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Quality Indicators for Pharmacy

A summary report for community pharmacy

June 2019

Contents

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Name	Affiliations
Angie Wong (Part A RPh)	Drug Programs Policy and Strategy, Ministry of Health and Long-Term Care
Bill Holling	Patient partner
Harvey Naglie	Patient partner
Imtiaz Daniel	Ontario Hospital Association
Jennifer Bridge	Health Analytics and Information Branch, Ministry of Health and Long-Term Care
Jonathan Lam (co-chair)	Health Quality Ontario
Kednapa Thavorn	Ottawa Hospital Research Institute
Leila Ryan	Patient partner
Lisa Dolovich (Part A RPh)	University of Toronto
Margo Orchard (co-chair)	Ontario College of Pharmacists
Michele Bender BSc Pharm	Canadian Institute for Health Information
Mike Cavanagh (Part A RPh)	Ontario Pharmacists Association
Mina Tadrous (Part A RPh)	Ontario Drug Policy Research Network
Olavo Fernandes (Part A RPh)	University Health Network
Sandra Hanna (Part A RPh)	Neighbourhood Pharmacy Association of Canada
Sara Guilcher	University of Toronto
Stephanie Yost (Smith) (Part A RPh)	Community pharmacist
Thomas Custers	Health Workforce Planning and Regulatory Affairs, Ministry of Health and Long-Term Care

Project team:

Anisa Shivji	Ontario College of Pharmacists
Ivana McVety	Health Quality Ontario
Karin Taylor	Ontario College of Pharmacists
Michael Beckett	Health Quality Ontario
Tommy Tam	Health Quality Ontario

Executive Summary

Background

Pharmacy professionals play an integral role in the health system. In collaboration with other health care professionals, pharmacy professionals provide patients with quality and safe care while contributing to solutions to address common quality challenges throughout our health system. There is currently no systemic way to measure the quality of pharmacy care, or its impact on the health system.

Objectives

To address the gaps in quality measurement, the Ontario College of Pharmacists (the College), in partnership with Health Quality Ontario (HQO), established a set of quality indicators for community pharmacy, in collaboration with patients, the pharmacy sector, and other health system partners. HQO, as Ontario's advisor on quality, uses indicators to track the quality of Ontario's health system and has established a process and criteria for the selection of indicators for measuring health system performance and outcomes [1]. The College serves as the regulating body for the pharmacy profession with a mandate to serve and protect the public. To do this, the College needs to understand the impact of pharmacy practice on patient outcomes and ensure the pharmacy system is performing optimally to commit to improving these outcomes. To better assess the impact of pharmacy practice on health outcomes, the College and HQO collaborated, through an Expert Panel, to establish a set of quality indicators for pharmacy care in Ontario. This report describes the process to select quality and performance indicators for community pharmacy, which can be expanded to other practice settings within the pharmacy sector.

Methods

Prior to the indicator selection process, the College and HQO hosted a quality Roundtable [2] of relevant stakeholders. This Roundtable, grounded by HQO's Quality Matters Framework [3] and the Quadruple Aim [4], confirmed the overarching goals for quality indicators for pharmacy, established the measurement areas for indicator selection, and identified approaches for how indicators can be used. Next, HQO and the College established an Expert Panel comprised of patients, practicing pharmacists, researchers, government and associations. This Expert Panel used a modified Delphi process (including independent rating of indicators and consensus discussions), complemented by feedback from patients and pharmacy professionals, to select a set of quality indicators for public reporting. The Expert Panel also discussed implementation considerations and recommended areas for future work and data advancement.

Results

The selected indicators, by measurement area:

Patient/Caregiver Experience and Outcomes

1. My pharmacist helped me understand why I am taking each of my medications
2. My pharmacist made sure I understood how to take my medication properly
3. My pharmacist made sure I understood what results I might expect from my medication, including any side effects or drug/food interactions that may occur
4. My pharmacist helped me understand how to know if my medication is working

Appropriateness of Dispensed Medications

5. Percentage of opioid-naïve patients who were dispensed an initial dose greater than 90 mg morphine equivalents per day

Medication-Related Hospital Visits

6. Hospital visits for opioid poisonings among patients that are actively treated with an opioid prescription

Transitions of Care

7. Percentage of people who have had a medication review within 14 days of discharge home from hospital

Provider Experience and Engagement

The Expert Panel recommends this as an area for further review and refinement before reporting publicly

***NB**: the technical specifications and definitions for the above indicators will follow.*

Conclusion

The Expert Panel has identified seven quality indicators for community pharmacy, reflecting the perspectives of patients, caregivers, community pharmacists, health care providers and experts. In anticipation of future development of indicators that measure provider experience and engagement, the indicators are a reflection of the Quadruple Aim framework and span HQO's dimensions of quality. The indicators are expected to evolve over time. This set is a first step toward understanding the quality of care provided by community pharmacy professionals in Ontario.

