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# A Team-Based Practicum Bringing Together Students Across Educational Institutions and Health Professions

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## INSTRUCTIONAL DESIGN AND ASSESSMENT

### A Team-Based Practicum Bringing Together Students Across Educational Institutions and Health Professions

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**Objective.** To assess student perceptions of teamwork during an interprofessional exercise and to evaluate if students could identify domestic violence through a standardized patient interview.

**Design.** Medical, pharmacy, nursing, physical therapy, and social work students were assigned to teams to interview and examine a patient with a “cut on the hand” later revealed a result of domestic violence. They also practiced suturing technique and developed a patient care plan. A postexercise survey was administered.

**Assessment.** From 70% to 94% of students surveyed agreed or strongly agreed, respectively, that their responsibilities were clear. All (100%) recognized the benefits of team-based care. Only 38% of the medical students reported team members providing insight into domestic violence, and 52% did not recognize team members as resources for these cases.

**Conclusion.** Students gained perspective of knowledge and responsibilities of each team member. However, the results suggest further enhancements of curriculum related to domestic violence are needed.

**Keywords:** interprofessional education, across institutions, domestic violence evaluation, team-based

## INTRODUCTION

Interprofessional education (IPE) has emerged over the past several years as a major topic in academic conversations. The World Health Organization (WHO) identified IPE as a core component of primary health care services in the 1978 Report of the International Conference on Primary Care in Geneva.<sup>1</sup> Against a rapidly changing public policy backdrop, emphasis on efficient and effective patient care has led to a renewed international interest in IPE over the past 10 years.<sup>2</sup> Interprofessional education is a criterion for many health care programs' accreditation, a focus in clinical practice, and included in many student assessments.<sup>3</sup> The importance of IPE is increasing, and collaboration between health and social care has garnered interest as a strategy to “improve services, effect change, and implement workforce strategies.”<sup>2</sup> Moreover, IPE has a positive impact on health and social care collaboration in practice.<sup>4</sup>

More than a decade ago, Freeth and Reeves reported that collaborative practice among health care professionals could be advanced through planned, formal, and informal educational experiences.<sup>5</sup> The authors held that formal educational experience allowed students to work together on structured, case-based scenarios, while the informal collaboration promoted profession specific knowledge, skills, and socialization. The informal student interaction fostered an essential component of team-based collaboration: that all team members had, at a minimum, a baseline understanding of the expertise and professional training of one another.<sup>5</sup> MacDonald et al delineated key competencies essential for postlicensure interprofessional practice (IPP) and collaboration specifying that knowledge of the professional role of others was the most vital to interprofessional practice.<sup>6</sup>

In 2005, an IPE collaborative began at the University of Rhode Island (URI) between the colleges of pharmacy and nursing. The cohort of students included third-year nursing students and third professional year doctor of pharmacy (PharmD) students. Faculty members worked together to develop an interprofessional laboratory exercise

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focusing on diabetes. This was the first IPE experience for the majority of the group. The results of this first experience demonstrated that the perception among nursing students regarding the role of the pharmacist in health care changed significantly.<sup>7</sup>

Three years later, the curriculum was expanded to include the Warren Alpert School of Medicine at Brown University (AMS) bringing medical students into the IPE partnership. Other connections formed thereafter, with both nursing and social work students from Rhode Island College (RIC) in 2012 and physical therapy students from URI in 2013. The interprofessional curriculum has undergone continual development and growth and has gained recognition for providing both formal and informal educational experiences.<sup>8</sup> This partnership consolidated independent IPE efforts and enabled educators and practitioners to develop a comprehensive IPE program using a conceptual framework developed by MacDonnell et al in 2012.<sup>9,10</sup> The framework brought students from different health care disciplines together in teams to “gain insight into the knowledge and skills required for each discipline in order to function in the health care arena.”<sup>10</sup>

The purpose of this paper is to describe the implementation and evaluation of this team-based interprofessional practicum, which brings together students from nursing, physical therapy, social work, pharmacy and medicine, from three distinct institutions spanning six separate colleges. All faculty members designed the content of the patient cases. This type of integrated curricular development is a key component of meaningful interprofessional activities. These collaborative efforts assure that the program’s content will naturally lend itself to the expertise of each student group.<sup>11</sup>

As with IPE events held previously, the team of interprofessional educators from each institution began planning these programs approximately six months in advance. Typically, they met once in person for program development. Follow up communications regarding writing and editing curricular elements took place via e-mail. An educator from AMS recruited and trained standardized patients (SP) for the event. Volunteer faculty members from each institution as well as pharmacy residents were assigned to SP rooms. They were given a guide to assist them in debriefing students at the conclusion of the standardized patient activity.

