Design, Implementation and Evaluation of a Clinical Pharmacy Key Performance Indicator Tracker: DIE-cpKPI Study

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Background

Canadian Consensus Clinical Pharmacy Key Performance Indicator (cpKPI) Activities (2015)

1. Reconcile admission medications
2. Actively participate in interprofessional care rounds
3. Develop and initiate a pharmaceutical care plan
4. Resolve drug therapy problems
5. Educate patients during their hospital stay
6. Reconcile discharge medications
7. Educate patients at discharge
8. Provide comprehensive collaborative patient care

cpKPI Tracker

- A cpKPI tracker is required to focus and advance pharmacy practice to improve patient care, and is useful for patients, pharmacists, and managers

Theory-Informed Behavior Change Intervention (BCI)

- Systematic theory-informed approach using validated tools is required to design, implement, and evaluate a BCI to implement a cpKPI tracker
- Pharmacist cpKPI tracking in electronic health record is defined behavior
- Capability (psychological and physical), Opportunity (physical and social), Motivation (reflective and automatic) (COM) are sources of behavior
- Theoretical Domains Framework (TDF) is a validated tool that expands COM into 14 domains to identify enablers and barriers to behavior change
- Quantitative (questionnaire), and qualitative (interview) can be used to collect data on pharmacist perceptions of enablers and barriers
- TDF domains with enablers and barriers can be mapped to proven BCI
- BCI can be selected using APEASE criteria: Affordability, Practicality, Effectiveness and cost-effectiveness, Acceptability, Safety, Equity
- TIDieR checklist can be used to report content, volume, and delivery of BCI and promote replicability and generalizability

Objectives

- To evaluate the effectiveness of a BCI to implement a cpKPI Tracker
- To evaluate the effectiveness of a BCI to implement a cpKPI Tracker across TDF domains
- To describe clinical pharmacist satisfaction with the BCI

Methods

Design

- Quasi-experimental, one group, PRE/POST study

Setting

- Acute sites with IH clinical pharmacists: KGH, VJH, PRH, SOGH (Jan 30-Jun 2/17)

Inclusion Criteria

- All inpatient clinical pharmacists participated in electronic quantitative PRE/POST BCI questionnaire and POST satisfaction survey
- Five inpatient clinical pharmacists purposefully sampled for qualitative PRE interview

Exclusion Criteria

- Data from any un-paired questionnaires, or interview, and satisfaction survey data that is incomplete or un-interpretable was excluded from data analysis

Intervention (Figure 1)

- DIE-cpKPI study took place in 3 distinct and sequential phases:

1. Design of BCI based on behavior change theory and tools (Jan 30 – Apr 2/17)
2. Implementation of BCI to IH clinical pharmacists (April 3 - 17/17)
3. Evaluation of BCI implementation (Apr 18 – Jun 2/17)

Primary Outcome

- Mean difference in paired PRE/POST overall BCI questionnaire scores based on 7-point Likert scale from 1 (strongly agree) to 7 (strongly disagree)

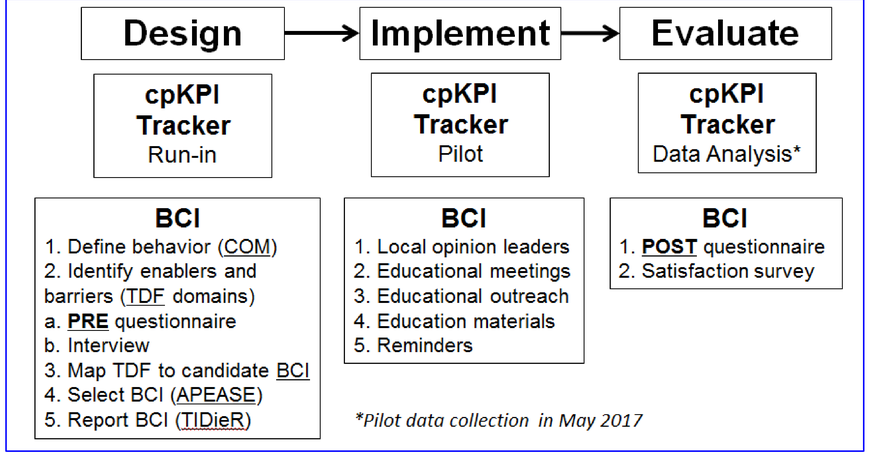
Secondary Outcomes

- Mean difference in paired PRE /POST BCI questionnaire scores across TDF domains
- Proportion of clinical pharmacists at least "somewhat satisfied" with the BCI (score of at least 3) on 7-point Likert scale from 1 (strongly satisfied) to 7 (strongly dissatisfied)

Statistical Analysis

- PRE/POST BCI questionnaire scores were described using means (95% CI), and compared using a student t-test for matched pairs

Figure 1. Methods Overview



Results

Table 1. BCI Questionnaire Participant Characteristics

	Pharmacists [n(%)]
Hospital Type	
Tertiary	15 (63%)
Regional/Community	9 (37%)
Highest Professional Training	
B.Sc.(Pharm)	4 (17%)
Residency	13 (54%)
PharmD	7 (29%)
Practice Years	
Less than 5 years	11 (46%)
5-10 years	4 (17%)
Greater than 10 years	9 (37%)

Figure 2. Overall BCI Questionnaire Scores

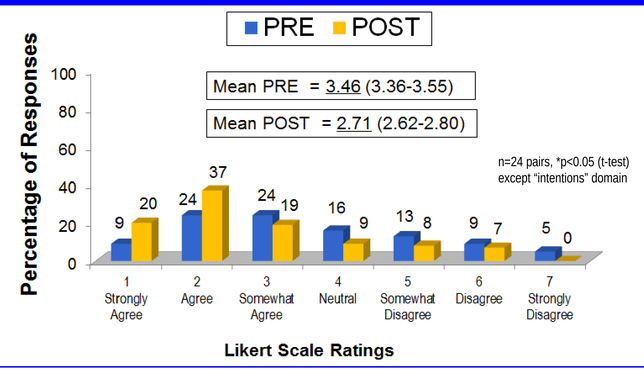
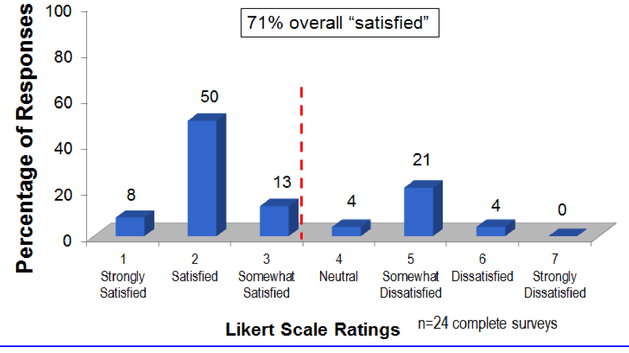


Figure 3. Overall Satisfaction Scores



Conclusions

- Participants representative of IH clinical pharmacists
- BCI significantly reduced perceived barriers to clinical pharmacists using cpKPI tracker
- BCI significantly reduced perceived barriers across all TDF domains except "intentions"
- Most pharmacists satisfied with implementation of BCI
- Future focus group discussions with pharmacists and pilot data analysis still required