Further data advancement and measurement development are recommended to ensure that public reporting on community pharmacy remains important and relevant to patients, caregivers, the public and pharmacy professionals. Indicator development is ongoing in areas such as provider experience and engagement, medication-related hospital visits, and continuing reviews of the evidence related to all quality indicators as new evidence emerges.

Introduction

Background

Pharmacy professionals, in collaboration with other health care professionals, play an active role in providing quality and safe care to patients while contributing to solutions to address common quality challenges experienced throughout our health system. Currently, there is no systemic way to measure patient outcomes associated with pharmacy care, or its impact on the health system.

Historically, the quality of pharmacists' care has been evaluated through the lens of compliance with pharmacy regulations [5], reporting systems for pharmacy errors [6] and pharmacy audits [7]. Several countries have recently developed indicators that aim to measure the quality of pharmacists' care [8], but these are highly focused on process measures [9].

To better assess the quality of community pharmacy practice and its impact on health outcomes, the Ontario College of Pharmacists (the College), as the regulating body for the pharmacy profession, and Health Quality Ontario (HQO), as Ontario's advisor on quality, collaborated to establish a set of quality indicators for pharmacy care in Ontario. To support its mandate to serve and protect the public, the College has a duty to report publicly on the quality of care provided by pharmacy professionals and is responsible for assuring continuous quality improvement within the professions of pharmacy. Establishing a set of quality indicators will enable the College to use data to make evidence-informed decisions and promote a better understanding of the quality of pharmacy care and the impact of pharmacy on patient outcomes.

Laying the Foundation

Before the start of the indicator selection process, the College and HQO hosted a Roundtable [10] of relevant stakeholders, to confirm the overarching goals for quality indicators for pharmacy, establish the measurement areas for indicator selection, and to discuss approaches for how indicators can be used (see the Synopsis document for a summary of the Roundtable in more detail). Health Quality Ontario's Quality Matters Framework [11] and the Quadruple Aim framework [12] were used as a roadmap for quality to help facilitate the Roundtable discussion.

The Roundtable participants reached a consensus on four overarching **goals to establish quality indicators for pharmacy:**

1. Measuring and reporting on quality of pharmacy care in a way that is important to patients
2. Measuring areas where pharmacy can have an impact, with a focus on broader health system priorities
3. Aligning with HQO's quality domains and the Quadruple Aim
4. Using the indicators to support a continued culture of quality

The Roundtable also confirmed five **key measurement areas**:

1. **Patient/caregiver experience and outcomes – ensuring the patient voice is well represented:** Insight on quality of care from the lens of the patient/caregiver was highlighted as extremely important to ensure patient-centred care and increased transparency. Patient reported experience measures, or PREMs (i.e., satisfaction with care provided), and patient reported outcome measures, or PROMs (i.e., measuring

outcomes such as the efficacy of medication therapy), were identified as important areas to measure and report.

2. **Appropriateness of dispensed medications:** Given that pharmacists assess prescriptions for appropriateness in addition to accuracy, measures related to the appropriateness of dispensed medications were identified as an important consideration. Pharmacy faces several quality challenges in areas such as polypharmacy in older adults, antimicrobial resistance, and the opioid crisis. The Roundtable agreed that defining measures for these areas of focus would help identify clear expectations of pharmacists in assessing prescriptions for appropriateness and support these quality challenges.

3. **Medication-related hospital visits:** About 1 in 9 hospitalizations are due to medications, many of which are preventable [13]. Given the responsibility of pharmacy professionals in medication management and the prevention of medication-related incidents, hospital visits (emergency department visits and admissions) related to medication-related issues was flagged as an important area to measure.

