Improving ICU clinical pharmacist handover process using a pharmacotherapy-specific tool: The HAndover Process in PharmacY (HAPPY) Study.

Emma Attfield, B.Sc.(Pharm), Matthew Swankhuizen, B.Sc.(Pharm), PharmD; Sean Gorman, B.Sc.(Pharm), PharmD; Richard Slavik, B.Sc.(Pharm), PharmD; Nicole Bruchet, B.Sc., B.Sc.(Pharm), PharmD.

Background

- Critical care (ICU) pharmacists provide pharmaceutical care to critically-ill patients, for which the identification and resolution of drug therapy problems reduces the incidence of ventilator-associated pneumonia, adverse drug reactions, shortens duration of hospitalization, and reduces mortality.
- Pharmacotherapy plans should be transferred to the receiving pharmacist upon ICU discharge to maintain continuity of care.
- Standardized handover reduces preventable adverse events and errors, and increases provider satisfaction and timeliness of care.
- There is no published literature addressing the development or evaluation of a standardized pharmacist handover process or tool.

Objectives

- Primary Objective: To assess *pharmacist satisfaction* with a pharmacotherapy-specific handover process and tool.
- Secondary Objective: To describe *pharmacist utilization* of a pharmacotherapy-specific handover process and tool.

Methods

Design

- Internet-based survey questionnaire

Setting, Sampling, Timeframe

- Five hospitals within the Interior Health Authority in British Columbia
- Purposive sampling of clinical pharmacists
- Study occurred over 7 weeks from February 15 to April 22, 2016

Inclusion Criteria

- ICU clinical pharmacists assigned to an ICU with ≥ 4 beds
- Medical/surgical clinical pharmacists with ≥ 1 ICU transfer per week

Handover Process and Tool Development

- The first iteration of the process/tool was created by investigators.
- Training was provided using a recorded voiceover presentation.
- Two cycles of a plan-do-study-act methodology were conducted, each involving an implementation period followed by a focus group.
- The final iteration of the process/tool was implemented for 3 weeks, then evaluated by participants via a survey questionnaire.

Primary Outcome

- % satisfied or very satisfied, on a 5-point Likert scale, regarding:
  - Usability
  - Training
  - Organization
  - Accuracy
  - Completeness
  - Efficiency

Secondary Outcomes

- Workload outcomes, including:
  Time to conduct handover, number of handovers per week
- Communication outcomes, including:
  Communication type utilized, communication type preferred

Methods

I-H.A.P.P.Y. CHECKLIST TOOL

I

1. Identification
- ☐ Full Name ☐ Age ☐ Gender

H

2. History
- ☐ Date of admission to ICU
- ☐ Reason for admission to ICU
  - ☐ Was reason for admission *drug-related?*
- ☐ Allergies
- ☐ Past Medical History
- ☐ Medications prior to admission
- ☐ Date of transfer or anticipated transfer out of ICU

A

3. Actual and Potential DTP's
- ☐ List current medical conditions and current medications for each condition
- ☐ Actual and Potential DTP's
  - ☐ Refer to *"Common Issues in ICU Handover"*
- ☐ Action plan to resolve DTP's

P

4. Patient or Family Needs
- ☐ Education and counselling requirements during hospital stay or at discharge
- ☐ Patient preferences and beliefs with respect to drug therapy

P

5. Pharmacist to Contact Healthcare Providers
- ☐ Need for community pharmacist contact
- ☐ Need for family physician contact

Y

6. Your Questions
- ☐ Answer all remaining questions posed by the receiving pharmacist

Figure 1. Trial Flow Diagram

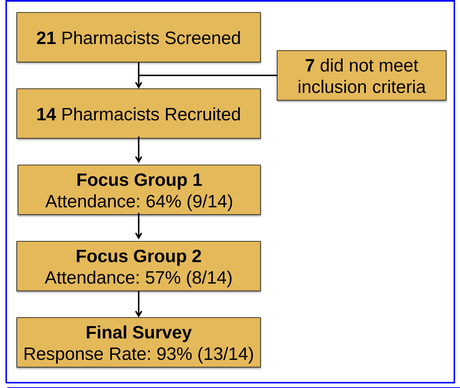

Table 1. Baseline Characteristics

Pharmacist Type	n = 14
ICU Pharmacists	4 (29%)
Ward Pharmacists	10 (71%)
Years of Clinical Experience	**%**
< 5 Years	**85%**
5 to 10 Years	8%
> 10 Years	8%
Handover Prior to I-H.A.P.P.Y.	**%**
No handover	0%
Occasional handover	**92%**
Consistent Handover	8%

