

# How Pharmacists Can Prove Their Worth: A look at Demonstrating Value on a Healthcare Team

Panel Discussion For CSHP-OB AGM

November 16, 2019.

# Learning Objectives

- ▶ At the end of the panel discussion the participants will be able to:
  - ▶ Describe how a pilot project can be utilized to demonstrate the impact a pharmacist would have on practice setting
  - ▶ Describe how “planting your flag” changes the perception of need for pharmacy services (making yourself essential).
  - ▶ Highlight (essential) pharmacy patient care services that improve patient outcomes.
  - ▶ Summarize patient and inter - professional feedback on pharmacy health quality indicators

# Disclosure of Conflict of Interest

- ▶ Allan Mills has been on the following advisory boards
  - ▶ Fresenius Kabi Canada, Pfizer Canada, Mylan, Soanfi Canada
- ▶ Olavo Fernandes
  - ▶ No conflicts of interest
- ▶ Winnie Seto
- ▶ Jeff Nagge
  - ▶ No conflicts of interest

# Introduction

- ▶ Hospital Pharmacists have ventured into new practice environments through leveraging the Public Hospitals Act and the Pharmacy Act
- ▶ Longstanding evidence suggests that pharmacist activity enhances patient outcomes<sup>1</sup>
- ▶ Competition exists for resources
  - ▶ Pharmacists not necessarily “top of mind”
  - ▶ No standard pharmacist to patient ratio
- ▶ Demonstrating “worth” has been challenging
  - ▶ General role versus “planting your flag”

1: Bond C, Raehl CL. Clinical pharmacy services, pharmacy staffing, and adverse drug reactions in United States hospitals. *Pharmacotherapy*. 2006; 26(6):735-47

- ▶ This panel will share three perspectives on this challenge
  - ▶ Dr Winnie Seto will discuss the approach that Sick Kids has taken
  - ▶ Dr Jeff Nagge will provide an ambulatory care perspective from his practice at the University of Waterloo.
  - ▶ Dr Olavo Fernandes will briefly outline the evidence of pharmacist impact and will discuss UHN's approach

# Optimizing clinical pharmacy services at Hospital for Sick Children

Winnie Seto, PharmD, ACPR

# Opportunistic approach to optimize clinical pharmacy services at Hospital for Sick Children

- ▶ Alignment of common goals
  - ▶ Mission, Vision, Strategy plan - hospital-wide matching with department
  - ▶ Launch, review, revise the clinical pharmacists practice standards, roles and responsibilities,
  - ▶ Expansion of scope using medical directives at direct patient care
  - ▶ Expansion of circle of influence at guidelines and committee-level, special projects and pilots
- ▶ Core message to stakeholders: Clinical pharmacy service is an essential element to have for all paediatric patients at SickKids patient care areas to ensure best patient care (efficacy) and patient safety (avoid harm)

# Opportunistic approach to optimize clinical pharmacy services at Hospital for Sick Children

## ▶ ADVOCACY to STAKEHOLDERS

### ▶ Front line network and exposure

Forum:

- ▶ Formal - hospital-wide and clinical area-specific committees, quality safety committees/discussions, pharmacy services coverage area
- ▶ Informal - hallway “chats”, ad-hoc taskforces and working groups, coffee /cafeteria line-up
- ▶ All levels for pharmacy managers, leaders and frontline clinical pharmacists
- ▶ CPOE related discussions

# Opportunistic approach to optimize clinical pharmacy services at Hospital for Sick Children

- ▶ Constant marketing and showcasing with clinical pharmacists work with just-in-time to address patient care concerns
- ▶ Workload statistics, clinical drug therapy problem interventions/reports
- ▶ Hospital-liability for risks related to patient care (learning from mistakes)
  - ▶ Failure for medication use and safety as a foundation to build future success in minimizing harm and maximizing efficacy for patients
- ▶ Accreditation standards and requirements
- ▶ Lack of weekend and evenings proactive clinical pharmacy services
- ▶ Lack of back-fill and coverage due to vacation and dispensary coverage shifts (prone to high-risk situation, lack of proactive surveillance, staff burnout, mismatch of staffing resources to patient workload and complexities)
- ▶ Failure to meet hospital-wide metrics - Length of stay, proactive coverage for critical drug levels (TDM), safety reports related to clinical pharmacy service after hours and on weekends
- ▶ Evidence -based approach and bench-mark with adults and paediatric centres/programs

# Opportunistic approach to optimize clinical pharmacy services at Hospital for Sick Children

## ▶ Pilots

- ▶ Emergency Department Pilot
- ▶ Complex care pilot
- ▶ Thrombosis pilot
- ▶ Brain and Mental Health pilot

## ▶ Actual resource dedication

- ▶ On-demand/over-budget for now - post CPOE implementation opportunities
- ▶ Weekend clinical pharmacy services - pilot to business plan
- ▶ Long term addition - cardiology pharmacists business plan proposal
- ▶ Critical care areas proposal - gaps, needs, acuity and risks