4. **Transitions of care – establishing a shared accountability of all health care professionals involved in transitions of care**: Determining the accountability of each health care player in patients' transitions of care was identified as a common challenge in the health system. The Roundtable supported gathering data to identify gaps in care as a step toward improving transitions and preventing adverse events associated with them. Some enablers that were described as ways to measure this include medication reconciliation, measuring readmission rates, and primary care visits after discharge.

5. **Provider experience and engagement – reflecting provider satisfaction and wellbeing to optimize health system performance**: The Institute for Healthcare Improvement's Quadruple Aim framework includes provider experience to reflect the importance of provider satisfaction and wellbeing in optimizing health system performance [14]. The Roundtable identified measuring pharmacy professional experience as an important area to measure, to encourage provider engagement, collaboration and trust in the function of the health system.

Although pharmacy professionals work in a variety of settings, including community pharmacy, hospitals, long-term care homes, and primary care, stakeholders at the Roundtable recommended community pharmacy as the initial focus of the indicator development. Important work has already been done to establish indicators in hospital pharmacy, including a recent report published by the Canadian Society of Hospital Pharmacists [15]. In contrast, few – if any – indicators exist that measure quality outcomes in community pharmacy. It is expected that this work will expand to other practice settings in the future.

The Roundtable also confirmed a set of indicator selection criteria aligned with those outlined by HQO (see Appendix A: Indicator Selection Criteria). Health Quality Ontario has used these same criteria to select indicators for public reporting in a number of sectors, including long-term care, home care, and patient safety. After reviewing the existing principles, the Roundtable determined that all principles were important and relevant to pharmacy practice, with a few additional considerations. Finally, the Roundtable identified guiding principles to consider as indicators get applied in practice. These included ensuring an adequate focus on being able to access high-quality data and infrastructure support, analysis and sharing of indicator data, developing capacity for quality improvement in pharmacy practice, and open sharing of system-

wide indicators. The principles established in the Roundtable were used to guide the indicator selection process and will support the implementation of the indicators.

Audience, Purpose and Scope

Health system quality indicators can be used for a variety of purposes including quality improvement, performance measurement, monitoring, evaluation, quality assurance, and public reporting. The Roundtable noted that the first set of pharmacy indicators should be selected for public reporting and quality improvement, building the foundation for a culture of quality within the profession (not for punitive purposes or determining reimbursement). The Expert Panel confirmed that the initial focus of this work would be the selection of indicators for public reporting. At the same time, it was agreed that the selected indicators would also lend themselves to quality improvement activities in pharmacy, with a future goal of sharing pharmacy-level data directly with pharmacy professionals.

Conscious of the volume of indicators already in the health system and the dangers of over-measurement [16], the Roundtable recognized the importance of selecting a focused set of indicators. This small set of indicators would also need to be meaningful to the general public and provide transparency on the quality of community pharmacy care for the public, stakeholders and patients.

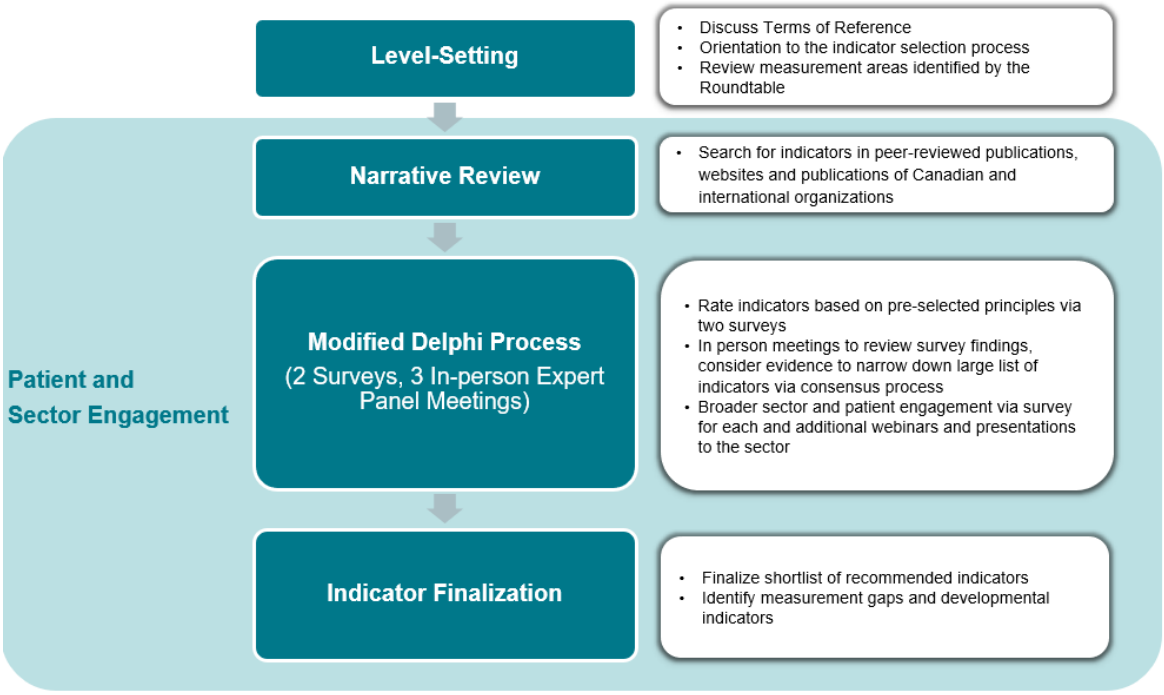
The scope of this report is on community pharmacy, but the indicators can be expanded to other practice settings within the pharmacy sector.