The objectives of this IPE practicum and research were multifactorial. The first objective was to assess student perceptions of interprofessional health care teams. Bringing students together who work across a continuum of health fields enabled them to participate in team building educational exercises, and provide their insight. The second objective was to assess whether the students on

these interprofessional teams believed they had acquired knowledge on identification of domestic violence and resources available for the victims of domestic violence. The student teams participated in a standardized patient case scenario developed to encourage the group to attend to patient confidentiality, safety, and applicable laws.

Reasons behind incorporating domestic violence into this workshop included feedback from social work students who, after prior iterations of this workshop, requested more nonmedical aspects of patient care be covered. The second reason was an opportunity to present students with an undisclosed problem, one that they as a team might work together to identify and address. The literature reports that it is common for these victims go unidentified in hospital emergency departments (the setting for this particular case) and also that health professions students often do not identify victims of domestic violence while taking a patient history.<sup>12</sup> The goal for this practicum was to facilitate student teamwork and, ultimately, give students the opportunity to identify and discuss resources available to victims of domestic violence. Similar interventions have been performed with other learners, specifically pharmacy students, nursing students, and pediatric residents, but to our knowledge medical or social work students were not included and much smaller numbers of students were involved.<sup>13</sup>

## DESIGN

The study took place at the Alpert Medical School of Brown University. Inclusion criteria consisted of all students designated as fourth-year nursing students (N=120), second-year medical students (N=121), third professional-year PharmD students (N=120), second-year graduate students in social work (N=48), and second-year doctor of physical therapy students (N=34) at any of the three participating institutions. Each student cohort participated in the workshop as required by the respective discipline-specific course; however, completion of an online study survey following the workshop was voluntary. The institutional review boards at AMS, RIC, and URI deemed this study exempt.

As part of the workshop, students collaborated in assigned health professions teams (consisting of at least one medical, nursing, and pharmacy student and in some groups a physical therapy or social work student as student numbers allowed). The workshop included three activities through which the groups rotated. However, the focus of this study was on the activity involving the SP case, which centered on domestic violence (Appendix 1). The SPs, who were both male and female patient actors, presented to the emergency department with a laceration. It was later revealed that the patient received the wound

after getting into a financial argument with their partner, who swung a kitchen knife and cut the patient.

Student teams were asked in this exercise to take a patient history, perform a focused and brief physical examination, make a diagnosis, and perform a procedural component. At the conclusion of the SP activity, students were invited to participate in the study and given a link to the online Survey Monkey questionnaire (Survey Monkey, Palo Alto, CA). Participants had 20 days after the workshop to complete the anonymous survey.

The survey selected was the Student Perceptions of Physician-Pharmacist Interprofessional Clinical Education-Revised (SPICE-R) tool, which was slightly modified (with permission from the SPICE-R authors), to correspond with this participating cohort of students. Thus, two questions related to domestic violence were developed to better evaluate the students' experience during the SP activity.<sup>14,15</sup> The SPICE-R tool is a validated and reliable 10-item self-report measuring three subscales of student perceptions: (1) interprofessional teamwork and team-based practice; (2) roles/responsibilities for collaborative practice; and (3) patient outcomes from collaborative practice.<sup>16</sup> A higher score on the 5-point Likert-type scale indicates a higher degree of agreement with the statements provided.

Researchers were blinded to individual student responses and survey data was analyzed using Microsoft Excel and online Survey Monkey features. All completed student responses were included in the data analysis (Table 1 represents percent of student responses by discipline). Trends emerging from the study's survey data were then compiled and discussed among the researchers, resulting in a final set of themes representing the participants' experiences with IPE.