# Proving your worth in ambulatory care

Jeff Nagge, PharmD, ACPR

Associate Clinical Professor, School of Pharmacy, University of Waterloo

# Family Health Teams

- ▶ Primary health care delivered by an interprofessional team
  - ▶ Team composition is determined by the needs of the community
- ▶ Mandate: To improve the management of chronic medical conditions
- ▶ Currently there are 184 FHTs in 200 communities in Ontario providing care for more than 3 million patients

# CFFM FHT: The early days (circa 2005)



## Scope of Practice prior to October 2012:

Pharmacists can:

- dispense, sell and compound medications
- supervise the part of the pharmacy where drugs are kept
- provide information pertaining to the safe and effective use of medication

Proposal:

Clinical pharmacist management of warfarin therapy

# Why anticoagulation?

- ▶ Area of personal interest/passion
- ▶ Research suggested physicians are more averse to warfarin therapy than patients
- ▶ Studies have demonstrated non-physician management of anticoagulation is associated with improved outcomes
  - ▶ (i.e. I knew it would work)
- ▶ Outcomes are relatively easy to track

# CFFM FHT POC anticoagulation clinic

- ▶ Staff: clinical pharmacist and RN
- ▶ Locations:
  - ▶ 1 urban and 1 rural
- ▶ Hours:
  - ▶ 8 hours per week
- ▶ No appointments necessary
- ▶ Medical directive



# Developing a successful clinical service

- ▶ Improve/maintain clinical outcomes
- ▶ Improve patient satisfaction
- ▶ Improve provider satisfaction

# POC anticoagulation clinic: Patient demographics

- ▶ 95 patients (October 2006, evaluation phase)\*
- ▶ 40% female
- ▶ Indication for anticoagulation
  - ▶ Atrial fibrillation = 75%
  - ▶ Mechanical Heart Valves = 15%
  - ▶ Acute/secondary prevention VTE = 10%

# Time spent in the Therapeutic Range (TTR)

- ▶ Widely accepted surrogate measure of quality of anticoagulation management
- ▶ Ideal TTR = 100%
- ▶ Usual care TTR
  - ▶ 56.7% in systematic review

van Walraven C *et al.* Chest 2007;131:1508-15.

Ansell J *et al.* Chest 2008;133:160-198.

# CFFM anticoagulation clinic quality assurance: TTR data for first six months of service

	Baseline (usual care, 6-months prior to pharmacist management)	6-months post-pharmacist management	p-value
% INRs in range	57%	83%	p<0.001

Raw TTR has remained over 70% at every 6-month interval since 2006

# CFFM anticoagulation clinic quality assurance:

## Clinical events in the first six months

- ▶ One GI bleed (INR = 2.3 at time of bleed)
  - ▶ Expected serious haemorrhage rate approximately 2-3% per year
- ▶ No thromboembolic events
  - ▶ Expected thromboembolic rate approximately 2% per year
- ▶ Two ER visits prevented
  - ▶ Vitamin K administered on site for INR > 7

# CFFM anticoagulation clinic quality assurance: Patient satisfaction results

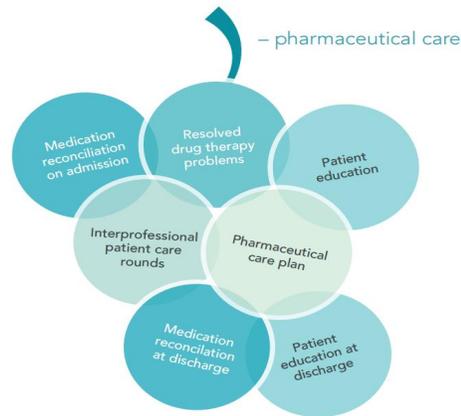
- ▶ N = 32 questionnaires
  - ▶ All respondents preferred POC testing compared to venipuncture
    - ▶ “I enjoy coming to this clinic. At other clinics, I didn't enjoy going”
  - ▶ Only suggestion for improvement:
    - ▶ Offer it on a second day of the week

# CFFM anticoagulation clinic quality assurance: Provider satisfaction

- ▶ Family physicians
- ▶ Clinical pharmacist

# How Can Pharmacists Prove their Worth?

## Inpatient Settings- Evidence, Patient & Interprofessional Feedback and Real Life Local Data



**Olavo Fernandes BScPhm, ACPR, PharmD, FCSHP**  
**Director of Pharmacy- Clinical & Operations, UHN, Toronto ON**  
**Assistant Professor (Status)- Leslie Dan Faculty of Pharmacy, Univ. of Toronto**

**CSHP Ontario Branch Education Sessions**

**Nov 16 , 2019**



UNIVERSITY OF TORONTO  
LESLIE DAN FACULTY OF PHARMACY

# How can pharmacists prove their worth? Evidence: What are the potential outcomes of interest for cpKPI / medication management bundle related interventions

