Interprofessional Education: An Integration of Pharmacy and Medicine Courses to Create Team-Ready Students

Susan S. Vos1, Chase D. Kooyman2, Michael E. Ernst1, Michael W. Kelly3, George R. Bergus2, Elizabeth Bald3, Allison Bernard3, Mary C. Schroeder1

1The University of Iowa College of Pharmacy; 2The University of Iowa Carver College of Medicine; 3University of Iowa Health Care

Background
• Interprofessional development has received considerable interest from professional programs
• Guidance on Interprofessional Education (IPE) has been directed through initiatives by interdisciplinary organizations, accrediting bodies, and the literature
• IPE activities early in the curricula at The University of Iowa have been coordinated across ten disciplines since 2014 (Figure 1)
• An additional IPE activity was developed to occur immediately prior to Advanced Pharmacy Practice Experiences (APPE)

Objectives
To develop and evaluate a novel two-week, interprofessional course designed to promote team-ready pharmacy and medical students, delivered immediately prior to beginning APPE

Methods
• An elective medicine course for third or fourth year medical students (n=9 students) was integrated with a required pharmacy pre-APPE course (n=103 students)
• Course was conducted with a case-based, collaborative learning format (Figure 2) focused on The Carver College of Medicine’s Exemplars (Table 1)
• Teams of 1-2 medical-to-pharmacy students were created and scheduled using a randomization software program
• Pharmacy students were involved in two cases, one as an observer and one as a participant; medical students were involved with all cases
• Teams developed comprehensive care plans using shared-decision making, team communication, evidence-based practice, and foundational sciences
• Students presented their case plans in a 90-minute case-discussion format and received feedback from their peers during the course
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• Students completed pre- and post-assessments using a 4-point Likert scale (1=strongly disagree to 4=strongly agree) to address their comfort in providing collaborative care to patients
• Data for each group were compared using two-tailed paired t-tests with a p-value of 0.05

Limitations and Challenges
• Eight cases were completed over eight days
• Pharmacy student self-assessment response rate was 97%; Medical student response rate was 100%
• Both pharmacy and medical students’ agreement with team-based readiness questions improved (pre=3.3 vs. post=3.7, p=0.01; pre=3.4 vs. post=3.8, p=0.02, respectively) (Figure 3)
• The largest increase in self-reported ability was in their ability to develop an effective care plan with other professionals (change=0.44; SD=0.61) (Figure 3)

Conclusions/Implications
• This 2-week, integrated medicine and pharmacy case-based course was effective at enhancing pharmacy and medical students’ perceived team-readiness prior to advanced experiential education
• Using both a physician and pharmacist to lead the case discussions allowed for modeling of interprofessional practice
• Teams successfully explored patient cases with a shared-decision making process
• Both colleges received endorsement and support from administration to further develop this interprofessional course
• This course will continue to exist as one piece of the larger IPE curriculum

Results
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Table 1: Case Exemplars

<table>
<thead>
<tr>
<th>Disease</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia</td>
<td>Building Teams*</td>
<td>Scope of Practice*</td>
</tr>
<tr>
<td>Failure</td>
<td>Patients and their Role on the Team*</td>
<td>Virtual Team-based Patient Case*</td>
</tr>
<tr>
<td>Thrombosis</td>
<td>3. Scope of Practice*</td>
<td>4. Virtual Team-based Patient Case*</td>
</tr>
<tr>
<td>Hypertension</td>
<td>5. Simulated Patient*</td>
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</tr>
</tbody>
</table>

Table 2: WHO Rational Prescribing

<table>
<thead>
<tr>
<th>Disease</th>
<th>STEP 1: Define the patient’s problem</th>
<th>STEP 2: Specify the therapeutic objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia</td>
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Figure 1. IPE Curricula in Pharmacy and Medicine

Figure 2: IPE Case Discussion Format

Before Class
- Pharmacy & Medical Students Collaborate on Pre-class Assignments
  - SOAP Note
  - Case Plan
  - Case Answers

During Class
- Case discussion led by physician & pharmacist with a focus on foundational sciences and WHO Rational Prescribing (Table 2)

After Class
- Form new teams and begin preparations for tomorrow’s case

Figure 3: Change in Self-assessment Ratings

- Medical Students: n=9
- Pharmacy Students: n=100

- I can work effectively with other health care professionals to enhance care.
- I am able to learn from other health care professionals to enhance care.
- I recognize how other's skills and knowledge complement and overlap with my own.
- I am able to develop an effective care plan with other professionals.

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