

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

Susan S. Vos¹, Chase D. Kooyman¹, Michael E. Ernst¹, Michael W. Kelly¹, 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 1:1-2 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 shareddecision making, team communication, evidence-based practice, and foundational sciences
- Students presented their case plans in a 90-minute casebased format with discussion led by a physician and a pharmacist
- Students completed pre-and-post self-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

# Figure 1. IPE Curricula in Pharmacy and Medicine

#### Year 1

- 1. Building Teams\*
- Patients and their Role on the Team\*

### Year 2

- 3. Scope of Practice\*
- 4. Virtual Team-based Patient Case\*
- 5. Simulated Patient\*

#### Year 3

6. IPE Case-based,
Collaborative Learning\*\*

#### Year 4

IPE during Medicine's Core Clinical Clerkships and Pharmacy's APPE

| Pharmacy<br>Curriculum | Didactic Education, Practice Lab, IPPE |  | † |  | APPE |  |
|------------------------|--|--|---|--|------|--|
| Medicine<br>Curriculum | Didactic Education                     | Clinical Clerkships and Advanced Electives |   |  |      |  |

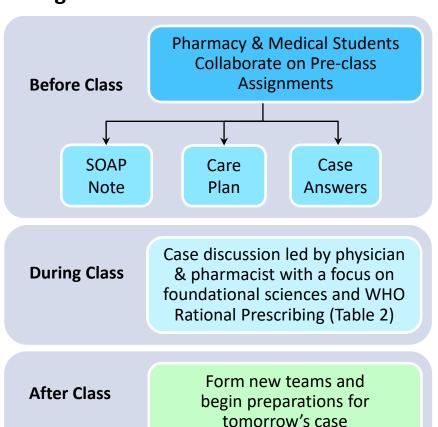
- 1. Face-to-face team meeting with trained facilitator—Established goals for the three semesters; created team values, mission, and standards; and developed a positive social climate
- focusing on the perception of team-based care from the patient's perspective

  3. Face-to-face or virtual discussion—Discussed shared-decision making and role of patients in the

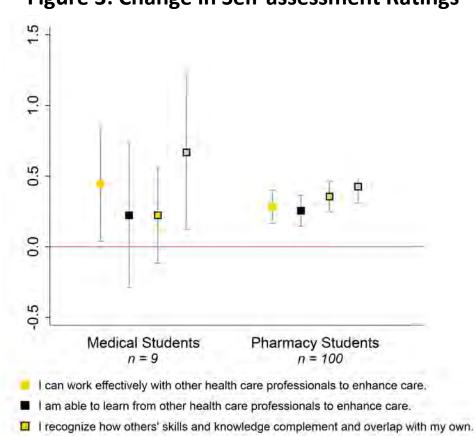
2. Face-to-face or virtual discussion—Discussed a time a family member received healthcare

- 3. Face-to-face or virtual discussion—Discussed shared-decision making and role of patients in the care process
- 4. Virtual discussion—Collaborated to provide a written assessment of a patient case and address all components of the CoRE-Values Framework
- 5. Face-to-face IPE team meeting—Shared-decision making to address a simulated patient with a facilitator
- Face-to-face—Required pharmacy and elective medicine course using interprofessional case-based learning
- \*Students from Pharmacy, Medicine, Dental, Nursing, Physical Therapy, Speech and Language, Social Work, Health Administration, and Public Health
- \*\*Students from Pharmacy and Medicine Programs
- †APPE or additional didactic electives

# **Figure 2: IPE Case Discussion Format**



# Figure 3: Change in Self-assessment Ratings



□ I am able to develop an effective care plan with other professionals.

#### **Table 1: Case Exemplars** Table 2: WHO Rational Prescribing 1 **Congestive Heart** STEP 1: Define the patient's problem STEP 2: Specify the therapeutic objective Altered Mental **Diabetes Mellitus** Status STEP 3: Verify the suitability of your P-drug Bleeding and Hypertension Thrombosis STEP 4: Write a prescription **Obstructive Airway** STEP 5: Give information, instructions, and Arthritis Substance Misuse **Bone Remodeling** STEP 6: Monitor (and stop?) the treatment

#### Results

- 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)

# **Limitations and Challenges**

- Scheduling was challenging due to competing courses, instructors' practice obligations, and examinations, including the Pharmacy Curriculum Outcomes Assessment® and US Medical Licensing Examinations®
- A small number of medical students enrolled due to timing, firstoffering, novel approach, and elective nature of course
- Preparation and delivery of the course for instructors was timeintensive due to the concentration of discussions over two weeks

## **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

 de Vries TPGM, Richir MC, Tichelaar J. WHO guide to good prescribing. Available at: http://apps.who.int/medicinedocs/pdf/whozip23e/whozip23e.pdf. Accessed April 27, 2018.