1. **Medication discrepancies**
2. **Potential adverse drug events (PADE- clinically significant medication discrepancies) [level 4]**
3. **Adverse drug events (ADE) [level 4]**
4. **Emergency department visits (contacts) [level 1]**
5. **Hospital readmissions [level 1]**
6. **Medication related hospital readmissions [level 1]**
7. **Hospital visits (ED visits + readmissions) [level 1]**
8. **Length of Stay [level 1]**
9. **Mortality [level 1]**
10. **Disease specific morbidity [level 1 or 2- depends]**

# Evidence Informed Consensus Clinical Pharmacy Key Performance Indicators

1. Admission Medication Reconciliation
2. Interprofessional Patient Care Rounds
3. Drug Therapy Problems Resolved
4. Pharmaceutical Care Plan
5. Patient Education ( during stay)
6. Discharge Patient Education
7. Discharge Medication Reconciliation
8. Bundled Patient Care Interventions



# Which grapes need to be in a “medication management” patient care bundle to positively influence meaningful patient outcomes?



- Fernandes O, Toombs K, Pereira et al. Canadian Consensus on Clinical Pharmacy Key Performance Indicators: Knowledge Mobilization Guide. Ottawa, ON: Canadian Society of Hospital Pharmacists; 2015. <http://www.cshp.ca/productsservices/cpkpi/CSPH-Can-Concensus-cpKPI-Knowledge-Mobilization-Guide.pdf>

# IS ALL THAT GLITTERS REALLY “GOLD”?

## Taxonomy: Varying Levels of Intensity – Bundles

*Baker et al. Journal of Hospital Medicine 2018;13:152-157*

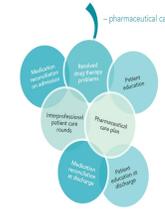
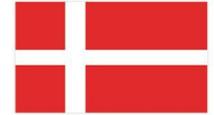


TABLE 1. Varying Levels of Intensity (Taxonomy) of Med Rec Care Integrated With Interprofessional Medication Management

Care Bundle Category	Care Level of Intensity	Key Components	Published Examples
Partial	Bronze	BPMH with admission reconciliation Med Rec informatics platform to support the healthcare team	Cornish et al. 2005 <sup>16</sup> ; Kwan et al. 2007 <sup>17</sup>
	Silver	Bronze plus Prescriber-only discharge Med Rec	Wong et al. 2008 <sup>6</sup> ; Schnipper et al. 2009 <sup>7</sup>
Enhanced	Gold <b>3-4 Grapes.</b>	Silver plus Interprofessional (prescriber and pharmacist collaboration) discharge Med Rec Varying degrees of medication management and pharmaceutical care	Schnipper et al. 2009 <sup>7</sup> ; Cesta et al. 2006 <sup>15</sup> ; Dedhia et al. 2009 <sup>18</sup>
Intensive	Platinum <b>5 Grapes.</b>	Gold plus Patient medication education prior to discharge (including discussion of medication changes) Provision of patient-friendly reconciled medication schedules upon discharge Broader attention to medication management and pharmaceutical care with pharmacist inpatient rounding	Makowsky et al 2009 <sup>13</sup> ; Dedhia et al. 2009 <sup>18</sup> ; Murphy et al. 2009 <sup>19</sup> ; Nazareth et al. 2001 <sup>20</sup> ; Al-Rashed et al. 2002 <sup>21</sup>
	Diamond <b>6 Grapes.</b>	Platinum plus Postdischarge follow-up phone call to patient by hospital clinician (eg, nurse or pharmacist) Communication of medication changes with rationale directly to community pharmacy and primary care physician	Karapinar-Çarkit et al. 2009 <sup>5</sup> ; Jack et al 2009 <sup>11</sup> ; Gillespie et al. 2009 <sup>12</sup> ; Schnipper et al. 2006 <sup>22</sup> ; Walker et al. 2009 <sup>23</sup>

# 2018 Danish RCT – Multi-faceted Clinical Pharmacist Intervention – and Risk of Readmission

LV Ravn-Nielsen et al, *JAMA Intern Med.* Published online January 29, 2018.



Research

? 7 Grapes

JAMA Internal Medicine | [Original Investigation](#)

## Effect of an In-Hospital Multifaceted Clinical Pharmacist Intervention on the Risk of Readmission A Randomized Clinical Trial

Lene Vestergaard Ravn-Nielsen, MSc(Pharm); Marie-Louise Duckert, MSc(Pharm); Mia Lolk Lund, MSc(Pharm); Jolene Pilegaard Henriksen, MSc(Pharm); Michelle Lyndgaard Nielsen, MSc(Pharm); Christina Skovsende Eriksen, MSc(Pharm); Thomas Croft Buck, MSc(Pharm); Anton Pottegård, MSc(Pharm), PhD; Morten Rix Hansen, MD; Jesper Hallas, MD, DMSc

# 2018 Danish RCT – Multi-faceted Clinical Pharmacist Intervention – and Risk of Readmission

LV Ravn-Nielsen et al, *JAMA Intern Med.* Published online January 29, 2018.

