Can Pharmacy Students Effectively Partner With Pharmacists To Support Medication Reconciliation For Patients?

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Presenters: Philip Lam, Morgan Harrison, Sara Ingram

University Health Network
Toronto General Hospital - Toronto Western Hospital
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Background: Pharmacy Students & Med Rec

- Hospitals are searching for innovative strategies to effectively implement medication reconciliation for patients and meet hospital accreditation requirements.

- **Pilot Primary Focus:**
  - develop, implement and assess a practice model for pharmacy students partnering with pharmacists and other clinicians in a front line role to support medication reconciliation
  - Patient Care Areas: Emergency Department / General Medicine

- **Secondary Focus:** support hospital-wide implementation and spread of medication reconciliation
Practice Model: How did pharmacy students support Med Rec?

- Two **third-year pharmacy students** participated in a formal medication reconciliation **education program**.
  - **Reading** material (SHN ! Getting Started Kit)
  - **Observation**: pharmacist shadowing x 2 weeks (ED/ Pre-admission clinic); orientation to hospital electronic health record, provincial (DPV viewer)
  - **Standardized patient evaluation** (feedback on BPMH, reconciliation and discrepancy coding)
Practice Model: What specific activities did students perform to support Med Rec?

1. BPMH information gathering from relevant sources
2. Conducted independent interviews with patients, family members/caregivers
3. Documented the Best Possible Medication History
   - Electronic health record/ paper copy printed for chart
4. Supported: admission reconciliation and discrepancy identification with admission orders for admitted patients (in collaboration with pharmacists)

A systematic workflow was developed that outlined activities for both the student and the pharmacist.
Systematic Workflow: BPMH Process

1. Identify newly admitted patients and Prioritize
2. Gather information from medical chart and secondary sources to prepare the BPMH
3. Clarify and complete BPMH by interviewing patient
4. Compare BPMH with admission orders for any urgent issues
5. Document BPMH into electronic system
6. Co-sign and place BPMH in medical chart
7. Review documented BPMH, Sign Off and Print
8. Documented in BPMH Worksheet

PHARMACIST

STUDENT
Perform Admission Reconciliation by comparing BPMH with admission orders.

Document reconciliation activities electronically.

Document discrepancies on BPMH Worksheet and review discrepancies with Pharmacist.

Review, document, prioritize and if urgent, inform the physician of the discrepancies along with the suggested interventions.

Next Patient
**Timeline Measurement Definitions**

- **Preparation and Clarification Time**: Preparing, clarifying or completing the BPMH that does not involve direct patient interaction (Gathering information from secondary sources, entering into EMITT).
- **Interview Time**: Clarifying or completing the BPMH that involves direct interaction with the patient, caregiver, or family member.
- **Identification and Resolution Time**: Comparing the BPMH to Admission orders, assessing for significant discrepancies, and resolving discrepancies.
### Pharmacy Student Pilot Results:

<table>
<thead>
<tr>
<th>Data Collection Period: 11/06/08-14/08/08</th>
<th>TGH</th>
<th>TWH</th>
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<tbody>
<tr>
<td>Number of Patients with BPMH Completed</td>
<td>189</td>
<td>114</td>
</tr>
<tr>
<td>Average Number of Medications per Patient$^\dagger$</td>
<td>9.75</td>
<td>8.49</td>
</tr>
<tr>
<td>Average Preparation and Clarification Time (minutes)</td>
<td>$12.75 \pm 5.34$ (n=189)</td>
<td>$13.31 \pm 9.37$ (n=57)</td>
</tr>
<tr>
<td>Average Interview Time$^\ddagger$ (minutes)</td>
<td>$12.49 \pm 4.83$ (n=96)</td>
<td>$6.50 \pm 4.30$ (n=90)</td>
</tr>
<tr>
<td>Average Number of Patients completed by Student per Day</td>
<td>5.51 (average of full and half days)</td>
<td>3.56 (mostly half days)</td>
</tr>
</tbody>
</table>

$^\dagger$ Includes prescription, non-prescription and non-traditional medications

$^\ddagger$ Not all BPMH complete patients were be interviewed (incompetent patients, nursing home patients, language barrier with no family members)
Pharmacy Student Pilot Results:

Data Collection Period: 11/06/08-31/07/08

<table>
<thead>
<tr>
<th></th>
<th>TGH</th>
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<tbody>
<tr>
<td>Average Number of Information Sources Used</td>
<td>3.55</td>
<td>3.94</td>
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Top 5 Information Sources Used

<table>
<thead>
<tr>
<th>TGH</th>
<th>TWH</th>
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<tbody>
<tr>
<td>1. Primary History-Admitting MD</td>
<td>1. Primary History-Admitting MD</td>
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<tr>
<td>2. Primary History-Triage RN</td>
<td>2. Primary History- Triage RN</td>
</tr>
<tr>
<td>3. Patient Interview</td>
<td>3. Community Pharmacy</td>
</tr>
<tr>
<td>4. ODB Viewer</td>
<td>4. Patient Interview</td>
</tr>
<tr>
<td>5. Community Pharmacy</td>
<td>5. ODB Viewer</td>
</tr>
</tbody>
</table>
What value did pharmacy students add to medication reconciliation?

