



Canadian Consensus on Clinical Pharmacy Key Performance Indicators: Quick Reference Guide

MAKE IT COUNT!
Advancing practice to improve
patient outcomes

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The cpKPIs and this guide will be reviewed periodically, and suggestions for their improvement are welcomed. Where more than one version of this guide exists, the most recent version replaces any former versions. Therefore, users of this guide are advised to check CSHP's website for the most recent version of the cpKPI guide.

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Introduction

This guide is a condensed version of the *Canadian Consensus on Clinical Pharmacy Key Performance Indicators: Knowledge Mobilization Guide*.¹ It provides summary information about the consensus clinical pharmacy key performance indicators (cpKPIs).

A compilation of the terms defined throughout the guide is found in Appendix A: Glossary.

The cpKPIs and this knowledge mobilization guide will be reviewed periodically, and suggestions for their improvement are welcomed. Where more than one version of this guide exists, the most recent version replaces any former versions; users of this guide are advised to check the website of the Canadian Society of Hospital Pharmacists (CSHP) for the most recent version of the cpKPI knowledge mobilization guide.

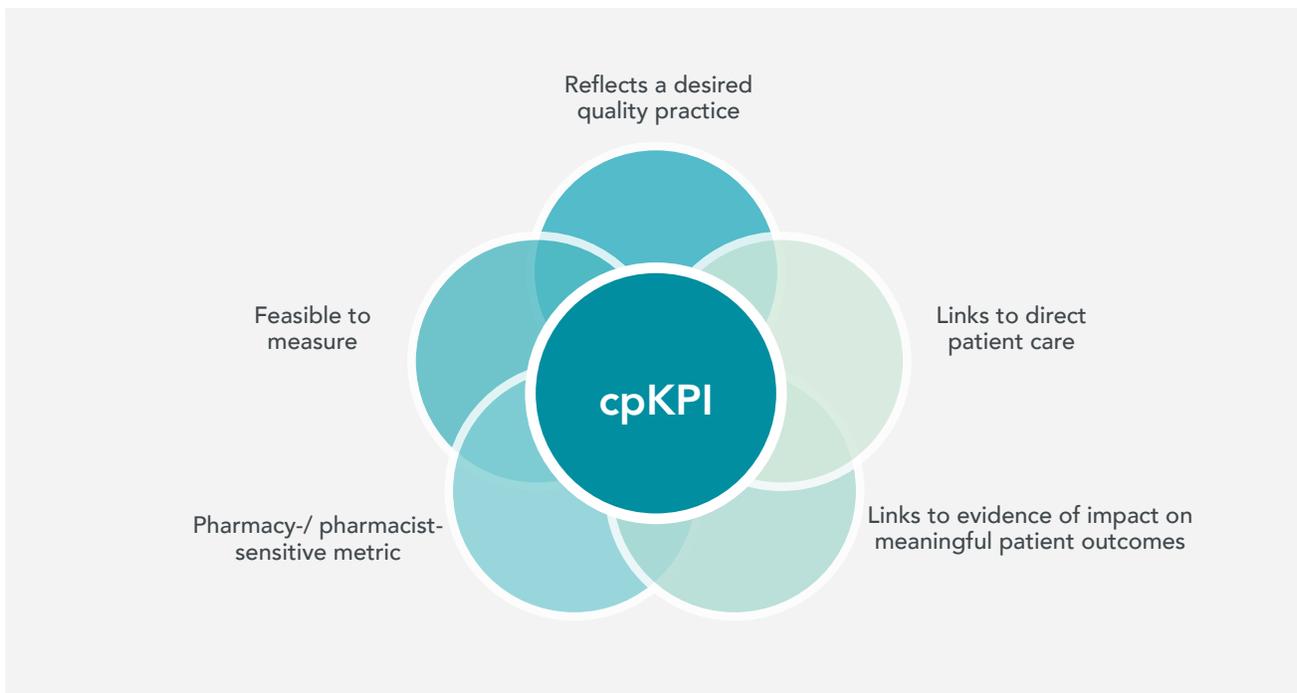
You can provide comments by writing to cpKPICollaborative@gmail.com.

For more detailed information about the consensus cpKPIs (e.g., how the cpKPIs were selected, background and evidence supporting each of the consensus cpKPIs), please refer to the *Canadian Consensus on Clinical Pharmacy Key Performance Indicators: Knowledge Mobilization Guide*.

What is a Clinical Pharmacy Key Performance Indicator?

A key performance indicator (KPI) is a quantitative measure that reflects an organization's identified priorities. Collecting KPI data over time allows for monitoring, decision-making, and quality improvement. A clinical pharmacy KPI (cpKPI) is a KPI that is designed to measure progress for a particular clinical pharmacy activity. Each of the cpKPIs meets the 5 characteristics illustrated in Figure 1.

FIGURE 1. CHARACTERISTICS OF A CLINICAL PHARMACY KEY PERFORMANCE INDICATOR (cpKPI)



Why undertake a project to define cpKPIs?