Methodology

The College and HQO established an Expert Panel in the Fall of 2018 tasked with selecting a small set of quality indicators for pharmacy. The Expert Panel used a modified Delphi process, including independent rating of indicators and consensus discussions [17]. This process has been used in similar indicator reviews in independent studies (e.g., key performance indicators for hospital pharmacists [18]) and in other health sectors by HQO (e.g., home care [19], long-term care [20], patient safety [21]).

The Expert Panel consisted of 16 members, including patient partners, community pharmacists, researchers, policymakers, data holders and associations. The process to identify the indicators is outlined below and summarized in Figure 1.

Figure 1. Overview of the indicator selection process



Level-Setting

Before embarking on the work, an orientation meeting was held for the Expert Panel, to provide members with information about the objectives and an overview of the indicator selection process, the indicator selection criteria, and the five measurement areas identified by the Roundtable.

Narrative Review

To develop an initial comprehensive list of community pharmacy quality indicators, HQO and the College conducted an environmental scan of the academic and grey literature within Ontario and other jurisdictions, and of organizations and other sources that report pharmacy quality indicators. The initial list was then filtered to focus on community pharmacy indicators related to

one of the five measurement areas and were outcome-related measures. As a result of this review, 60 indicators were presented to the Expert Panel for consideration.

Patient and Sector Engagement

While the members of the Expert Panel represented diverse views, experiences and expertise, it was also important to consider the perspectives of the broader patient and community pharmacy sector audience. To do this, HQO and the College sought input from other patients and sector stakeholders and presented the results of these engagement activities back to the Expert Panel for consideration.

An online survey was sent to the patients in HQO's Patient and Family Advisory Council to gather feedback on key themes and the 16 shortlisted indicators once the original list of 60 indicators had been reduced at the end of the second Expert Panel meeting. Patients were given the opportunity to rank the indicators based on their importance and provide written feedback about the indicators.

To ensure the selected indicators were important and relevant to the pharmacy sector, a variety of pharmacy sector engagement sessions took place with frontline pharmacy professionals (including pharmacy technicians, pharmacists, and students) as well as corporate sector leaders. The sector engagement sessions took the form of interactive webinars, teleconferences, in-person meetings, and an open request-for-feedback survey on the 16 shortlisted indicators. This request-for-feedback survey drew responses from over 100 pharmacy professionals.

Modified Delphi Process

The modified Delphi process consisted of two online surveys, where the Expert Panel independently rated indicators, and three in-person meetings to build consensus on a small set of indicators to measure quality of community pharmacy care.

