Designing and Evaluating an Interprofessional Practice Experience Involving Dental and Pharmacy Students

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Learning Objectives

• Describe approaches for engaging students and faculty in interprofessional practice experiences.
• Describe assessment strategies and tools that can be used to evaluate interprofessional practice experiences.
• Design innovative interprofessional curriculum within a collaborative practice environment with attention to actualizing academic and clinical partnerships.
Background

• Accreditation standards for pharmacy and dental education:
  • Mandate that interprofessional education (IPE) is incorporated into curricula.
  • Do not provide standardized guidelines on how to design and implement IPE.

• Variability in IPE design and implementation exist:
  • Pharmacy curriculum: strategy of incorporating IPE into introductory pharmacy practice experiences (IPPE) has limited data.
  • Dental curriculum: limited literature published on IPE involving dental students.

A collaborative effort between pharmacy and dental schools is a novel approach to meeting accreditation standards for IPE.
Purpose

• To describe the design and evaluation of an innovative interprofessional practice (IP) experience involving pharmacy and dental students.
IP Practice Experience: **DESIGN**

**Goals and Objectives:**
- Collaboratively created by pharmacy and dental faculty.
- Linked to the IPEC core competencies.

**Educational Setting:**
- Temple University Kornberg School of Dentistry’s dental admissions clinic.

**Schedule:**
- Incorporated into existing PY-3 IPPE and dental student clinical training.
- Orientation provided to all students prior to IP experience.
- Two afternoon sessions per week in fall and spring semesters.

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Panel IECE. Core competencies for interprofessional collaborative practice: report of an expert panel. Washington, DC: Interprofessional Education Collaborative; 2011.

Collaborative IE. Core competencies for interprofessional collaborative practice: 2016 update. Washington, DC: Interprofessional Education Collaborative; 2016.
IP Practice Experience: **DESIGN**

- **IP clinic days:**
  - 4-5 pharmacy students are paired with dental students in a 1-2:1 ratio.
  - Pharmacy and dental faculty reinforce profession-specific roles.
  - IP teams collaboratively conduct full medical histories of dental patients.

| Dental Student Responsibilities                                      | Pharmacy Student Responsibilities                                      |
|----------------------------------------------------------------------|------------------------------------------------------------------------|
| Conduct health history                                               | Conduct medication history                                             |
| Perform oral exam, head and neck exam, oral cancer screening, and    | Contact outpatient pharmacy for reconciliation of all current         |
| radiographic exam                                                     | medications                                                           |
| Teach pharmacy student how to conduct an oral cancer screening and    | Teach dental student how to conduct medication reconciliation         |
| importance of oral health                                             |                                                                        |
| Advise tobacco users to quit and refer them to pharmacy student for   | Provide tobacco cessation education (if applicable)                    |
| education                                                            |                                                                        |
### IP Practice Experience: DESIGN

| Shared patient presentation to dental and pharmacy faculty |
|----------------------------------------------------------|
| • Dental students present past medical history, oral exam findings, and their assessment and plan. |
| • Pharmacy students present the medication history and any discrepancies found. |

| Shared documentation process |
|-----------------------------|
| • Pharmacy students document medication history, any medication discrepancies that are identified, and any patient education that is provided. |
| • Dental students document all of the other components of the encounter. |
IP Practice Experience: **ASSESSMENT & EVALUATION**

- Pharmacy student performance – standardized assessment rubric based on the IPEC core competencies.
- Changes in pharmacy and dental student perceptions – SPICE-R Instrument.
- Student and faculty perceptions of achievement of pre-specified learning objectives – 5-point Likert type scale.
- Faculty evaluations of the practice experience – open-ended survey questions.
IP Practice Experience: **RESULTS**

- Enrollment for fall 2015 and spring 2016 semesters:
  - 188 students (151 dental, 37 pharmacy).

- Pharmacy student performance:
  - For the summative evaluations, all of the pharmacy students either met or exceeded expectations at this point in the curriculum.
Student IPE Perceptions: RESULTS