## Control:

- Usual care (no pharmaceutical evaluation by clinic pharmacist)

## Basic intervention:

- A basic, patient-centered **medication review conducted by clinical pharmacist**, after patient was admitted, after laboratory data became available, and primary admission note was written
- All drugs on medication list were **assessed** by indication, drug dose, adverse drug events, therapeutic duplication, dosage time and interval, interactions, contraindications, precautions and patient characteristics

## Extended intervention:

- Basic intervention PLUS
- **Medication reconciliation on discharge** (30-minute interview with motivational interview approach including comprehensive summary of changes in medication)
- DTPs not dealt with during hospitalization were mailed or faxed after discharge to patient's PCP
- **Discharge summary** communicated to PCP and nursing home or care provide, and primary pharmacy (with follow-up phone call 3 days after discharge if changes in medication occurred during admission)
- Motivational intervention in **follow-up phone call one week after discharge and 6 months after discharge** (additional follow-up could be arranged)

# 2018 Danish RCT – Multi-faceted Clinical Pharmacist Intervention – and Risk of Readmission

LV Ravn-Nielsen et al, *JAMA Intern Med.* Published online January 29, 2018.

## Main results:

- 1873 patients eligible, 1499 accepted
- Control n=498, basic intervention n=493, extended intervention n=476
- **38% ↓ in readmission within 30 days** in extended intervention group vs. control (extended intervention = 68 visits, control = 111 visits, HR 0.62, CI 0.46-0.84)
- **25% ↓ in readmission within 180 days** in extended intervention group vs. control (189 vs 243 visits, HR 0.75, CI 0.62-0.90)
- No significant decrease in drug-related readmissions within 30 days, drug-related readmissions within 180 days, drug-related deaths within 180 days, ED visits
- **NNT = 12** (extended intervention to prevent 1 post-discharge readmission)
- **NNT = 65** (basic intervention to prevent 1 post-discharge readmission)

# 2016 Pharmacist Led Med Rec Meta-Analysis

Mekonnen *BMJ Open* 2016 Feb 23;6(2):e010003.



Open Access

Research

## BMJ Open Effectiveness of pharmacist-led medication reconciliation programmes on clinical outcomes at hospital transitions: a systematic review and meta-analysis

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Alemayehu B Mekonnen,<sup>1,2</sup> Andrew J McLachlan,<sup>1,3</sup> Jo-anne E Brien<sup>1,4</sup>

# 2016 Pharmacist Led Med Rec Meta-Analysis

Mekonnen *BMJ Open* 2016 Feb 23;6(2):e010003.

- **Methods: effect of pharmacist-led medication reconciliation (MedRec) programs on clinical outcomes at hospital transitions**

## **Key Results**

- included **17 studies involving 21 342 patients**, their findings
- highlight significant reductions in (intervention vs. usual care):
  - all-cause **adverse drug event-related hospital revisits (67%)** [ RR 0.33 95% CI 0.20-0.53 ]
  - all-cause **emergency department visits (28%)** [ RR 0.72 95% CI 0.57-0.92 ]
  - all-cause **hospital readmissions (19%)** [ RR 0.81 95% CI 0.70-0.95 ]
  - while pooled data on **mortality** did not detect a difference

## **Comment**

- Although previous systematic reviews had found significant impacts of MedRec on potential adverse drug events and medication discrepancies, they had found inconsistent results on health care utilization, as they had not focused only on pharmacist-led interventions

# Proving Your Worth in 2019: context and alignment for cpKPI -Provincially, Nationally and Locally

## Provincially

- MOHTLC + **LQ2F 2018** (Linking Quality to Funding)
- **Ontario College of Pharmacists/ Health Quality Ontario - Community Pharmacy Indicator Roundtable (transitions in care)**
- MOHLTC- 2018 Summit, increased emphasis on indicators + patient outcomes / readmission