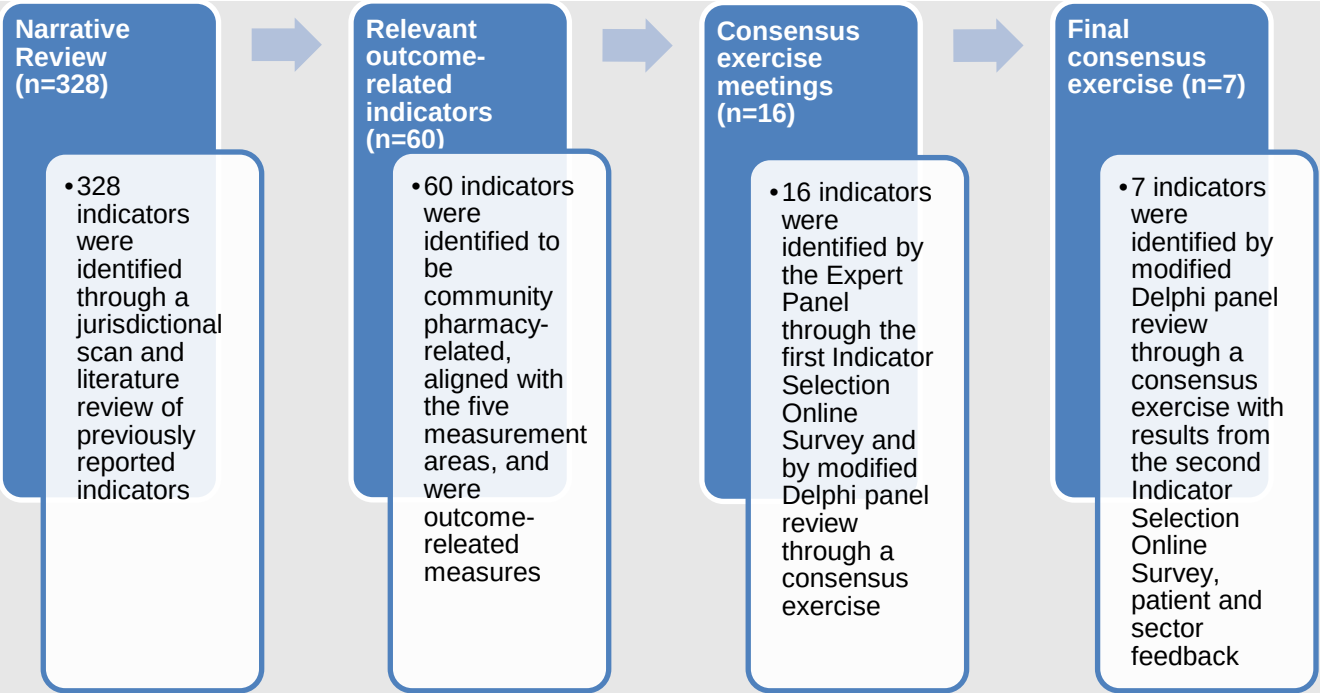
Prior to the first panel meeting, the Expert Panel was asked to participate in an online survey. The survey asked the panel members to independently rate the initial list of 60 indicators identified in the narrative review according to three indicator selection criteria: important/relevant to pharmacy, actionable, and interpretable. They also had the opportunity to provide new indicators for consideration. Based on past input from the patient partners in the Expert Panel, HQO sent a modified version of the survey to patient partners that focused on the importance/relevance to the pharmacy sector and excluded the other two criteria.

The College and HQO convened two in-person meetings to discuss the survey results. These discussions were informed by evidence summaries on selected measurement areas. At the end of the second meeting, the Expert Panel reduced the number of indicators to a shortlist of 16 (see Figure 2). A second online survey was sent to the Expert Panel to independently rate the 16 indicators according to the same three criteria in the first survey. As in the first survey, the patient partners received a modified version of the second survey. The results of the second survey, along with the results from the patient and pharmacy sector engagement exercise as described above, were brought to the Expert Panel for final deliberation. After review of the results and consensus discussions, the Expert Panel finalized a small set of quality indicators for public reporting in community pharmacy. The Expert Panel also discussed crucial measurement gaps and recommended areas for data and measurement advancement for community pharmacy.

Results

The Community Pharmacy Indicator Selection began with 328 indicators identified through the narrative review, and was narrowed down to a final set of seven indicators. Figure 2 summarizes the indicator selection process and the number of indicators eliminated in each phase.

Figure 2. Indicator selection by each phase



The seven indicators are outlined by measurement area in Table 1 below, and a summary of the rationale and data considerations follows.

