

Contribution of Hospital Pharmacy Residents to Resolution of Drug Therapy Problems for Patients: Res-DTP Study

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Background

Clinical Pharmacists

- Clinical pharmacists resolving drug therapy problems (DTPs) for patients improve the overall quality of drug therapy, clinical, and health economic outcomes
- In 2013, Interior Health (IH) pharmacists resolved 29,909 DTP, 12,017 DSEM-DTP (40%), and 7,448 (25%) DSEM-KPI for their patients

Clinical Pharmacy Key Pharmacist Interventions (cpKPI)

- A Canadian National Working Group has recently recommended 8 clinical pharmacy key performance indicators (cpKPI) to advance pharmacy practice and improve the quality of patient care:

1. Performing admission medication reconciliation
2. Participating in inter-professional patient care rounds
3. Initiating a pharmaceutical care plan
4. Resolving drug therapy problems (DTPs)
5. Providing in-person disease and medication education
6. Providing discharge medication education and counseling
7. Performing discharge medication reconciliation
8. Providing bundled, proactive patient care

Clinical Contribution of Pharmacy Practice Residents

- Providing evidence-based clinical activities and resolving DTPs is a major professional development goal for the IH Pharmacy Practice Residency Program
- Limited data suggest that U.S. entry to practice Pharm.D. students and residents may contribute to clinical care during experiential rotations
- There are no data on the contribution of Canadian pharmacy practice residents to clinical activities or resolved DTPs during experiential rotations
- There is discordance on the perception of resident contributions to DTP resolution amongst pharmacists and managers at IH

Objectives

- To describe the contribution of IH pharmacy practice residents to clinical pharmacy care using resident-resolved DTPs
- To describe resident satisfaction with tracking their resolved DTPs

Methods

Design

- Prospective, observational, one group study

Setting

- Kelowna General Hospital (KGH), Royal Inland Hospital (RIH), Penticton Regional Hospital (PRH), East Kootenay Regional Hospital (EKH), and Kootenay Lake Hospital (KLH) from Sept 2, 2013 to Jun 13, 2014 (6 clinical rotations)

Inclusion Criteria

- DTP Tracker data collated from all 4 IH hospital pharmacy residents after the completion of the first 4 week patient care rotation (i.e. Internal Medicine rotation)

Exclusion Criteria

- DTP Tracker data that is uninterpretable due to manipulation of standard pull-down field options, free text options, incomplete entry of resolved DTPs

Definitions

- Total DTP:** Any DTP resolved by a pharmacist
- DSEM-DTP:** DTP resolved for a condition covered in any of the 8 priority disease state education modules (DSEMs) delivered to IH pharmacy staff:
 1. Pneumonia
 2. Heart failure
 3. Chronic obstructive pulmonary disease
 4. Ischemic heart disease
 5. Diabetes mellitus
 6. Urinary tract infection
 7. Gastroesophageal reflux disease/peptic ulcer disease
 8. Atrial fibrillation
- DSEM-KPI:** A key pharmacist intervention proven to reduce morbidity, mortality, or health resource utilization for that disease (e.g. Initiating or titrating an angiotensin converting enzyme inhibitor (ACE-I) for heart failure)

Primary Outcome

- Number of resident-resolved DTPs

Secondary Outcomes

- Number of resident-resolved DSEM-DTPs
- Number of resident-resolved DSEM-KPIs
- Progression of resident-resolved DTPs, DSEM-DTPs, and DSEM-KPIs over time
- Survey feedback on resident satisfaction with the training, usability, efficiency, and time requirements of DTP tracking

Statistical Analysis

- Descriptive statistics with median and ranges provided for ordinal survey data
- 1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree
- Overall satisfaction across each of the 4 survey domains (Y/N)

Results

Table 1. Resident-resolved DTPs

Outcome	Number (%)
1° Total DTP	581
2° DSEM-DTP	298 (51%)
2° DSEM-KPI	241 (42%)

*Interim analysis of 12 clinical rotations (50%) for 4 residents: Internal Medicine, community medicine, rural medicine (2), ambulatory care (2), nephrology (2), cardiology (3), critical care