## Nationally

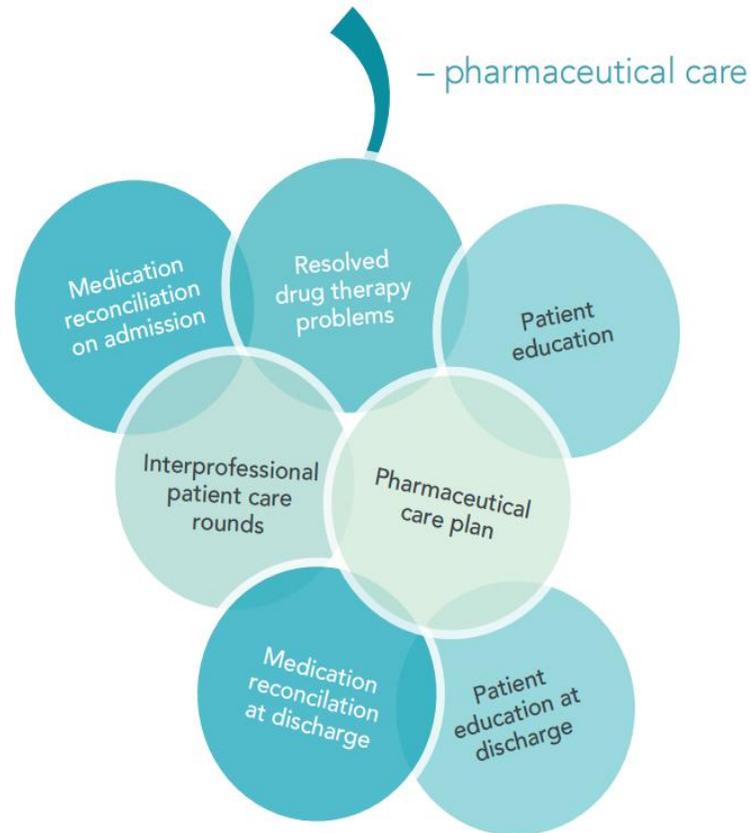
- **National registry for cpKPI (2019)**
- **CSHP National – CSHP Excellence Program- includes 6/8 cpKPIs**
- **Hospital Pharmacy in Canada Report (2018)**

# MOHLTC Ontario 2018/19 -LQ2F- Linking Quality to Funding

## Quality Domains- 5 Indicators

1. **Patient-centered** Did you feel that there was good communication about your care between doctors, nurses, and other hospital staff?
2. **Patient-centered** Before you left the hospital, did you have a clear understanding about all of your prescribed medications, including those you were taking before your hospital stay?
3. **Patient-centered** Did you receive enough information from hospital staff about what to do if you were worried about your condition or treatment after you left the hospital?
4. **Safe: Medication reconciliation at discharge**
5. **Effective** : Readmission within 30 days for selected Health-Based Allocation Model (HBAM) Inpatient Grouper (HIG) - AMI, cardiac conditions (excluding heart attack), CHF, COPD, pneumonia, diabetes, stroke, gastrointestinal disease.

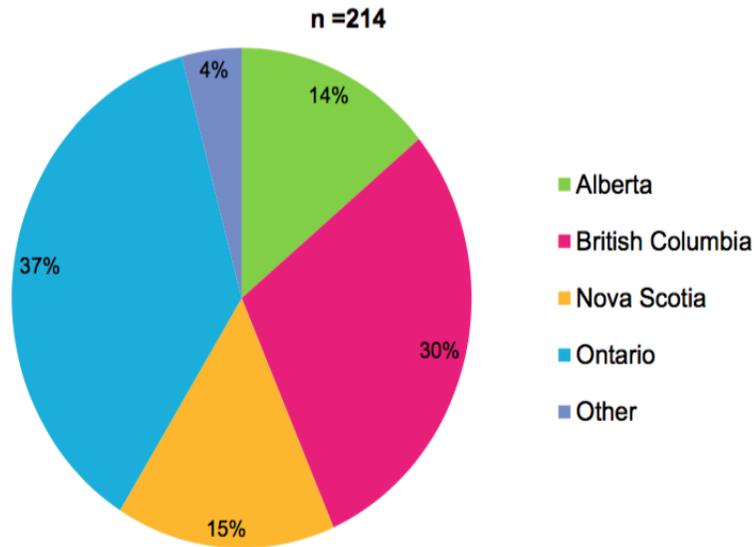
# Which cpKPI grapes are the most important to patients vs. interprofessional team vs. hospital pharmacists?



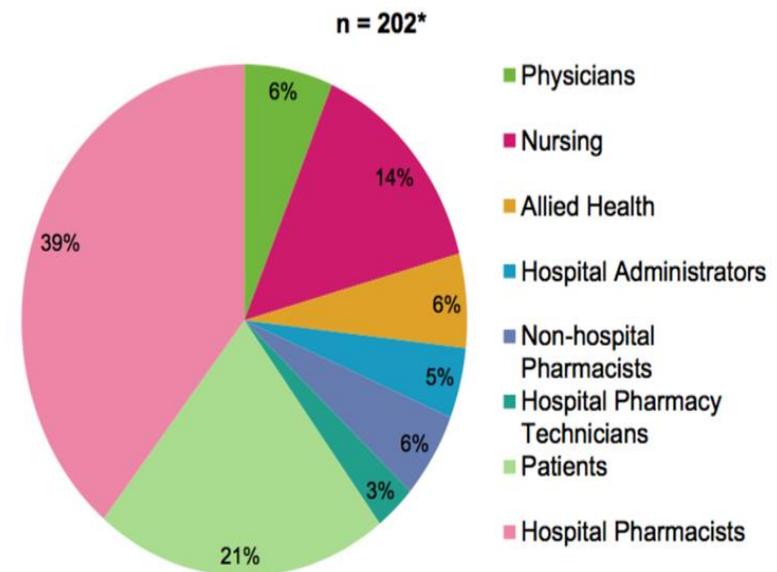
# How Do Patient, Pharmacist and Interprofessional Stakeholders Perspectives on cpKPI Compare?