Table 1: Final set of indicators

Measurement area	Quality Indicators for Pharmacy
Patient/Caregiver Experience and Outcomes	1. My pharmacist helped me understand why I am taking each of my medications 2. My pharmacist made sure I understood how to take my medication properly 3. My pharmacist made sure I understood what results I might expect from my medication, including any side effects or drug/food interactions that may occur 4. My pharmacist helped me understand how to know if my medication is working
Appropriateness of Dispensed Medications	5. Percentage of opioid-naïve patients who were dispensed an initial dose greater than 90 mg morphine equivalents per day
Medication-Related Hospital Visits	6. Hospital visits for opioid poisonings among patients that are actively treated with an opioid prescription
Transitions of Care	7. Percentage of people who have had a medication review within 14 days of discharge home from hospital
Provider Experience and Engagement	*The Expert Panel recommends this as an area for further review and refinement before publicly reporting the provider experience and engagement indicators*

Measurement Area 1: Patient/Caregiver Experience and Outcomes

This measurement area provides insight into the quality of pharmacy care from the lens of the patient or caregiver. Patient reported experience measures, or PREMs, are collected directly from patients and speak to their perceptions of their experience of care. Four PREMs indicators were identified for this measurement area, each of which reflects key roles of a pharmacist to support patients in their ability to self-manage their medication use:

- *Confirming the indication*: **My pharmacist helped me understand why I am taking each of my medications**
- *Supporting appropriate administration of medication*: **My pharmacist made sure I understood how to take my medication properly**
- *Ensuring the safety of medication (including side effects):* **My pharmacist made sure I understood what results I might expect from my medication, including any side effects or drug/food interactions that may occur**
- *Ensuring the expected efficacy*: **My pharmacist helped me understand how to know if my medication is working**

These four patient/caregiver experience indicators were extracted from two sources: a survey from Alberta [22] and a survey development initiative in the U.S. [23].

Another area identified as important by both the Roundtable and Expert Panel members was patient reported outcome measures, or PROMs. These are measures of a patient's self-

reported health status. However, the literature currently does not have standardized or validated instruments for PROMs that are widely used in community pharmacy.

Next steps:

Ways to gather data on these patient reported experience measures will need to be confirmed. Discussions during sector engagement webinars suggested that some Ontario community pharmacies may be offering patient experience questionnaires via independent surveys. However, our narrative review suggested that at this time, there's no standardized patient/caregiver experience and outcomes survey available across all community pharmacies in Ontario that covers these four questions.

Advancement work including indicator definition and approaches to data collection will also be required to begin to measure PROMs in pharmacy.

Measurement Area 2: Appropriateness of Dispensed Medications

This measurement area highlights the pharmacists' role in evaluating prescriptions for appropriateness – a vital component of the community pharmacist's work. According to the National Association of Pharmacy Regulatory Authorities (NAPRA) Model Standards for Canadian Pharmacists, pharmacists must review each prescription for a medication that a patient is taking to ensure that it is the most appropriate for the specific patient [24]. The community pharmacist is the final gatekeeper before the patient receives their medication and must ensure that prescriptions are not dispensed unless appropriate to optimize patient outcomes.

Given that this measurement area is quite broad, the Expert Panel decided to focus on three key quality challenges facing the health system today: the opioid crisis, antimicrobial resistance, and chronic disease management.

The indicator selected by the Expert Panel for this measurement area is: **Percentage of opioid-naïve patients who were dispensed an initial dose greater than 90 mg morphine equivalents per day**.

This indicator was drawn from indicators outlined in the HQO quality standards for Opioid Prescribing for Acute Pain [25] and Opioid Prescribing for Chronic Pain [26]. Opioids can be very effective for managing pain, but if not prescribed in an appropriate manner and at an appropriate dose, can present a considerable risk of harm. Starting a patient on a high dose of opioids (greater than 90 mg morphine equivalents) can increase the risk of overdose and is therefore rarely indicated, particularly in opioid-naïve patients [27]. Pharmacy professionals play an important role in the procurement of opioids and in ensuring opioid prescriptions dispensed are appropriate and necessary. Pharmacists are expected to be aware of tools and resources for morphine equivalent dosing and tapering and collaborate with providers and patients to prevent the dispensing of inappropriate high-dose new opioid prescriptions.

Next steps:

Data for this indicator is readily available using data from the Narcotics Monitoring System (NMS).