- **Efficiency**: Third Year student contributions increased overall efficiency of the process, allowing pharmacists focus on other patient care activities.

- **Supporting implementation activities**
  - SHN quality improvement data collection
  - Med Rec in-services for health care professionals
  - Supported development of resources: BPMH interview guide; poster; patient information leaflet; med rec promotional video; med rec student orientation binder/ toolkit; supported research projects (clinical significance assessments)

- **Cost-effectiveness** vs. practicing hospital clinicians

- **Educational value for pharmacy students**
  - Direct patient interaction
  - Collaboration with health care professionals
  - Problem solving / Assessment skills
Challenges and Lessons Learned

- **Level of Training of Student**
  - Therapeutic knowledge / familiarity with medication names can limit
    - independent activities
    - identification/resolution of certain discrepancies
  - More extensive training and supervision required for Pharmacy students earlier in their program (i.e. 1st or 2nd year)

- **Formal education/training program ensures consistency**

- **Student Identified Challenges:**
  - challenging patients / limited sources of information
  - division of time between front line work and other projects
  - hospital wide implementation support- role reversal in presenting BPMH completion rates to pharmacists
Conclusion

- Pharmacy students can partner effectively with pharmacist to facilitate Medication Reconciliation process.
- Creating a formal education/training program ensures consistency.
- More advanced students increase efficiency of the process and can perform many activities independently.
- Student projects provide valuable contributions and can help improve practice and support implementation.
Students and Medication Reconciliation at The Moncton Hospital (TMH)
Moncton, NB

Sally Ginson Duke, BSc(Pharm), ACPR
Natalie MacDonald, 4th year Pharmacy Student, Dalhousie University
Students and Medication Reconciliation at TMH

- **Orientation** at beginning of summer placement
- **Involve student** in medication reconciliation activities at admission and discharge in assigned practice (Inpatient Mental Health)
- **Promotion** of role of clients and health care providers in medication reconciliation
Student Orientation

- The Moncton Hospital medication reconciliation database and seamless care software
- Role playing with students
- Documentation practice and guidelines
Student Involvement (Inpatient Mental Health)

- Client contact and interview beginning with modelling and supervision by preceptor then progressing to independent activity for student (Inpatient Mental Health)
- Assessment of client’s own medication supply
- Communication with community pharmacy
Education to promote medication reconciliation (Joint Project)

- Poster development for use during Pharmacy Awareness Week
- Client-focused poster
- Health care provider poster
Pharmacy’s Role
In your Healthcare Team

Be Prepared!
Best possible medication history completed by pharmacist, pharmacy technician, nurse or physician.

TIP
Bringing your home medication(s) or list of medication(s) to the hospital will make available the necessary information that the healthcare team needs in order to provide you with the best possible care. A good source of a medication list is your community pharmacy.

Remember medications include: natural health products (vitamins, minerals, and herbas), patches, injections (VitB12 and insulin), puffers and birth control.

Know your Medication(s)!
( Name, strength, directions, description AND reason for taking your medication(s).

Get Involved!
At discharge the pharmacy team will help prepare your prescriptions for your community pharmacy and provide education about your current drug therapy.
The team will communicate any changes to your community pharmacy and family physician.

Intelligent Adherence!
In hospital some medications may be substituted for a similar product, but remember to ask questions if something does not look right.

Ask Questions!
Pharmacy staff review your medication(s) for any possible drug related problems.
The team will continue to assess your medication regimen while you are in hospital in order to ensure all your health care needs are met.

Be Alert!
Make sure you leave the hospital with a good understanding of your medication(s). You may be given a chart listing your medication(s) and any changes that have been made.

Discharge

Be Prepared - Ask Questions - Get Involved
Know what pharmacy has to offer, a team approach to patient care!

**Get Involved!**
At admission a best possible medication history (BPMH) is completed by a pharmacist, pharmacy technician, nurse or physician.

Frequently used sources for the BPMH include:
- Patient/ Family
- Chart
- Patient medication(s)
- Community pharmacy

Remember that medications include: natural health products (vitamins, minerals and herbs), patches, injections (VitB12 and insulin), puffers and birth control.

**Ask Questions!**
- Have you ever been confronted with a drug-related question and couldn’t find the answer?
- Pharmacy offers to answer any drug-related questions you may have.
- First try asking a pharmacist on your floor.
- If unavailable, contact our hospital drug information services pharmacist at 857-5338.

**Be a Team Player!**
If pharmacy discharge services are available on your floor the pharmacist can prepare prescriptions and information for the patient’s community pharmacy/ family physician.