## Quantitative Results:

**Figure 1. Provincial Representation of All Participants**



**Figure 2. Stakeholder Breakdown**



Mourao D, Raymond C, Slobodan J, Gorman S, Meade A, Toombs K, Attfield E, Sykelyk A, Newman J, Nghiem C, Law V, Saad M, Fernandes O. How Do Patient, Pharmacist and Interprofessional Stakeholder Perspectives on Clinical Pharmacy Key Performance Indicators Compare Across Canada? [Abstract] *Can J Hosp Pharm* 2017

# Patient and Interprofessional -Feedback Results

- **89%** of respondents strongly agreed/agreed that “measuring these cpKPI for hospital pharmacists will be useful in advancing practice to improve the quality of patient care”
- **Prioritization of the cpKPI varied among stakeholder subgroups and across provinces**

**Table 1. cpKPI Ranked Most Important by Stakeholder Subgroup and Province**

Province	Interprofessional Stakeholders (n = 88*)	Patients (n = 39*)	Hospital Pharmacists (n = 76*)
<b>AB</b>	Admission medication reconciliation (50%, 14/28)	N/A* <small>*patients not recruited at this study site</small>	Pharmaceutical care plan (100%, 2/2)
<b>BC</b>	Patient education at discharge (58%, 7/12)	Bundled patient care interventions (40%, 6/15)	Admission medication reconciliation (55%, 18/33)
<b>NS</b>	Discharge medication reconciliation (50%, 11/22)	Discharge medication reconciliation (60%, 6/10)	Bundled patient care interventions (100%, 1/1)
<b>ON</b>	Admission medication reconciliation (62%, 18/29)	Patient education at discharge (47%, 8/17)	Drug therapy problems resolved (68%, 21/31)
<b>Pooled (National)</b>	<b>Admission medication reconciliation (47%, 41/88)</b>	<b>Discharge medication reconciliation (51%, 20/39)</b>	<b>Drug therapy problems resolved (63%, 48/76)</b>

Mourao D, Raymond C, Slobodan J, Gorman S, Meade A, Toombs K, Attfield E, Sykelyk A, Newman J, Nghiem C, Law V, Saad M, Fernandes O. How Do Patient, Pharmacist and Interprofessional Stakeholder Perspectives on Clinical Pharmacy Key Performance Indicators Compare Across Canada? [Abstract] *Can J Hosp Pharm* 2017

# Development of a Canadian (cpKPI) Registry and Implementation of National cpKPI Reporting, Measurement and Pooled Analysis