Until recently,² there was no national consensus on what constitutes a KPI for clinical pharmacy services. For decades, the performance indicators for pharmacy services focused on drug distribution activities, not on measuring the quality of direct patient care.

A group of hospital pharmacists from across the country, in cooperation with CSHP, formed the Canadian cpKPI Collaborative, to develop a core set of cpKPIs with the goal of advancing clinical pharmacy practice to improve patient outcomes.

In 2013, a final set of 8 national cpKPIs was established. The implementation of cpKPIs in hospital settings is intended to

- > improve quality of care and advance clinical pharmacy practice
- > advance practice toward desired evidence-informed patient outcomes
- > define minimum standards and permit benchmarking within and between organizations
- > elevate professional accountability and transparency

It is anticipated that these consensus cpKPIs will allow hospital pharmacists to focus their patient care efforts on clinical interventions that influence important outcomes such as mortality and hospital readmissions.

What are the cpKPIs?

TABLE 1: CONSENSUS cpKPIs

cpKPI Topic	What are the 8 Canadian consensus cpKPIs?
Medication reconciliation on admission	Proportion of patients who received documented medication reconciliation on admission (as well as resolution of identified discrepancies), performed by a pharmacist.
Pharmaceutical care plan	Proportion of patients for whom a pharmacist has developed and initiated a pharmaceutical care plan.
Drug therapy problems	Number of drug therapy problems resolved by a pharmacist per admission.
Interprofessional patient care rounds	Proportion of patients for whom a pharmacist participated in interprofessional patient care rounds to improve medication management.
Patient education during hospital stay	Proportion of patients who received education from a pharmacist about their disease(s) and medication(s) during their hospital stay.
Patient education at discharge	Proportion of patients who received medication education from a pharmacist at discharge.
Medication reconciliation at discharge	Proportion of patients who received documented medication reconciliation at discharge (as well as resolution of identified discrepancies), performed by a pharmacist.
Bundled patient care interventions	Proportion of patients who received comprehensive direct patient care from a pharmacist working in collaboration with the healthcare team.

8 Canadian consensus cpKPIs as they relate to a patient's hospital course

Figure 2 illustrates the 8 Canadian consensus cpKPIs according to the order in which a patient receives comprehensive direct patient care provided by a pharmacist.

Table 2 provides summary information about the cpKPIs, each linked to a critical activity area.

