CENTRE FOR HEALTHCARE INNOVATION

CHI Learning & Development System (CHILD)

Project Title

Inpatient Medication Reconciliation Training Programme for Pharmacy Technicians

Project Lead and Members

- Fong Seow Ying
- Xu Meng

Organisation(s) Involved

KK Women's and Children's Hospital

Project Category

Workforce Redesign, New Pedagogy

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Name and Email of Project Contact Person(s)

Name: Fong Seow Ying, Pharmacy, KKH

Email: Fong.Seow.Ying@kkh.com.sg

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Inpatient Medication Reconciliation Training Programme for Pharmacy Technicians

Fong Seow Ying, Xu Meng
Department of Pharmacy

KK Women's and Children's Hospital
SingHealth

INTRODUCTION

- Medication reconciliation (MR) is an integral part of medication safety initiative in all hospitals.
- Medication reconciliation refers to the process of comparing a patient's new medication orders to all of the medications that the patient is currently taking to avoid any discrepancies in therapy.[1]
- While current literature validates the essential role of pharmacist involvement in MR, time and manpower constraints are significant barriers to active pharmacist engagement. This, in turn, promotes opportunities for the expansion of roles of pharmacy technicians (PTs) to perform MR.[2-5]

OBJECTIVE

- This training programme aims to empower inpatient PTs to take on expanded roles in performing MR with appropriate pharmacists' supervision so as to decrease medication discrepancies and improve transition of care.

METHODS

- Full-time PTs from Women's Inpatient Pharmacy in KK Women's and Children's Hospital were enrolled in the training programme.

Step 1: Education
- Self-directed online learning via the Singhealth's e-blackboard portal
  - Selected pharmacotherapy topics include: Asthma, Hypertension, Diabetes Mellitus, Dyslipidemia, Osteoporosis, Thyroid disorders, Hormonal therapy for cancer
- Discussion session on steps required to perform an appropriate MR

Step 2: Theory test
- Theory test(s) to gauge competency in the relevant pharmacotherapy concepts and MR techniques with passing score of 70%
  - Comprises of 10 multiple-choice questions, 3 True/False questions, 5 open-ended questions

Step 3: Practical test
- A minimum of 5 attempts of MR under pharmacists' supervision
  - PTs to first observe MR interviews performed by pharmacists
  - Refer to Table 1 for the eligibility criteria of patients selected
  - Refer to Figure 2 for the checklist that each PT had to complete
  - Refer to Figure 3 for the process of performing MR

Figure 1. Overview of the training programme

Table 1. Patient inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
• Taking 5 or less chronic medications excluding supplements • Taking selected classes of medications: ○ Anti-asthma ○ Cardiovascular (i.e. anti-hypertensives, anti-diabetic agents, drugs for dyslipidemia, anti-platelets) ○ Drugs for osteoporosis ○ Thyroid medications ○ Medications for common gastrointestinal conditions ○ Hormonal therapy for cancer (e.g. Tamoxifen, Letrozole, Megestrol) ○ Vitamin and mineral supplements	• Patients with unstable/impaired renal or hepatic function • Taking medications not mentioned in inclusion criteria (e.g. anticoagulants, immunosuppressants, psychiatric drugs, and anti-epileptic drugs etc.)

Checklist for Medication Reconciliation (MR)

Deadline	To complete
31st March 2018	Perform at least 5 Full Med Recon=> pharmacists to sign off competency checklist

Types of MRs:	Completed & supervised by:	Date of completion:
Full (CVS) *Please indicate: _____		
Full (CVS) *Please indicate: _____		
Full (Asthma)		
Full (Osteoporosis)		
Full (Hormonal therapy for cancer)		

**CVS includes anti-hypertensives, anti-diabetics, drugs for dyslipidemia, and anti-platelets. Please attempt FULL MRs with all classes of cardiovascular drugs.*

**Additional attempts may be required for any categories if is not satisfactory.*

Figure 2. Competency checklist

Retrieval of medication history from the National Electronic Health Records (NEHR)

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Comparison with medications ordered in Sunrise Clinical Manager System (SCM)

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Conducting patients' interviews and physical check of medications that were brought in to the hospital

Figure 3. Process of MR

- A post-training survey was also administered to gather feedback on the effectiveness of the programme.

RESULTS

- Five PTs were trained by 2 pharmacists from July 2017 to April 2018.
- Relevant learning materials were provided online and additional discussion sessions were held as needed. All passed the theory test(s) within 2 attempts.
- All had at least 5 attempts of MR assessed and deemed competent by pharmacists.
- Figures 4 to 6 below depict the results of the post-training survey, with 80% feeling satisfied with the training programme and confident in immediate application of what was learnt.