As there are limited measures within this topic area that could be adopted by community pharmacists, future indicator development work is recommended for the topic areas of

antimicrobial resistance, and chronic disease (e.g., COPD and diabetes management), to better reflect the role of pharmacy in managing these conditions.

Measurement Area 3: Medication-Related Hospital Visits

Medication-related hospital and emergency department visits account for up to a quarter of total hospital visits in Canada [28]. Of these medication related hospital visits, many of them could be prevented, and optimal medication management is an essential component of the practice of community pharmacy. Pharmacy's role in medication management is an opportunity to reduce the number of medication-related emergency department visits and hospitalizations. However, the existing hospital coding systems do not have an effective way to measure and assess all medication-related events. One temporary alternative is to focus on opioid-related hospital visit data, as they are well-coded and timely.

The indicator that was selected by the Expert Panel for this measurement area is: **Hospital visits for opioid poisonings among patients that are actively treated with an opioid prescription**.

This indicator was selected because it is an outcome indicator that pharmacists, in collaboration with their health system partners, can impact.

Next steps:

This indicator can be measured by linking data from the Canadian Institute for Health Information and Discharge Abstract Database (CIHI-DAD), National Ambulatory Care Reporting System (NACRS) and NMS.

The current indicator focuses only on opioids. Further measurement advancement work is needed to better define hospital visits related to potentially preventable medication-related events more broadly.

Measurement Area 4: Transitions of Care

This measurement area emphasizes the importance of establishing a shared accountability of all health care professionals that can impact a patient's transitions of care. Transitions of care are a common challenge throughout the healthcare system, and a health system priority provincially. The Ministry of Health and Long Term Care (MOHLTC) recently announced an update to the MedsCheck Program to focus on patients' transitions between care settings [29]. The first step in addressing this challenge is to identify and measure the gaps in quality. Once these gaps are identified, the health system can collaboratively move toward bridging them.

The indicator that was selected by the Expert Panel for this measurement area is: **Percentage of people who have had a medication review within 14 days of discharge home from hospital.**

Coordination and collaboration among the various health care professionals involved in transitions of care is vital to ensure seamless and efficient communication among those in the circle of care. Lack of coordination and poor communication at transitions can often lead to worsening of clinical status and hospital readmissions. Community pharmacy professionals play a vital role in ensuring patients discharged from hospital to home understand their medication regimen and any changes that might have taken place during the transition. A medication review helps provide an updated medication list and answers any questions from the patient or

caregiver. Addressing gaps in information is crucial to prevent potential drug-related problems that could lead to further emergency department visits and hospital readmissions.

Next steps:

This indicator can potentially be measured with data sources from CIHI-DAD, Ontario Drug Benefit (ODB), Ontario Health Insurance Plan (OHIP) and the Ministry of Health and Long-Term Care (MOHLTC).

Measurement Area 5: Provider Experience and Engagement [for further development]

Provider experience and engagement impacts the performance of the health system, patient care and patient outcomes. In the broader health care system, there is a well-established link between provider experience and engagement and quality of care. Many studies of burnout among clinicians and staff in health care have shown the negative impacts on patient care and outcomes. For example, studies demonstrate that physician burnout is associated with an increased risk of patient safety incidents and poorer quality of care due to low professionalism [30], dissatisfied physicians are more likely to prescribe inappropriate medications, which can result in expensive complications [31], patient safety is threatened by nurse dissatisfaction, and many nurses report that their workload causes them to miss important changes in their patients' condition [32], and physician and care team burnout may contribute to overuse of resources and thereby increase costs of care [33, 34,35].

The evidence indicates strong connections between provider engagement indicators and better patient health outcomes, but there is currently limited evidence specific to pharmacist engagement and better health outcomes. Provider experience and engagement is a vital area to measure, however, there are currently no pharmacy-specific measures available. Since evidence-based measures do not currently exist in pharmacy, public reporting is not currently feasible. However, provider experience and engagement is an important area and the College is committed to working with stakeholders to pursue measurement in this area in the future.

For information on how pharmacists play a role in the set of quality indicators for pharmacy, please refer to the Quality Indicators Leaflet.