FIGURE 2: EIGHT CONSENSUS cpKPIs IN THE PATIENT JOURNEY

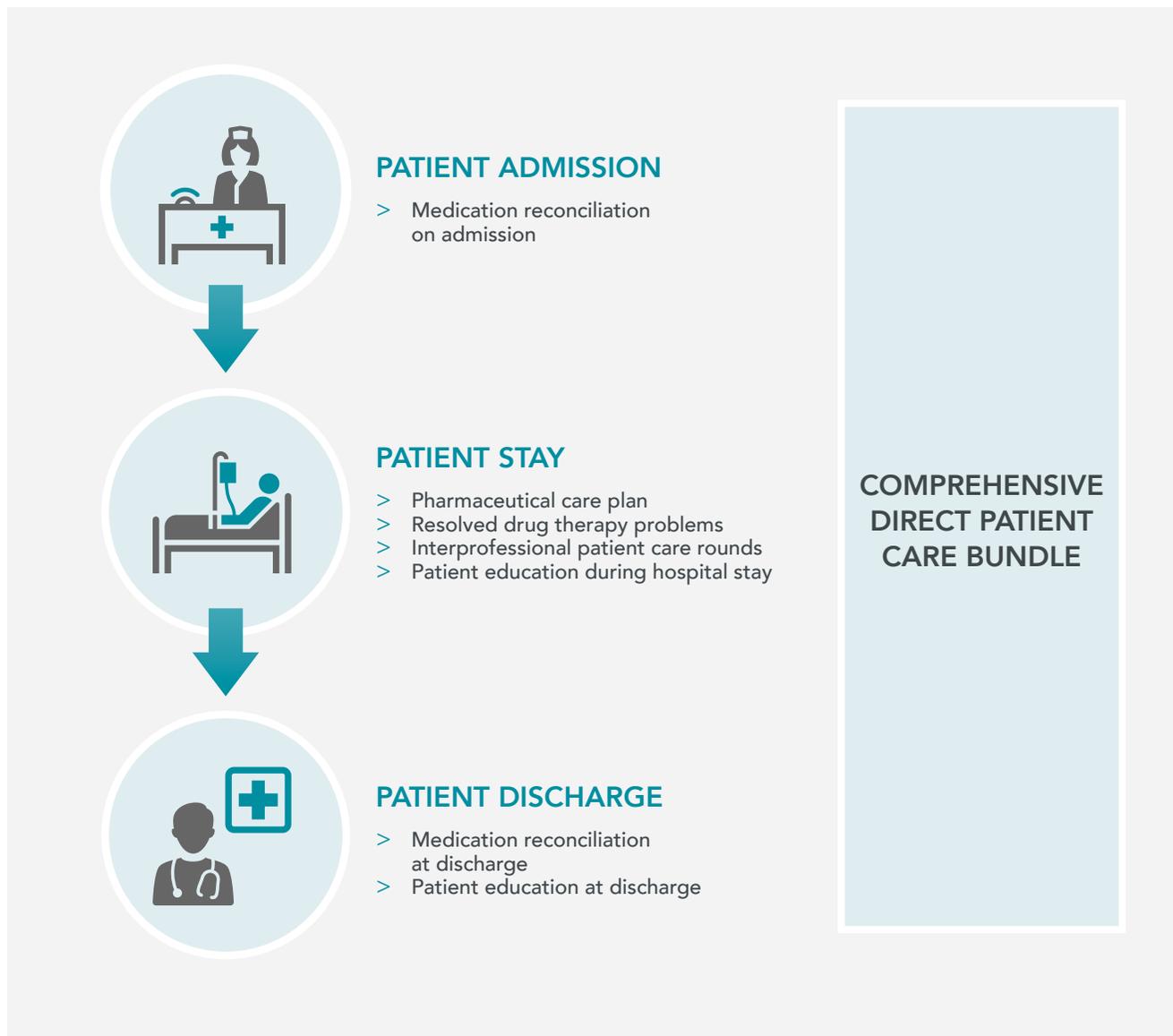


TABLE 2: SUMMARY DESCRIPTION OF cpKPIs

Link to the Critical Activity Area	cpKPI Topic	cpKPI	Description
Medication reconciliation 	Medication reconciliation on admission	Proportion of patients who received documented medication reconciliation (as well as resolution of identified discrepancies) performed by a pharmacist	<ul style="list-style-type: none"> Medication reconciliation is a formal process to ensure that accurate and comprehensive medication information is communicated consistently across transitions of care. Specifically, medication reconciliation on admission involves gathering a complete and accurate list of the patient's home medications (Best Possible Medication History) and comparing that list with the prescriber's admission medication orders. Any differences or discrepancies are to be discussed with the prescriber, with changes being made to the orders if appropriate.
Pharmaceutical care  	Pharmaceutical care plan	Proportion of patients for whom a pharmacist has developed and initiated a pharmaceutical care plan	<ul style="list-style-type: none"> Pharmaceutical care involves a practitioner assuming responsibility for a patient's drug-related needs. It involves the completion of all steps in the patient care process, specifically (1) assessment of the patient (i.e., medical problems and drug therapies, which can lead to identification of drug therapy problems), (2) development of a care plan, and (3) follow-up evaluations. The pharmacotherapy work-up is a rational decision-making process used in pharmaceutical care practice to resolve and prevent drug therapy problems, establish goals of therapy, select interventions, and evaluate outcomes.
	Drug therapy problems	Number of drug therapy problems resolved by a pharmacist per admission	<ul style="list-style-type: none"> Pharmaceutical care involves identifying, resolving, and preventing drug therapy problems. Drug therapy problems are undesirable events or risks experienced by the patient that involve or are suspected to involve drug therapy, that inhibit or delay the patient from achieving the desired goals of therapy, and that require professional judgment to resolve. Such drug therapy problems are identified by evaluating whether the patient's drug therapy is appropriate, effective, and safe and whether the patient is adherent with his or her medications.
Interprofessional patient care rounds 	Interprofessional patient care rounds	Proportion of patients for whom a pharmacist participated in interprofessional patient care rounds to improve medication management	<ul style="list-style-type: none"> The pharmacist actively participates in interprofessional patient care rounds, to improve medication management and patient outcomes. Active participation (on interprofessional rounds): The pharmacist is present and is interacting by making an intervention, providing information, or otherwise influencing patient care.

Critical Activity Area in the Patient Care Process	cpKPI Topic	cpKPI	Description
Patient education 	Patient education during hospital stay	Proportion of patients who received education from a pharmacist about their disease(s) and medication(s) during their hospital stay	<ul style="list-style-type: none"> Education is specific to a disease or drug and is provided in an interactive manner (e.g., face-to-face, via telephone or video) to either the patient or the patient's agent (e.g., parent, guardian).
	Patient education at discharge	Proportion of patients who received medication education from a pharmacist at discharge	<ul style="list-style-type: none"> Medication education at discharge involves providing comprehensive information to patients and their caregivers at discharge from hospital, with the goal of ensuring effective, safe use of medications, and to improve patient adherence to the treatment plan. May include a schedule for postdischarge medications, a summary of changes from the preadmission medication regimen, and education about new medications.
Medication reconciliation 	Medication reconciliation at discharge	Proportion of patients who received documented medication reconciliation at discharge (as well as resolution of identified discrepancies), performed by a pharmacist	<ul style="list-style-type: none"> Medication reconciliation is a formal process to ensure that accurate and comprehensive medication information is communicated consistently across transitions of care. Specifically, medication reconciliation at discharge involves comparing the patient's home medications (Best Possible Medication History) with the patient's current hospital medications and with the prescriber's discharge medication orders. Any differences or discrepancies are to be discussed with the prescriber, with changes being made to the orders if appropriate.
Bundled patient care interventions 	Comprehensive direct patient care bundle	Proportion of patients who received comprehensive direct patient care from a pharmacist working in collaboration with the healthcare team	<ul style="list-style-type: none"> A bundle of inter-related patient care services associated with improving meaningful patient outcomes, such as reducing hospital readmissions. This bundle of services includes (1) medication reconciliation on admission, (2) pharmaceutical care plan and/or resolution of drug therapy problems, (3) pharmacist's participation in interprofessional patient care rounds, (4) patient education (during hospital stay and/or at discharge), and (5) medication reconciliation at discharge.