Figure 2a. Primary Outcome: Satisfaction

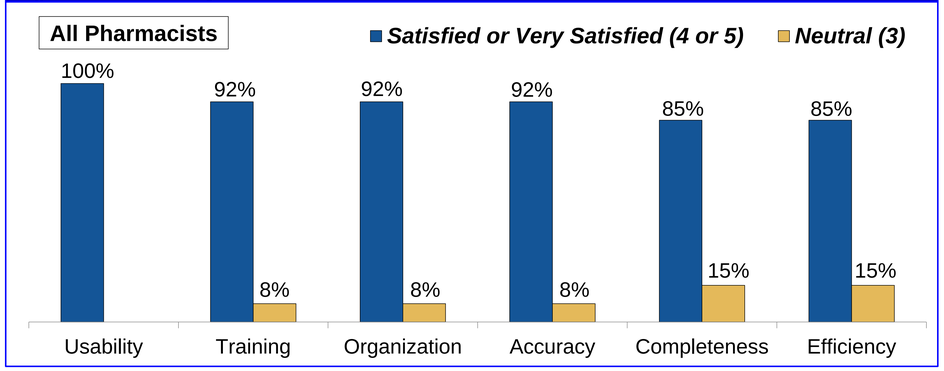

Figure 2b. Primary Outcome: Satisfaction

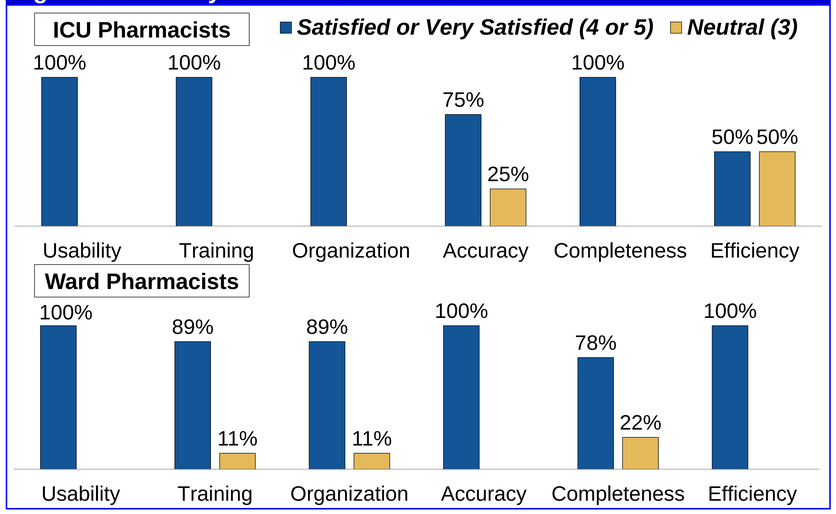

Table 2. Secondary Outcomes: Workload and Communication

Time to Conduct Handover (%)		Number of Handovers/Week (%)	
≤ 2 min	8%	**≤ 2 transfers**	**77%**
3 to 5 min	**62%**	3 to 5 transfers	23%
5 to 10 min	31%	5 to 10 transfers	0%

Communication Type Utilized (%)	All Pharmacists	ICU Pharmacists	Ward Pharmacists
Face-to-face only	**38%**	**50%**	**33%**
Mostly face-to-face	8%	0%	11%
Phone only	31%	25%	**33%**
Mostly phone	23%	25%	22%
Both phone and face-to-face equally	0%	0%	0%

Communication Type Preferred (%)	All Pharmacists	ICU Pharmacists	Ward Pharmacists
Face-to-face	**46%**	**75%**	33%
Phone	23%	25%	22%
Both phone and face-to-face equally	31%	0%	**44%**

Limitations

- Small sample size, researcher bias, responder bias

Conclusions

- Clinical pharmacists were satisfied with the handover process and tool.
- ICU and ward pharmacists appeared equally satisfied with usability.
- ICU pharmacists appeared more satisfied with training, organization, and completeness.
- Ward pharmacists appeared more satisfied with accuracy and efficiency.
- Workload associated with the handover process appears acceptable.
- Face-to-face handover was slightly less well-utilized than phone communication, but was the most preferred communication method.
- Future research will evaluate the impact of the process and tool on clinically-relevant and process-related outcomes.