This service also benefits the patient as the pharmacist can provide information about their medication(s), and a weekly checklist of their medication(s).

You can help by informing the pharmacist on your floor when a patient discharge is anticipated.

**Seamless Care?**
*Seamless care is the desirable continuity of care delivered to a patient in the healthcare system across the spectrum of caregivers and their environments.*

**Tip #1.**
Ways to improve your BPMH interviewing skills
- Introduce yourself and explain the purpose of the interview
- Ask open ended questions
- Get medication details such as: name, strength, dose, instructions, and how the patient takes them.

Note: The instructions and how patients take their medication(s) may be different, it is important to uncover this distinction.

**Tip #2.**
Where to find drug information
Clinical Links on the Intranet offer electronic access to a variety of sources:
- Up-to-date
- eCPS
- Micromedex
- Medications and Mother’s Milk
- Natural Standard
- Practice guidelines (CND, US and UK)

**Tip #3.**
Make the link between hospital care and community care
- It is important to keep all members of a patient’s healthcare team informed of changes in their medication(s).
- Pharmacy can help you communicate with a patient’s community pharmacist and primary healthcare physician at discharge.
Medication reconciliation on transfer (Joint Project)

- Students responsible for mapping process of nursing staff re: medication reconciliation at transfer (MSICU to General Surgery ward)
- Future pilot project to establish a defined process for medication reconciliation at transfer
Challenges for student involvement

Some challenges were more prominent in our Family Practice site:
- Adopting a consistent routine for assigned patient care unit
- Level of therapeutic knowledge and assessment skills
- Effective communication between pharmacist and student

A common challenge across sites:
- Optimizing electronic resources to facilitate medication reconciliation processes
Student Value

- Availability and willingness to participate in new processes
- Creativity and innovation
- Identifying and asking relevant process questions
Clinical Pharmacy
Summer Students – Role in Medication Reconciliation

Margaret Ackman, BSc(Pharm), PharmD, Clinical Practice Leader

Angela Gee, BScPharm Clinical Pharmacist
Training for BPMH

- Workshop training
- Observation of pharmacist
- Student observation by pharmacist with feedback
- Direct to indirect supervision during the summer
Activities

- BPMH under indirect supervision
- Initially, process of medication reconciliation done with a pharmacist
- Then student to formulate decision regarding patient’s medical therapy and present their medication reconciliation plan to pharmacist
- Also, conducted other clinical activities
Value Added

- Institutional perspective
  - Students had more time to focus on the more complicated patients than pharmacist alone
  - Especially important during summer months due to staffing challenges and training needs of new graduates hired by department

- Pharmacist perspective
  - Great learning and teaching opportunities
  - Overall, a positive experience
Value Added

- Student perspective
  - Opportunity to practice skills learned in the classroom and apply their knowledge to real patients
  - Opportunity to formulate decisions regarding patient’s medical therapy in a supported environment
Challenges and Lessons Learned

- Training requires a role model and mentor
- Importance and support of preceptor
- Clear communication of role and expectations for the student to all parties, including the medical team
- Pharmacists must assess and trust student’s abilities
- Students’ interest in hospital practice
Integration of a Community-Based Medication History (MedsCheck) into Peri-operative Medication Reconciliation

Valerie Leung BScPhm, ACPR
Kieu Mach BScPhm
Project Overview

• **Primary objective**
  – determine if medication reconciliation in the pre-admission clinic (PAC) using MedsCheck would reduce the number of post-operative unintentional medication discrepancies.

• **Secondary objectives**
  – assess community pharmacist participation
  – patient satisfaction

• **Study Population**
  – patients scheduled for elective hip and knee surgery between April-September 2008.
What activity did pharmacy students participate in to support patients & healthcare professionals with medication reconciliation?

- Our pharmacy student essentially drove all aspects of the study.

- Student contacted patients and their respective community pharmacies prior to his/her PAC visit to coordinate the MedsCheck review.

- At the PAC visit, student used the MedsCheck document to prepare a best possible medication history which was documented in the patient chart.
What activity did pharmacy students participate in to support patients & healthcare professionals with medication reconciliation?

- Student reconciled medications post-operatively and communicated discrepancies to the clinical pharmacist for follow-up.

- She also surveyed patients and pharmacists to elicit feedback on the process.

- Quantitative and qualitative data managed by the student.
What value did pharmacy students add to the medication reconciliation process?

- Asking questions about the process from a learner’s perspective was constructive.

- Able to test out a new process and iron out workflow details. (Previously no pharmacist in PAC)

- Dedicated time to contact patients prior to PAC visit.
What were the challenges and lessons learned for other institutions and teams?

- Essential to set up logistics before the student arrives if embarking on a short-term pilot.

- Challenge of learning curve for the student – especially when medication reconciliation component requires clinical skill.

- Students can drive medication reconciliation projects independently given the right tools and support.
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