Comprehensive Direct Patient Care

Figure 3 is a graphic representation of the collection of individual cpKPIs as a bunch of grapes, interlinked and attached to the “vine” representing the pharmaceutical care process.

Individually, each cpKPI (“grape”) measures a certain set of patient care activities (critical elements), with the understanding that these activities are connected to the pharmaceutical care process and serve as a surrogate measure for desired patient outcomes. The “bunch of grapes”, characterizing a bundle of comprehensive direct patient care activities, corresponds to the evidence that a bundle of integrated patient care activities improves meaningful patient outcomes (e.g., readmission rates).

FIGURE 3: COMPREHENSIVE DIRECT PATIENT CARE



Key Points

1 *The cpKPIs are collected and reported for care given to inpatients.*

The measures for any cpKPI do not include data for patients who have not been admitted to the hospital (e.g., ambulatory patients treated in the emergency department or outpatient clinics). For example, medication reconciliation that is completed in the emergency department for a patient who is not admitted to hospital would not be counted as a cpKPI. However, the medication reconciliation that is completed for a patient who was admitted via the emergency department would be counted as a cpKPI.

2 *The number of patient admissions is the chosen denominator for calculating cpKPIs.*

The number of patient admissions was chosen as the denominator for calculating cpKPIs because this value reflects the potential number of patients who could have received the clinical pharmacy interventions. It is believed that collecting these data will inform practice with the goal of advancing the quality of clinical pharmacy services provided in the course of direct patient care. Using the same denominator for all cpKPI metrics allows for consistency and ease of use.

3 *Complexity of a patient case does not affect what is measured.*

The decision to measure an activity as a cpKPI does not take into account the degree of complexity of a patient case.

4 *Continual measurement of the cpKPIs is suggested.*

It is recommended that these cpKPIs be measured on a continuous basis (e.g., daily) to optimize the improvement in quality of care and practice advancement. However, if continuous measurement is not feasible, the suggested minimum is a 2-week sample measurement per quarter. It should also be noted that each measure is a static indicator for the specified reporting period, reported as a percentage, not a directional value (e.g., 12% increase) nor a raw data value (e.g., 12).

5 *Documentation of cpKPI is highly recommended.*

Best practices imply that documentation is an essential part of any quality assurance system, as it provides evidence of what is planned, what has been done, and the outcome. Documentation of patient care activities should be determined at the local level, with the goal of maximizing the communication and implementation of these activities in collaboration with other healthcare providers. Usually, the ideal and recommended location for documentation would be in the patient's healthcare record, although other pharmacy records may also be acceptable; the choice should be decided at the local level.

6 *The pharmaceutical care plan cpKPI differs from the drug therapy problems cpKPI.*

These 2 cpKPIs are related to and overlap one another. The pharmaceutical care plan cpKPI measures the proportion of patients for whom a pharmacist has developed and initiated a pharmaceutical care plan, whereas the drug therapy problem cpKPI measures the proportion of patients whose drug therapy problems have been resolved by a pharmacist. In summary, the pharmaceutical care plan cpKPI metric measures completion of the care plan, whether or not a drug therapy problem has been resolved. To identify and resolve a drug therapy problem, a pharmacist may or may not have completed a comprehensive care plan.

7 *Different pharmacists may be involved in the care of a single patient during provision of the comprehensive direct patient care bundle.*

During the course of a patient's admission, one or more pharmacists may provide medication reconciliation on admission, complete a pharmaceutical care plan (with possible identification and resolution of drug therapy problems), participate in interprofessional patient care rounds, and provide education (or counselling) to the patient during hospital stay or at discharge and discharge medication reconciliation. Regardless of the number of people involved in providing the comprehensive direct patient care bundle, the bundle is counted only once.

8 *Consensus was not reached for the drug- and disease-specific quality indicators.*

Throughout the Delphi consensus process, the only candidate drug- and disease-specific indicator for which consensus was reached in any round was the number (or proportion) of patients receiving prophylaxis for venous thromboembolism. Specifically, consensus was reached for this candidate cpKPI in round 1, but the level of agreement for this cpKPI dropped progressively in subsequent rounds.