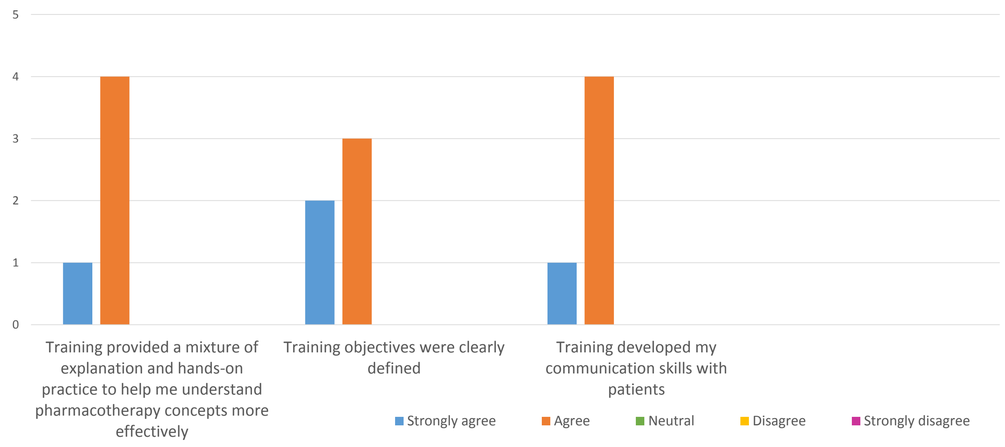

Figure 4. Post-training survey responses- Training objectives and quality

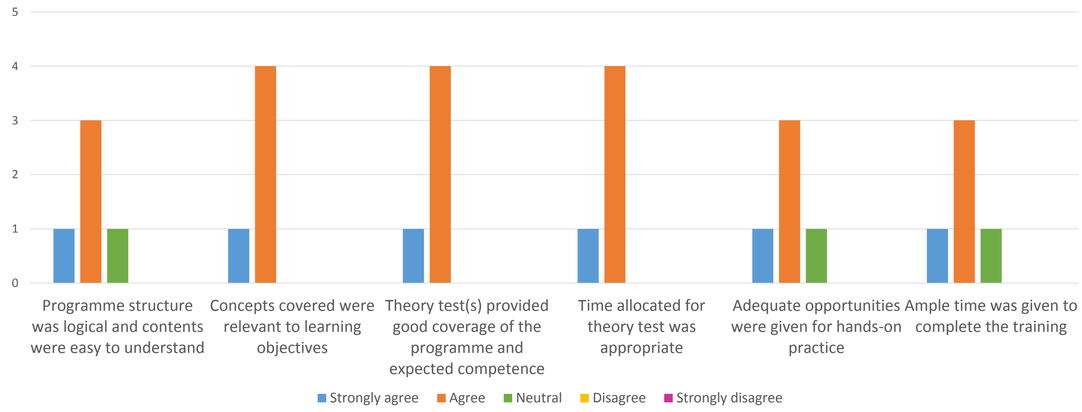

Figure 5. Post-training survey responses- Course content and assessment

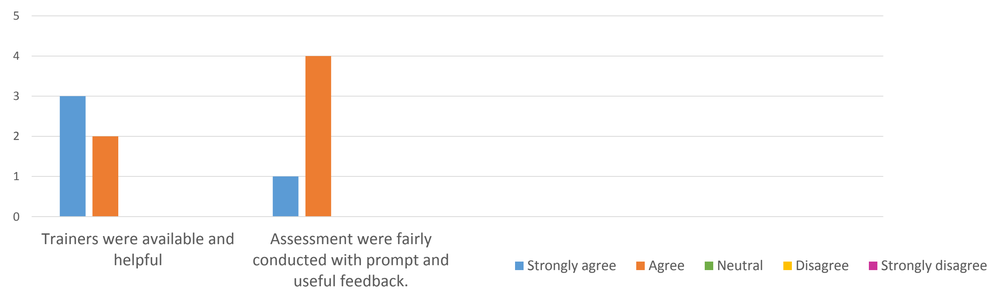

Figure 6. Post-training survey responses-Evaluation of trainers

CONCLUSION

- As the pharmacy profession continues to grow, the role of PTs needs to advance to support pharmacists accordingly. PTs can be empowered with opportunities to perform MR in place of pharmacists given their familiarity with the dosage forms, strengths, and usual dosing regimen of a wide range of medications.
- Trained PTs can play an important role through MR by obtaining accurate patients' medication histories to reduce medication discrepancies at transitions of care.
- We have designed an effective and feasible training programme which allows us to standardise the learning of performing MRs by PTs in our hospital.
- In future, this training could be extended to PTs in other sections or pre-registration pharmacists.

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