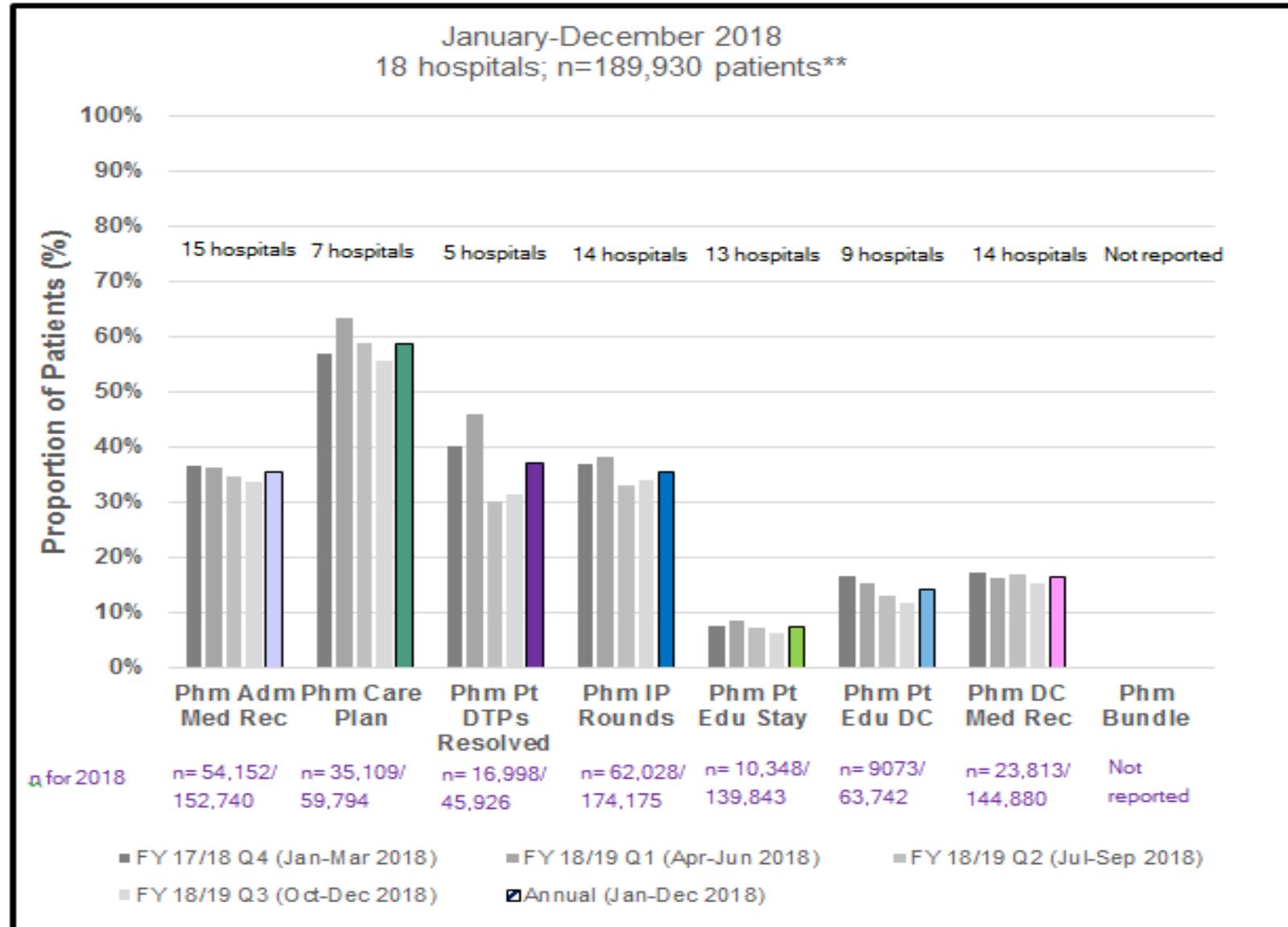
## Provinces Represented By 31 Participating Hospitals



### Primary objectives:

This study aimed to design and develop a national cpKPI registry and generate pooled national summary cpKPI reports that can be used to inform the advancement of pharmacy practice and improve the quality of patient care.

# Pooled Proportion Of Patients Receiving Each cpKPI In Canada In 2018 [Core Analysis]



\*Core analysis- includes only acute care hospitals who continuously measured patient proportion cpKPIs in 2018

\*\*Patient= Included higher number of admissions and discharges to represent a value for the graph

# How Can Pharmacists Prove their Worth? UHN Experience

## Real Life Local Data

How can cpKPI data help?