Medication Reconciliation on Admission

cpKPI

Proportion of patients who received documented medication reconciliation on admission, with resolution of identified discrepancies



Expectation

Pharmacists perform and document medication reconciliation on admission and resolve identified discrepancies. To qualify as an aspect of measurement for this cpKPI, a Best Possible Medication History completed by a non-pharmacist must be reviewed by a pharmacist as part of the reconciliation and discrepancy-resolution process.

Definitions

Please refer to the websites of Accreditation Canada (www.accreditation.ca) and the Institute for Safe Medication Practices Canada (ISMP Canada; www.ismp-canada.org) for the most up-to-date national and international definitions related to medication reconciliation.

Measure

Number of patients who received documented medication reconciliation on admission, with resolution of identified discrepancies

Number of patient admissions

This cpKPI does not require that a pharmacist complete the entire Best Possible Medication History (BPMH). A non-pharmacist (e.g., pharmacy technician, pharmacy student, or nurse) may collect the information for the BPMH, which must then be reviewed by a pharmacist, who also completes the medication reconciliation. The published evidence supporting these 2 options differs, as described below.

- > BPMH initiated and completed by pharmacist, supported by randomized control trials: A BPMH and medication reconciliation on admission performed by a pharmacist as part of an integrated care process is supported by randomized control trials, including those of Gillespie and colleagues³ and Makowsky and colleagues,⁴ as well as multiple systematic reviews and observational studies focused on improving patient outcomes.

- > BPMH initiated by a non-pharmacist and completed by pharmacist, supported by before-and-after studies and expert opinion: A review of a BPMH that is started by a non-pharmacist (e.g., pharmacy technician, nurse, and physician) who is trained in eliciting a BPMH, but is completed by a pharmacist as part of the reconciliation process is supported by limited evidence. Such evidence does not include effects on patient outcomes such as readmissions. The authors of this guide are not aware of any published evidence for an independent, pharmacy technician (or nurse or physician)–led BPMH and medication reconciliation process on admission that correlates with improvement in patient readmissions, mortality, or other outcomes, as would be necessary if such a process were to qualify as a cpKPI. To date, most of the evidence from non-randomized controlled trials or observational studies with controls has been correlated with medication discrepancies.

Rationale

The activity represented by this indicator has been shown to improve meaningful patient outcomes (e.g., readmissions), if performed as part of a comprehensive intervention for pharmacy patient care services, rather than as an individual critical element. See Figure 3 (on page 8).

Accreditation Canada⁵ has identified medication reconciliation as a required organizational practice.

Medication reconciliation is covered by one of the objectives of the CSHP 2015 initiative.⁶

The Safer Healthcare Now! program recognizes medication reconciliation on admission as a core intervention that hospitals and other organizations can report to the program.⁷

The World Health Organization's High 5s international patient safety initiative recognizes medication reconciliation as 1 of 5 key areas of patient safety chosen to facilitate addressing specific patient safety problems.⁸

Pharmaceutical Care Plan



cpKPI

Proportion of patients for whom a pharmacist has developed and initiated a pharmaceutical care plan

Expectation

Pharmacists develop and initiate a pharmaceutical care plan for each patient under their care.

Definitions

Pharmaceutical care:

Pharmaceutical care is a patient-centred “practice in which the practitioner takes responsibility for the patient’s drug-related needs, and is held accountable for this commitment.”⁹

Pharmaceutical care plan:

A treatment plan that is founded on pharmaceutical care and which is developed according to standards of care. The plan includes all of the following activities:

- > establishing goals of therapy,
- > determining interventions to prevent or resolve DTPs, and
- > scheduling follow-up monitoring.⁹

Measure

Number of patients for whom a pharmacist has developed and initiated a pharmaceutical care plan

Number of patient admissions

This cpKPI measures an isolated critical element that is part of a bundle of interventions required for continuous pharmaceutical care from admission to discharge. It covers both patients whose DTPs have been resolved and those who have received a comprehensive pharmaceutical care work-up. It is intended to capture the proportion of patients for whom a pharmaceutical care plan has been developed and initiated.

The patient care process includes patient assessment, a care plan, and follow-up evaluation.⁹ The pharmacist reviews, monitors, and modifies the plan as necessary and appropriate, in collaboration with the patient and other members of the healthcare team.

Pharmaceutical care plans are dynamic in nature, changing with the identified needs of the patient. For the purpose of cpKPI reporting, any pharmaceutical care plan that has been formulated, documented, and initiated would be included in calculating the indicator. It is recommended that any unresolved DTPs identified within the plan be communicated to community care providers through discharge planning and follow-up.

A pharmacist may determine and document, either at or before discharge, whether a pharmaceutical care plan was implemented during a patient's admission. If more than one such plan is documented before discharge, only one care plan should be counted for any given patient.

Rationale

The activity represented by this indicator has been shown to improve meaningful patient outcomes (e.g., readmissions), if performed as part of a comprehensive intervention for pharmacy patient care services, rather than as an individual critical element. See Figure 3 (on page 8).