Implementation Considerations

Since quality indicators are relatively new territory for community pharmacy in Ontario, engagement of key stakeholders, including patients, frontline pharmacy professionals, corporate pharmacy sector leaders, and pharmacy data experts, will be vital for discussions related to indicator implementation.

The following considerations, introduced at the Roundtable, will need to be addressed when implementing the new pharmacy indicators.

Data to populate the indicators:

Patient data are housed in multiple, siloed datasets, limiting pharmacy access to a patient's medical history. For pharmacy professionals to have a greater impact on health outcomes, the full picture of a patient's medical status and history is required. So, as this work moves forward, emphasis should be placed on opportunities to establish data linkages, more comprehensive access to datasets, and infrastructure that can provide access to high-quality data.

Reporting:

Once indicators have been analyzed, several considerations need to be made when reporting the indicators publicly and/or directly to pharmacies. Pharmacy sector engagement sessions during the indicator selection process introduced a variety of implementation considerations including the importance of viewing the indicator data in context and recognizing how differing patient populations affect indicator values.

In addition, leveraging existing capacity of organizations currently reporting on health system indicators should be considered, to avoid duplication and encourage alignment.

Capacity for quality improvement:

Education, training and tools are needed to support the use and interpretation of data generated by the new indicators.

Conclusions

A set of seven quality indicators for pharmacy have been identified, reflecting the perspectives of patients, caregivers, community pharmacists, health care providers and experts. In anticipation of future development of indicators that measure provider experience and engagement, the selected indicators are reflective of the Quadruple Aim framework and span HQO's dimensions of quality. These quality indicators will support a better understanding of the quality of pharmacy care.

Next Steps

Principles identified from the Roundtable will be used to guide indicator implementation. The goal is to use these indicators initially for public reporting, at an aggregate provincial and regional level, and later for quality improvement. Technical working groups will be convened to develop technical specifications for the selected indicators.

Future considerations will include reporting to pharmacies and pharmacy professionals, for the purposes of quality improvement. As this work moves forward, it will be vital to continue to engage pharmacy professionals and the sector at large. To ensure the indicators remain relevant over time, they will continue to be evaluated and updated as necessary.

Further data advancement and measurement development is recommended to ensure public reporting on community pharmacy remains relevant to patients, caregivers, public and pharmacy professionals. Several areas for indicator development have been identified and should be pursued, along with continuing reviews of the evidence related to all the indicators.

Appendix A: Indicator Selection Criteria

Criteria	Comments	Phase(s) in the Indicator Selection Process
Evidence-Based	There is good/strong evidence to support the process or evidence of the importance of the outcome. The Roundtable participants stressed the need for indicators with real-world applicability and impact on outcomes, not just academic evidence.	List of potential indicators as determined by HQO and the College
Important/ Relevant to Pharmacy	The indicator should reflect a quality issue that is important and relevant to patients, healthcare professionals, system leaders, and policymakers. It should be pharmacy-centric, with a focus on community pharmacy. The indicator should also be durable, and relevant in the future, given the evolving role and model of pharmacy.	Expert Panel rating, consensus meetings, patient and sector engagement
Actionable	The indicator will likely alter behaviour of healthcare providers, inform and influence public policy or funding, and/or increase general understanding by the public in order to improve quality of care and population health. It is important that pharmacy professionals (whether solely or in collaboration) are able to impact and influence the selected indicator.	Expert Panel rating, consensus meetings, patient and sector engagement
Interpretable	The indicator (as defined) is clear and interpretable to a range of audiences and the results of the indicator are comparable and easy to understand including what constitutes improved performance (clear directionality)	Expert Panel rating, consensus meetings, patient and sector engagement
Measurable	There are available data sources that could potentially be used to measure the indicator. However, lack of current capability to measure should not be a restriction during the indicator selection and development process.	Sector engagement and consensus meetings
Feasible	Indicator is calculable, and data are timely. While it is important that indicators be pharmacy-centric, in some cases, for an outcome indicator, it might not be feasible to isolate the impact of the pharmacy professionals' efforts from that of the interprofessional team.	Sector engagement
Data quality (including validity, reliability and timeliness)	Indicators to be explored in detail, including the technical definition, calculation methodology, validity and reliability of measurement and timeliness of data. If possible, baseline data analysis is conducted to understand: • Limitations and caveats of the indicator • Current performance including variation over time, by region and at the provider level	Indicator finalization

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