Safer medication use in older persons information page [Internet]. Toronto (ON): The Institute; 2020 [cited 2020 Nov 19]. Available from: https://www.ismp-canada.org/beers_list/#l=qone

(19) National Institute for Health and Clinical Excellence. Medicines adherence: involving patients in decisions about prescribed medicines and supporting adherence [Internet]. London (UK): The Institute; 2009 [cited 2020 Oct 26]. Available from: https://www.nice.org.uk/guidance/cg76

(20) Ontario Palliative Care Network. Key palliative care concepts and terms [Internet]. Toronto (ON): The Network; 2017 [updated 2017; cited 2020 Jan 4].

Available from: www.ontariopalliativecarenetwork.ca

(21) Health Care Consent Act, S.O. 1996, c. 2, Sched. A (1996).

(22) Health Quality Ontario. Palliative care: care for adults with a progressive, life-limiting illness [Internet]. Toronto (ON): Queen's Printer for Ontario; 2018. Available from: https://www.hqontario.ca/portals/0/documents/evidence/quality-standards/qs-palliative-care-clinical-guide-en.pdf

(23) National Institute for Health and Clinical Excellence. Medicines optimisation. Quality standard [Internet]. Manchester (UK): The Institute; 2016 [cited 2020 Nov 11]. Available from: https://www.nice.org.uk/guidance/qs120/resources/medicines-optimisation-pdf-75545351857861

(24) Wexler R. Six steps of shared decision-making [Internet]. Boston (MA): Informed Medical Decisions Foundation; 2012 [cited 2020 Nov 11]. Available from: http://resourcehub.practiceinnovationco.org/wp-content/uploads/2017/09/SixStepsSDM2_Skolnik.pdf

(25) National Health Service. NHSGGC mindful prescribing strategy--polypharmacy [Internet]. London (UK): National Health Service; 2014 [cited 2020 Nov 11]. Available from: https://ggcmedicines.org.uk/media/uploads/prescribing_resources/mindful_prescribing_strategy_-_1212.pdf

(26) National Institute for Health and Clinical Excellence. Appendix A1: Summary of evidence from surveillance. 2019 surveillance of medicines adherence (2009). NICE guideline CG76 [Internet]. London (UK): The Institute; 2019 [cited 2020 Nov 11]. Available from: https://www.nice.org.uk/guidance/ng5/evidence/appendix-a1-summary-of-

evidence-from-surveillance-medicines-adherence-pdf-6723926606

(27) Porterfield A, Engelbert K, Coustasse A. Electronic prescribing: improving the efficiency and accuracy of prescribing in the ambulatory care setting. Perspect Health Inf Manag. 2014;11(Spring):1g.

(28) Institute for Safe Medication Practices Canada. Electronic prescribing in primary care: effects on medication safety. ISMP Can Saf Bull. 2018;18(10).

(29) Stultz JS, Nahata MC. Computerized clinical decision support for medication prescribing and utilization in pediatrics. J Am Med Inform Assoc. 2012;19(6):942-53.

(30) Institute for Safe Medication Practices Canada. Medication safety self-assessment: focus on "Never events" in hospitals and ambulatory care centers [Internet]. Toronto (ON): The Institute; 2021 [cited 2021 Jan 29]. Available from: https://mssa.ismp-canada.org/never-events-hosp-amb

(31) Velo GP, Minuz P. Medication errors: prescribing faults and prescription errors. Br J Clin Pharmacol. 2009;67(6):624-8.

(32) Sackett DL, Rosenberg WMC, Gray JAM, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. BMJ. 1996;312(7023):71-2.

(33) Canadian Patient Safety Institute, Institute for Safe Medication Practices Canada. Medication reconciliation in acute care--getting started kit [Internet]. Edmonton (AB): The Institutes; 2017 [cited 2020 Nov 18]. Available from: https://www.ismp-canada.org/download/MedRec/MedRec-AcuteCare-GSK-EN.pdf

(34) Clyne W, Blenkinsopp A, Seal R. A guide to medication review. [Internet]. Liverpool (UK): National Prescribing Centre; 2008 [cited 2021 Feb 4]. Available from: https://www.webarchive.org.uk/wayback/archive/20140627111246/http://ww

w.npc.nhs.uk/review_medicines/intro/index.php

(35) Royal Pharmaceutical Society of Great Britain. Polypharmacy: getting our medicines right [Internet]. London (UK): The Society; 2021 [cited 2021 Jan 27]. Available from: https://www.rpharms.com/recognition/setting-professional-standards/polypharmacy-getting-our-medicines-right

(36) Institute for Safe Medication Practices Canada. ISMP list of high-alert medications in acute care settings [Internet]. Toronto (ON): The Institute; 2018 [cited 2021 Jan 27]. Available from: https://www.ismp.org/sites/default/files/attachments/2018-10/highAlert2018new-Oct2018-v1.pdf

(37) Institute for Safe Medication Practices Canada. ISMP list of high-alert medication in the community/ambulatory healthcare [Internet]. Toronto (ON): The Institute; 2011 [cited 2021 Jan 27]. Available from: https://www.ismp.org/sites/default/files/attachments/2017-11/highAlert-community.pdf

(38) Institute for Safe Medication Practices Canada. ISMP list of high-alert medications in long-term care settings [Internet]. Toronto (ON): The Institute; 2016 [cited 2021 Jan 27]. Available from: https://www.ismp.org/sites/default/files/attachments/2017-11/LTC-High-Alert-List.pdf

(39) World Health Organization. Medication safety in polypharmacy. Geneva, Switzerland: The Organization; 2019.

(40) Duerden M, Avery T, Payne R. Polypharmacy and medicines optimisation: making it safe and sound. London (UK): The King's Fund; 2013.