Drug Therapy Problems



cpKPI

Number of drug therapy problems resolved by a pharmacist per admission

Expectation

Pharmacists identify and resolve drug therapy problems.

Definitions

Drug therapy problem (DTP):

Any “undesirable event or risk of an event experienced by the patient” that involves, or is suspected to involve, drug therapy, and that interferes with achieving the desired goals of therapy and requires professional judgement to resolve.⁹

A patient who experiences a DTP falls into 1 of the following 7 categories:⁹

- > “The drug therapy is unnecessary because the patient does not have a clinical indication at this time.
- > Additional drug therapy is required to treat or prevent a medical condition in the patient.
- > The drug product is not effective at producing the desired response in the patient.
- > The dosage is too low to produce the desired response in the patient.
- > The drug is causing an adverse drug reaction in the patient.
- > The dosage is too high resulting in undesirable effects experienced by the patient.
- > The patient is not able or not willing to take the drug regimen as intended.”

Measure

Number of DTPs resolved by a pharmacist

Number of patient admissions

A DTP is considered to be resolved if, as a result of a pharmacist’s action, the patient experiences a change in their drug therapy or receives strategies or information to improve medication adherence. The actions that a pharmacist can perform to resolve a DTP may include: stopping a drug in a patient that is not indicated; starting a drug for a patient that is indicated; changing a drug regimen for a patient at risk for or experiencing a suboptimal response to drug therapy; increasing the drug dose; decreasing the drug dose; changing a drug

regimen for a patient experiencing an adverse reaction to the drug; and providing the patient with information or strategies to improve their medication adherence.

Only drug therapy problems (DTPs) that are resolved should be included for this measure. This explicitly means that, as a result of a pharmacist action, the patient experienced a change in their drug therapy or received information or strategies to improve medication adherence.

Supplemental measures

Number of patients with DTPs resolved by a pharmacist

Number of patients

In calculating this supplemental measure, care must be taken to avoid double-counting patients. A patient who had more than one resolved DTP is counted only once.

A health authority may collect other quality measures to provide more detailed information about the number of resolved DTPs per patient-day. The decision to collect data at a more detailed level is a local decision. For example, consideration may be given to tracking the number of resolved DTPs per patient-day in relation to the following variables:¹⁰

- > drug or drug class
- > action (in relation to the 7 categories of DTP described above)
- > disease state
- > severity of disease, which relates to potential for harm if DTP is not resolved.

Rationale

Resolving a DTP as a critical element of a bundle of services has direct benefits for patient care (e.g., reduction in 30-day and 1-year drug-related readmissions).

Interprofessional Patient Care Rounds



cpKPI

Proportion of patients for whom a pharmacist participated in interprofessional patient care rounds to improve medication management

Expectation

Pharmacists actively participate in interprofessional patient care rounds to improve medication management and patient outcomes.

Definitions

Active participation (on interprofessional rounds):

The pharmacist is present and is interacting by making an intervention, providing information, or otherwise influencing patient care.

Interprofessional patient care rounds:

Patient care rounds that involve the responsible prescriber and that provide an opportunity for the rounding pharmacist to present relevant pharmacy information or perform interventions to influence patient care. The rounds may or may not include the patient or the patient's caregivers. This definition excludes brief rounds where the intent is only to share information, without making any decisions. An example of the latter would be "bullet rounds", in which a brief (e.g., 1- to 2-minute) summary is given for each patient about his or her current status or discharge plans.

Interprofessional team:

"[A] group of people from different provider backgrounds that works with clients and families to meet jointly established goals. Team members include regulated and unregulated health providers, clients, family members, other care givers and others within the circle of care necessary for the patient's/client's achievement of his or her goals."¹¹

Medication management:

"...patient-centred care to optimize safe, effective and appropriate drug therapy. Care is provided through collaboration with patients and their health care teams."¹²

Measure

Number of patients for whom a pharmacist actively participated in interprofessional patient care rounds

Number of patient admissions

The frequency of rounding by a pharmacist depends on the frequency of patient care rounds within the organization and as appropriate for ongoing patient care.

Measuring active participation in interprofessional patient care rounds as a cpKPI does not depend on whether such participation results in specific outcomes.

Supplemental measure

Proportion of patient-days on which a pharmacist actively participates in interprofessional patient care rounds (For example if there are 15 patients in a ward on which a pharmacist actively participates in rounds for 10 patients for 5 days, the proportion is 66%: 50 patient-days out of the total 75 patient days on the ward in 5 days).

Number of patient days on which pharmacist actively participated in interprofessional patient care rounds to improve medication management

Patient days

Rationale

The activity represented by this indicator has been shown to improve meaningful patient outcomes (e.g., readmissions), if performed as part of a comprehensive intervention of pharmacy patient care services, rather than as an individual critical element.