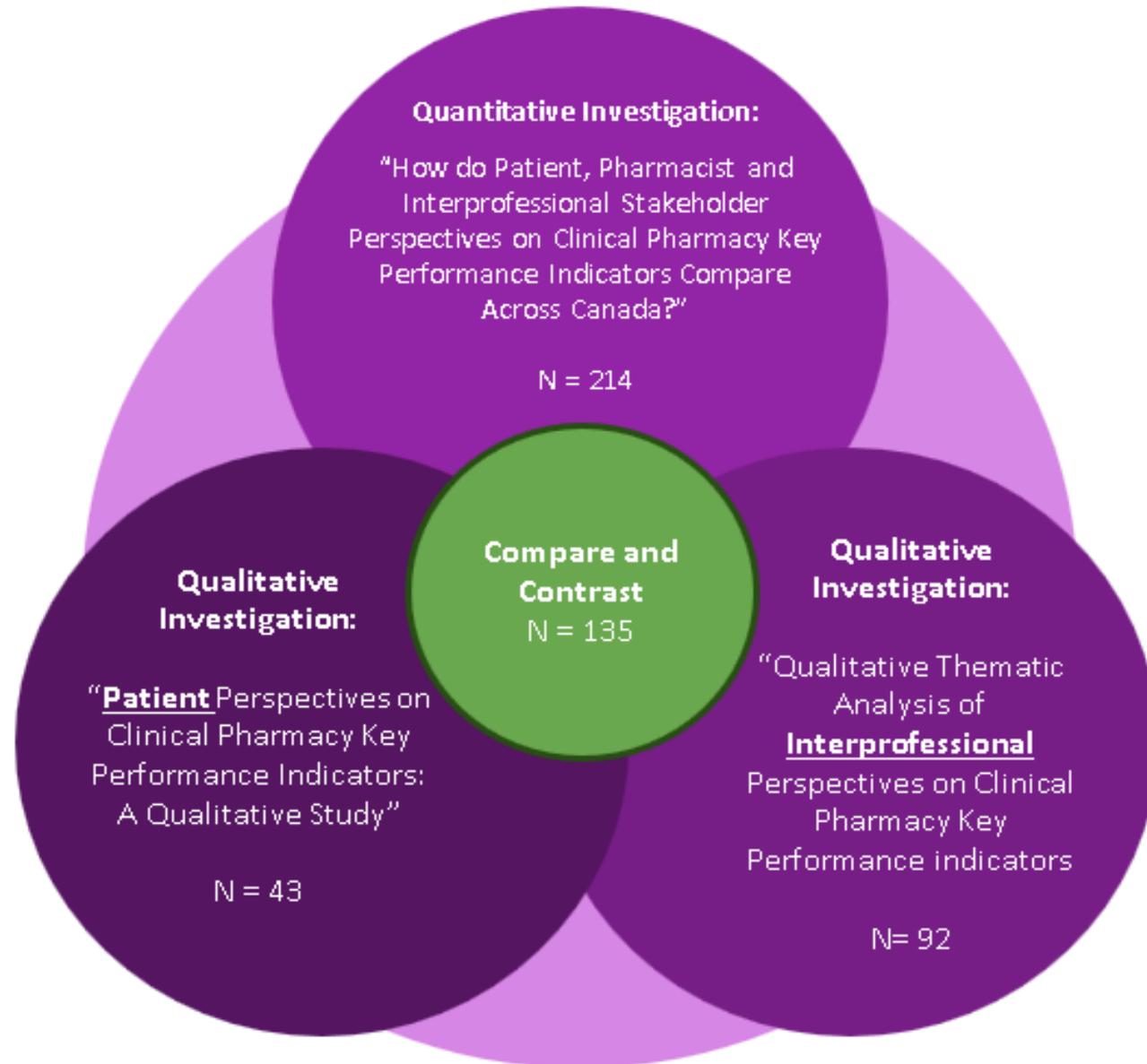
- LQ2F- Linking Quality to Funding
- Real Life benchmarking – how does that translate to real patient outcomes – observational studies & extrapolation to actual patient outcomes
- Business case support - new wards or proposed patient bed reductions
- Extrapolate cpKPI – impact on real outcomes (readmissions, DTPs resolved-patient interventions, high value action item- DTPs resolved, health system cost savings)
- Workload measurement/ MIS



# Panel – Q an A Back Up Slides

Patient and Interprofessional Feedback on the Value of Pharmacy  
cpKPI- Qualitative Feedback

# N= 214 national participants (n=43 patients + 92 interprofessional stakeholders)



## Results: Patient Feedback on cpKPI - Themes

**Table 1. Themes from Patient Participant Feedback on cpKPI**

Themes	# Participants
Education is welcome at any time	34
Patients want use of layman's terms	21
All cpKPIs are important	18
cpKPI-related activities prevent DTPs	14
More is better and stay with patient for journey in hospital	12
cpKPI-related activities improve outcomes and quality of life	9
Patients learned about hospital pharmacist roles during study	7
Timing of cpKPI delivery is important, sometimes	6
Patients want post-discharge follow-up	4
DTP resolution is a unique pharmacist role	3
Patients felt empowered by providing feedback	3

## Results: Patient Feedback on cpKPI – Quotes

### **Table 2. Quotes to Support Selected Themes**

**Education any time:** “[I want] more information on pills when I’m being discharged or in hospital” (Participant BC161)

**Layman’s terms:** “... the meaning of reconciliation... resolution... discrepancy... I have a hard time putting those together to get the meaning of it” (Participant BC155)

**All cpKPIs important:** “My goodness! It’s very hard to decide which one is more important. They all seem to be very, very important” (Participant ON001)

**More is better:** “They shouldn’t get just 1 or 2. They should get them all... if you’re going to get the service at the admission you should get the discharge and in-between” (Participant BC155)

**Patients learned about pharmacist roles:** “I always thought doctors tell you what to take and the pharmacist fills the prescription. I didn’t realize that the pharmacist has some input or could have some input ” (Participant NS7007)

## Results: Interprofessional Feedback on cpKPI - Themes

<i>Table 1. Themes from Interprofessional Participant Feedback on cpKPI</i>	
Themes	# Participants
<b>cpKPIs are important to support the need for pharmacists and their patient care role</b>	<b>65</b>
<b>There is a shared interprofessional responsibility for delivering cpKPI-related care</b>	<b>28</b>
cpKPIs should be tailored and prioritized for patient populations that would benefit the most from its implementation	28
<b>Improvement suggestions for cpKPI descriptions</b>	<b>26</b>
There are challenges to measuring cpKPIs	24
cpKPIs are interdependent and overlapping care processes	18
There needs to be collaboration with community pharmacists for continuity of cpKPIs post-discharge	14
The pharmacist's care plan needs to be documented, shared, and integrated with the team's care plan	6