- Changes in pharmacy and dental student perceptions:
  - Overall, there was an increase in student perceptions of IPE.
  - Dental students: Significant increase on all SPICE-R items ($p$ values .001 to < .001).
  - Pharmacy students: Significant increase on 6 SPICE-R items ($p$ values <.001 to .046).
  - Significant increase on 3 factors: Teamwork, Role/Responsibilities, Patient Outcomes.
| SPICE-R Items                                                                 | Dental Students Pre-Post Averages | Pharmacy Students Pre-Post Averages | All Students Pre-Post Averages |
|--------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------------|
|                                                                              | Pre N=88  Post N=80  p value       | Pre N=36  Post N=37  p value        | Pre N=124  Post N=117  p value |
| Working with students from another health profession enhances my education    | 4.32  4.54  <.001                 | 4.19  4.51  .006                  | 4.28  4.53  <.001             |
| My role within an interprofessional healthcare team is clearly defined         | 4.16  4.43  <.001                 | 3.94  4.27  .019                  | 4.10  4.38  <.001             |
| Health outcomes are improved when patients are treated by a team that consists  | 4.41  4.59  .001                  | 4.58  4.65  .536                  | 4.46  4.61  .008              |
| of individuals from two or more health professionals                         |                                  |                                    |                               |
| Patient satisfaction is improved when patients are treated by a team that      | 4.07  4.41  <.001                 | 4.44  4.57  .412                  | 4.18  4.46  <.001             |
| consists of individuals from two or more health professions                  |                                  |                                    |                               |
| Participating in educational experiences with students from another health    | 4.41  4.60  <.001                 | 4.25  4.57  .054                  | 4.36  4.59  <.001             |
| profession enhances my future ability to work on an interprofessional team    |                                  |                                    |                               |
| All health professional students should be educated to establish              | 4.41  4.61  <.001                 | 4.22  4.54  .046                  | 4.35  4.59  <.001             |
| collaborative relationships with members of other health professions          |                                  |                                    |                               |
| I understand the roles of other health professionals within an interprofessional| 4.13  4.54  <.001                 | 3.83  4.41  .001                  | 4.04  4.50  <.001             |
| team                                                                           |                                  |                                    |                               |
| Clinical rotations are the ideal place within their respective curricula for   | 4.23  4.50  <.001                 | 4.06  4.65  <.001                 | 4.18  4.55  <.001             |
| health professional students to interact                                      |                                  |                                    |                               |
| Health professionals should collaborate on interprofessional teams            | 4.35  4.61  <.001                 | 4.33  4.62  .088                  | 4.35  4.62  <.001             |
| During their education, health professional students should be involved in     | 4.38  4.60  <.001                 | 4.33  4.68  .032                  | 4.36  4.62  <.001             |
| teamwork with students from other health professions in order to understand    |                                  |                                    |                               |
| their respective                                                             |                                  |                                    |                               |

Each item is rated on a 5-point Likert-type scale (1 = Strongly disagree; 5 = Strongly agree)
Student IPE Perceptions: RESULTS

- Student perceptions of achievement of pre-specified learning objectives
  - Data from 25/37 pharmacy students (67.5% response rate).
  - The majority of students agreed that the four learning objectives were met:

| Learning Objective                                                               | Number in Agreement* (%) |
|-----------------------------------------------------------------------------------|--------------------------|
| Conduct comprehensive medication histories and reconciliations when appropriate   | 25 (100%)                |
| Provide tobacco cessation education for current tobacco users                      | 17 (68%)                 |
| Communicate professionally and effectively with patients and healthcare providers | 25 (100%)                |
| Think critically to solve complex problems                                        | 24 (96%)                 |

* Agree or Strongly agree
Faculty IPE Perceptions: RESULTS

• Overall, faculty perceptions and open-ended responses were positive.

• Emergent themes from open-ended responses:
  • IP practice experience increased teamwork, as well as knowledge about roles and pharmacotherapy.
  • Workflow issues occurred, as well as variability in student engagement and knowledge gained among students.

• All faculty (n = 8) reported being satisfied with the experience (3 extremely satisfied [37.5%]; 3 very satisfied [37.5%]; 2 satisfied [25%]).
### Dental Faculty Evaluation (n = 6)

| Dental Student Objective                                                                 | Number in Agreement* (%) |
|-----------------------------------------------------------------------------------------|--------------------------|
| Enrich ability to consult with other healthcare providers                              | 6 (100)                  |
| Improve understanding of diseases, and indications, contraindications and side effects of medications | 5 (83.3)                  |
| Enhance knowledge about medications to treat dental conditions and how they relate to patients' overall health | 5 (83.3)                  |
| Improve aptitude for sharing knowledge and recommendations across healthcare professions | 5 (83.3)                  |
| Improve ability to collaborate with other healthcare professionals in the provision of tobacco cessation counseling | 5 (83.3)                  |

### Pharmacy Faculty Evaluation (n = 2)

| Pharmacy Student Objective                                                                 | Number in Agreement* (%) |
|-------------------------------------------------------------------------------------------|--------------------------|
| Conduct comprehensive medication histories and reconciliations                            | 2 (100)                  |
| Provide tobacco cessation education for current tobacco users                              | 2 (100)                  |
| Communicate professionally and effectively with patients and healthcare providers         | 2 (100)                  |
| Think critically to solve complex problems                                                | 2 (100)                  |

*Agree or Strongly Agree*
Relevance and Recommendations

• Pharmacy and dental students’ perceptions about IPE and collaborative practice were more favorable after completing this IP practice experience.

• The majority of faculty perceptions and open-ended responses regarding the practice experience were positive.

• Evaluation of student perceptions of IPE can be utilized as one strategy to demonstrate learner outcomes within IPE.

• Faculty feedback can be utilized to evaluate IPE outcomes and improve practice experiences.