Figure 1. Resident-resolved DTPs over time

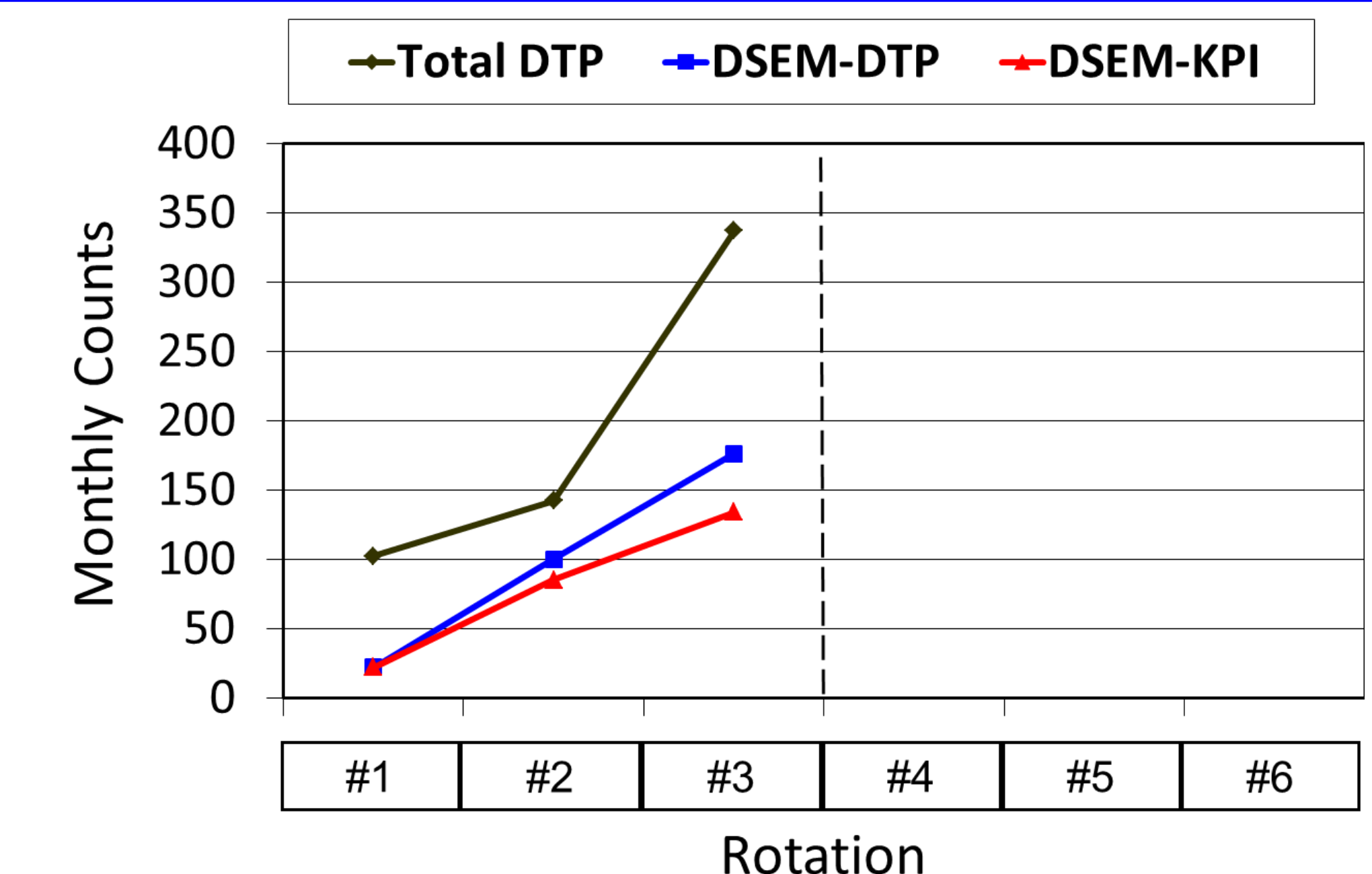
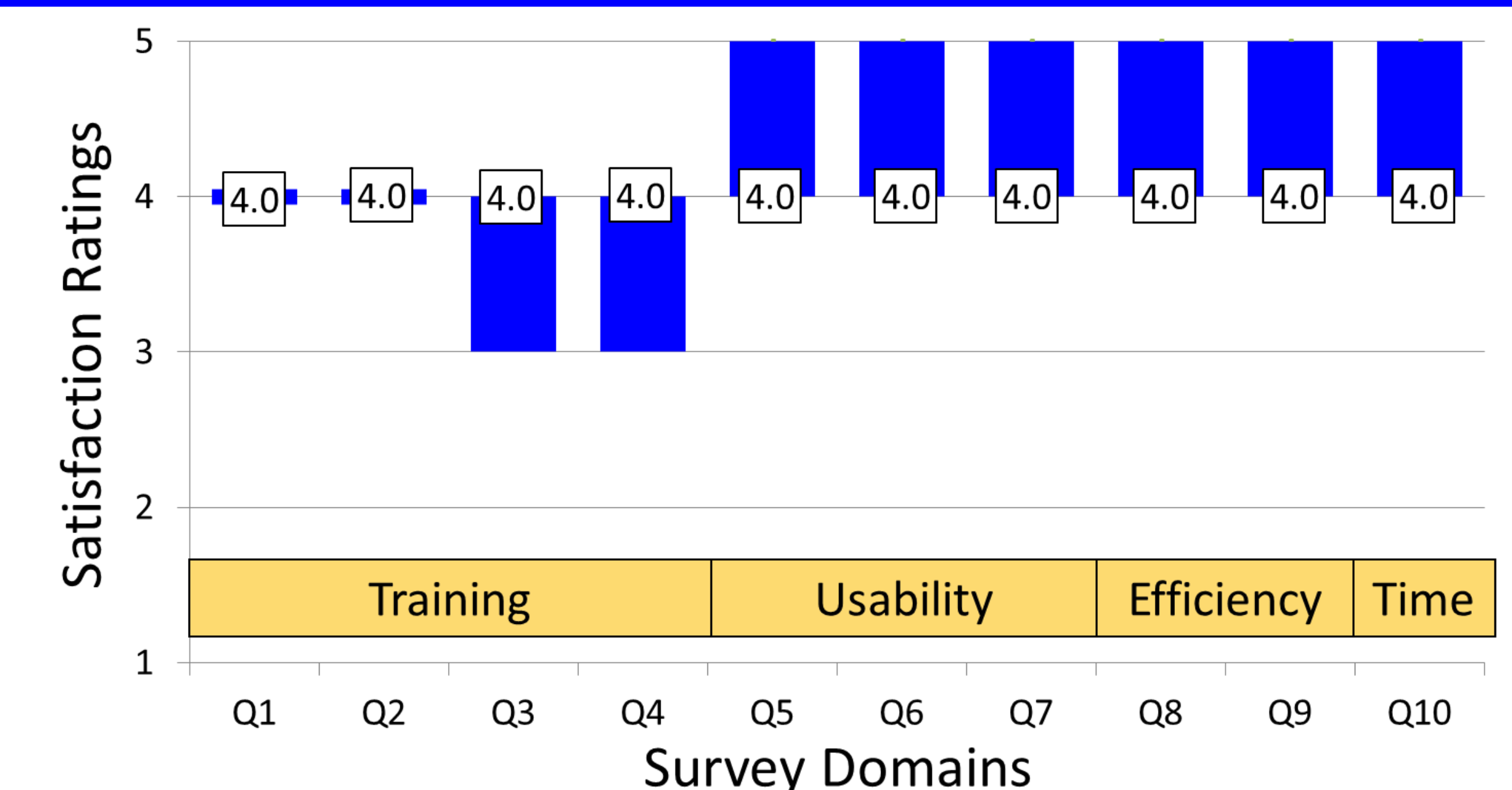


Figure 2. DTP Tracker satisfaction survey



Conclusions

- IH Pharmacy practice residents are resolving DTPs, DSEM-DTPs, DSEM-KPIs
- Resident interventions have increased over time throughout the residency year
- The number and type of these resident interventions would be expected to improve clinical and health economic outcomes for patients
- DTP tracking was well-accepted based on training, usability, efficiency, and time