(41) Sakib MN, Shooshtari S, St John P, Menec V. The prevalence of

multimorbidity and associations with lifestyle factors among middle-aged Canadians: an analysis of Canadian Longitudinal Study on Aging data. BMC Public Health. 2019;19(1):243.

(42)   Morgan SG, Hunt J, Rioux J, Proulx J, Weymann D, Tannenbaum C. Frequency and cost of potentially inappropriate prescribing for older adults: a cross-sectional study. CMAJ Open. 2016;4(2):E346-51.

(43)   Canadian Medication Incident Reporting and Prevention System. CMIRPS core data set for individual practitioner reporting [Internet]. Toronto (ON): Institute for Safe Medication Practices Canada; 2006 [cited 2020 Nov 11]. Available from: https://www.ismp-canada.org/download/CMIRPS%20Core%20Data%20Set%20for%20Individual%20Practitioner%20Reporting%20April%202006%20ISMP%20Canada.pdf

(44)   Ontario College of Pharmacists. AIMS FAQ [Internet]. Toronto (ON): The College; 2021 [cited 2021 Jan 7]. Available from: https://www.ocpinfo.com/regulations-standards/aims-assurance-and-improvement-in-medication-safety/medicationsafetyfaq/

(45)   Canadian Medication Incident Reporting and Prevention System (CMIRPS) [Internet]. Toronto (ON): Institute for Safe Medication Practices Canada; 2020 [cited 2020 Dec 12]. Available from: https://www.ismp-canada.org/cmirps/

(46)   Canadian Patient Safety Institute. Medication incident reporting in Canada: a white paper [Internet]. Edmonton (AB): The Institute; 2014 [cited 2020 Nov 11]. Available from: https://www.patientsafetyinstitute.ca/en/toolsResources/Documents/Consortium%20Deliverables/Medication%20Incident%20Reporting%20in%20Canada_A

%20White%20Paper%20Executive%20Summary.pdf

(47)   Incident Analysis Collaborating Parties. Canadian incident analysis framework [Internet]. Edmonton (AB): Canadian Patient Safety Institute; 2012 [cited 2021 Feb 1]. Available from: https://www.patientsafetyinstitute.ca/en/toolsResources/IncidentAnalysis/Documents/Canadian%20Incident%20Analysis%20Framework.PDF

(48)   Ministry of Health. Health care experience survey [Internet]. Toronto (ON): Queen's Printer for Ontario; 2020 [cited 2020 Nov 19]. Available from: https://www.ontario.ca/data/health-careexperience-survey-hces

(49)   Institute for Safe Medication Practices Canada. Medication error reporting [Internet]. Toronto (ON): The Institute; 2021 [cited 2021 Jan 7]. Available from: https://www.mederror.ca/

(50)   Wahl J. Consent, capacity and substitute decision-making: the basics [Internet]. Toronto (ON): Advocacy Center for the Elderly; 2009 [cited 2017 Oct]. Available from: http://www.advocacycentreelderly.org/appimages/file/Consent%20and%20Capacity%20Basics%20-%202009.pdf

(51)   Bruyère Research Institute. What is deprescribing? [Internet]. Ottawa (ON): The Institute; 2021 [cited 2021 Feb 19]. Available from: https://deprescribing.org/what-is-deprescribing/

(52)   Institute for Safe Medication Practices Canada. Definitions of terms [Internet]. Toronto (ON): The Institute; 2020 [cited 2020 Dec 18]. Available from: https://www.ismp-canada.org/definitions.htm

(53)   National Coordinating Council for Medication Error Reporting and Prevention. About medication errors [Internet]. The Council; 2021 [cited 2021 Jan 19]. Available from:

https://www.nccmerp.org/about-medication-errors

(54) Ontario Ministry of Health and Long-Term Care. MedsCheck [Internet]. Toronto (ON): Queen's Printer for Ontario; 2016 [cited 2021 Feb 2]. Available from: http://www.health.gov.on.ca/en/pro/programs/drugs/medscheck/medscheck_original.aspx

(55) Ontario College of Pharmacists. Who can prescribe drugs in Ontario? [Internet]. Toronto (ON): The College; 2017 [cited 2020 Nov 19]. Available from: https://www.ocpinfo.com/library/pharmacy-

connection/download/PharmacyConnection_Summer2017_Prescribe_Drugs_Ontario.pdf

(56) Regulated Health Professions Statute Law Amendment Act, 2009, S.O. 2009, c. 26, Bill 179 [Internet]. Toronto (ON): Government of Ontario; 2009 [cited 2020 Nov 19]. Available from: https://www.ontario.ca/laws/statute/s09026

(57) O'Mahony D, O'Sullivan D, Byrne S, O'Connor MN, Ryan C, Gallagher P. STOPP/START criteria for potentially inappropriate prescribing in older people: version 2. Age Ageing. 2015;44(2):213-8.

About Us

Ontario Health is an agency of the Government of Ontario. Our mandate is to connect and coordinate our province's health care system in ways that have not been done before to help ensure that Ontarians receive the best possible care. We work to support better health outcomes, patient experiences, provider experiences and value for money spent.

For more information: ontariohealth.ca/our-team

Quality Standards

Looking for more information?

Visit **hqontario.ca** or contact us at **qualitystandards@ontariohealth.ca** if you have any questions or feedback about this quality standard.

Ontario Health
130 Bloor Street West, 10th Floor
Toronto, Ontario
M5S 1N5

Tel: 416-323-6868
Toll Free: 1-866-623-6868
Fax: 416-323-9261
Email: qualitystandards@ontariohealth.ca
Website: hqontario.ca

Ontario Health