In particular, pharmacists' participation on patient care rounds has been reported to have positive effects on various outcomes, including adverse drug event rates,¹³ length of stay,¹³ cost per patient,¹³ 30-day and 1-year drug-related readmissions,^{3,13} and mortality.¹⁴

Patient Education during Hospital Stay

cpKPI

Proportion of patients who received education from a pharmacist about their disease(s) and medication(s) during their hospital stay



Expectation

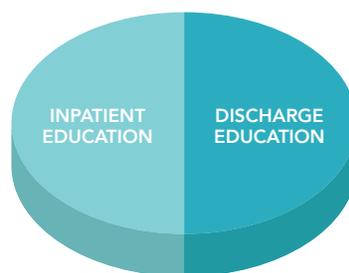
Pharmacists provide education to patients about their disease(s) and medication(s).

Definitions

Patient education during hospital stay:

Education that is specific to a disease or drug which is provided in an interactive manner (e.g., face-to-face, via telephone or video) given to either the patient or the patient's agent (e.g., parent, guardian). This term is not interchangeable with "patient education at discharge".

PATIENT EDUCATION



Measure

Number of patients who received education from a pharmacist

Number of patient admissions

Adjustment for the quality of the education delivered complicates the measure beyond the scope and purpose of tracking this cpKPI. It is expected that individual pharmacists will provide education that is appropriately customized for the needs of each patient.

In calculating this measure, care must be taken to avoid double-counting. For example, each patient who receives medication education from a pharmacist during the hospital stay is counted only once, even if there were multiple education sessions.

Rationale

Educating patients about their medications helps them to become active participants in their health care, which may lead to safer medication use, improved adherence and management of adverse effects, and overall better self-management of their health. Standards for pharmacy practice require that pharmacists help patients to become informed about their medications, so as to receive the intended benefits of the treatment plan.

Patient Education at Discharge



cpKPI

Proportion of patients who received education from a pharmacist at discharge

Expectation

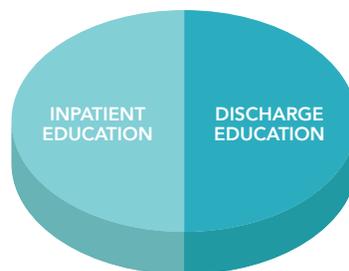
Pharmacists provide education at discharge for hospital patients. This activity is performed with the intent to facilitate the discharge process by providing patients with the tools and education necessary to ensure optimal postdischarge medication management.

Definitions

Patient education at discharge:

Comprehensive education to ensure patient's adherence to the treatment plan on transition out of the acute care setting. Such education may include a schedule for postdischarge medications, a summary of changes from the preadmission medication regimen, and education about new medications. This term is not interchangeable with 'patient education during hospital stay'.

PATIENT EDUCATION



Measure

Number of patients who received education from a pharmacist at discharge

Number of patient admissions

Adjustment for the quality of the education delivered complicates the measure beyond the scope and purpose of tracking this cpKPI. It is expected that individual pharmacists will provide education that is appropriately customized for the needs of each patient.

Supplemental measure

Number of patients who received education from a pharmacist at discharge

Number of patient discharges

Measures for education at discharge should not include data for patients who received only education during hospital stay (with no education provided at discharge).

Rationale

A number of organizations and practice standards consider medication education at discharge to be important:

- > CSHP 2015 – Objective 1.4: “75% of hospital inpatients discharged with complex and high-risk medication regimens will receive medication counselling [education] managed by a pharmacist”.⁶
- > ISMP Canada states that, at discharge, the patient and the next healthcare provider should be given an updated medication plan, with the generic name, dose, dosing frequency, route of administration, reason for use, and duration of therapy for each medication.¹⁵

As part of a bundle of interventions, the provision of medication education at discharge is linked to clinically meaningful patient outcomes, as observed in the randomized trials conducted by Gillespie and colleagues³ and Makowsky and colleagues.⁴

More generally, pharmacists accept responsibility for providing patient education and counselling in the context of pharmaceutical care, to improve adherence and reduce DTPs¹⁶ (which the study refers to as medication-related problems).

Medication Reconciliation at Discharge



cpKPI

Proportion of patients who received documented medication reconciliation at discharge, with resolution of identified discrepancies

Expectation

Pharmacists perform and document medication reconciliation at discharge and resolve identified discrepancies.

Definitions

Please refer to the websites of Accreditation Canada (www.accreditation.ca) and ISMP Canada (www.ismp-canada.org) for the most up-to-date national and international definitions related to medication reconciliation.

Measure

Number of patients who received documented medication reconciliation at discharge, with resolution of identified discrepancies by a pharmacist

Number of patient admissions

Supplemental measure

Number of patients who received documented medication reconciliation at discharge

Number of patient discharges

Rationale

The activity represented by this indicator has been shown to improve meaningful patient outcomes (e.g., readmissions), if performed as part of a comprehensive intervention for pharmacy patient care services, rather than as an individual critical element.

Accreditation Canada has identified medication reconciliation as a required organizational practice.⁵

Medication reconciliation is covered by one of the objectives of the CSHP 2015 initiative.⁶

The Safer Healthcare Now! program recognizes medication reconciliation at discharge as a core intervention that hospitals and other organizations can report to the program.⁷

The World Health Organization's High 5s international patient safety initiative recognizes medication reconciliation as 1 of 5 key areas of patient safety chosen to facilitate addressing specific patient safety problems.⁸

Comprehensive Direct Patient Care Bundle

cpKPI

Proportion of patients who received comprehensive direct patient care from a pharmacist working in collaboration with the healthcare team



Expectation

In collaboration with the healthcare team, pharmacists provide a bundle of critical, inter-related patient care services to patients.

Definitions

Comprehensive direct patient care bundle:

A collection of inter-related patient care activities associated with meaningful patient outcomes. It includes all of the following elements:

- 1 medication reconciliation on admission;
- 2 pharmaceutical care plan (with identification and resolution of DTPs when present);
- 3 pharmacist's active participation in interprofessional patient care rounds;
- 4 patient education during hospital stay and/or patient education at discharge; and
- 5 medication reconciliation at discharge.

Measure

Number of patients who received comprehensive, direct patient care by a pharmacist in collaboration with the health care team

Number of patient admissions

This cpKPI measures the bundle of patient care activities, whereas the other cpKPIs measure the isolated elements that make up the bundle. All of the 5 elements of the bundle must be present for the bundle to be counted as complete.

This cpKPI may be measured and recorded by the "discharging" pharmacist, on the basis of his or her knowledge of the patient's hospital course of stay, or may be generated from a cumulative record of each discrete component for the patient (i.e., as recorded in a patient-specific reporting system).

Rationale

This cpKPI addresses the important principle that in many of the key trials (specifically the randomized controlled trials of Makowsky and colleagues⁴ and Gillespie and colleagues³), a bundle of integrated or interlinked critical elements (patient care activities), rather than individual, isolated patient care activities (e.g., participation in interprofessional patient care round), was associated with improvements in meaningful patient outcomes (e.g., readmission to hospital).

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Appendix A: Glossary

Active participation (on patient care rounds): The pharmacist is present and is interacting by making an intervention, providing information, or otherwise influencing patient care.

Comprehensive direct patient care bundle: A collection of inter-related patient care services associated with meaningful patient outcomes. It includes all of the following elements:

- 1) medication reconciliation on admission;
- 2) pharmaceutical care plan (with identification and resolution of DTPs when present);
- 3) pharmacist's participation in interprofessional patient care rounds;
- 4) patient education during hospital stay and/or patient education at discharge; and
- 5) medication reconciliation at discharge.

Drug therapy problem (DTP): "Any undesirable event or risk experienced by the patient that involves, or is suspected to involve, drug therapy, and that interferes with achieving the desired goals of therapy and requires professional judgment to resolve."⁹

Patients who experience a drug therapy problem fall into one of the following 7 categories.⁹

- "The drug therapy is unnecessary because the patient does not have a clinical indication at this time.
- Additional drug therapy is required to treat or prevent a medical condition in the patient.
- The drug product is not effective at producing the desired response in the patient.
- The dosage is too low to produce the desired response in the patient.
- The drug is causing an adverse drug reaction in the patient.
- The dosage is too high resulting in undesirable effects experienced by the patient.
- The patient is not able or not willing to take the drug regimen as intended."

Interprofessional patient care rounds: Patient care rounds that involve the responsible prescriber and that provide an opportunity for the rounding pharmacist to present relevant pharmacy information or perform interventions to influence patient care. The rounds may or may not include the patient or the patient's caregivers. This definition excludes brief rounds where the intent is only to share information, without making any decisions. An example of the latter would be "bullet rounds", in which a brief (e.g., 1- to 2-minute) summary is given for each patient about his or her current status or discharge plans.

Interprofessional team: "[A] group of people from different provider backgrounds that works with clients and families to meet jointly established goals. Team members include regulated and unregulated health providers, clients, family members, other care givers and others within the circle of care necessary for the patient's/client's achievement of his or her goals."¹²

Medication management: "...patient-centred care to optimize safe, effective and appropriate drug therapy. Care is provided through collaboration with patients and their health care teams."¹¹

Patient: Person admitted to hospital or his or her agent (e.g., parent, guardian).

cont'd

Patient education at discharge: Comprehensive education to ensure patient's adherence to the treatment plan on transition out of the acute care setting. Such education may include a schedule for postdischarge medications, a summary of changes from the preadmission medication regimen, and education about new medications.

Patient education during hospital stay: Education that is specific to a disease or drug which is provided in an interactive manner (e.g., face-to-face, via telephone or video) given to either the patient or the patient's agent (e.g., parent, guardian).

Pharmaceutical care: Pharmaceutical care is a patient-centred practice in which the practitioner takes responsibility for the patient's drug-related needs, and is held accountable for this commitment.⁹

Pharmaceutical care plan: A treatment plan that is founded on pharmaceutical care and which is developed according to standards of care. The plan includes all of the following activities:

- > establishing goals of therapy,
- > determining interventions to prevent or resolve DTPs, and
- > scheduling follow-up monitoring.⁹