## EVALUATION AND ASSESSMENT

Three hundred and two students, 68% of all IPE participants, responded to the online questionnaire following the workshop. The sample was comprised of 33% second-year medical students, 31% third-year pharmacy students, 22% fourth-year nursing students, 10% second-year physical therapy students, and 4% first-year social work students. Table 2 shows discipline-specific survey responses listed by each of the items in the three subscales.

Table 3 reflects participant responses to the first domestic violence question, which explored whether students thought that they gained new insight into how to assess domestic violence through their interaction as a team. More than 70% of the pharmacy, physical therapy, and nursing students agreed or strongly agreed that they gained a different perspective, compared to only 27% percent of social work students.

Table 1. Distribution of Survey Respondents by Discipline

| Discipline       | No. Students       |                        | % Students who Completed Survey |
|------------------|--------------------|------------------------|---------------------------------|
|                  | Attending Workshop | No. Survey Respondents |                                 |
| Medicine         | 121                | 101                    | 83                              |
| Pharmacy         | 120                | 92                     | 77                              |
| Nursing          | 120                | 67                     | 56                              |
| Physical Therapy | 34                 | 31                     | 91                              |
| Social Work      | 48                 | 11                     | 23                              |
| TOTAL            | 443                | 302                    | 68                              |

The second domestic violence question examined if team members had gained greater knowledge from each other on the resources available for domestic violence. Pharmacy (64%), physical therapy (69%), and nursing (70%) student participants strongly agreed/agreed that they gained more knowledge about domestic violence resources following this IPE exercise (Table 4).

## DISCUSSION

The results from the student survey were noteworthy in many ways. This survey includes a subscale evaluation that specifically focuses on students' perceptions regarding the association between collaborative practice and patient outcomes. This is useful because it allows researchers to examine whether future health care providers feel there is a direct and observable relationship between the standard of care and interprofessional collaboration. Additionally, and importantly, the brevity of the tool made us select it. We believe the student response rate, which was more than 85% from three of the five disciplines, was a direct result of the brief and straightforward queries.

The results of this postworkshop evaluation of the SP interprofessional exercise demonstrated that students perceived value of health care teams. Students in each of the disciplines were in 100% agreement that "health outcomes are improved when patients are treated by a team consisting of two or more health professions." Results from this survey item, "My role within an interprofessional health care team is clearly defined" and "I understand the roles of other health professionals within an interprofessional team," may have been enhanced because this was the cohort's second IPE exercise for the academic year. It is reasonable to consider that students were more comfortable working in teams with other disciplines, and as a result, gained confidence in the value that team health care has on patient outcomes.

Of particular interest were items A and B on the roles/responsibilities for collaborative practice (#1 on

Table 2. Percentages of Students by Discipline Responding to the 10-Item Modified SPICE-R by Item and Subscale with Options Strongly Agree or Agree

| Survey Item   | Medicine | Pharmacy | Nursing | Physical Therapy | Social Work |
|---|----------|----------|---------|------------------|-------------|
| <b>Roles/Responsibilities for Collaborative Practice</b>  |          |          |         |                  |             |
| My role within an inter-professional healthcare team is clearly defined.  | 76       | 92       | 91      | 74               | 73          |
| I understand the roles of other health professionals within an interprofessional team.  | 81       | 95       | 94      | 90               | 73          |
| <b>Patient Outcomes from Collaborative Practice</b>   |          |          |         |                  |             |
| Health outcomes are improved when patients are treated by a team that consists of individuals from two or more health professions   | 100      | 100      | 100     | 100              | 100         |
| Patient satisfaction is improved when patients are treated by a team that consists of individuals from two or more health professions   | 89       | 96       | 98      | 100              | 100         |
| <b>Interprofessional Teamwork and Team-Based Practice</b>   |          |          |         |                  |             |
| Working with students from another health profession enhances my education  | 95       | 100      | 91      | 100              | 100         |
| Participating in educational experiences with students from another health profession enhances my future ability to work on an interprofessional team                         | 91       | 97       | 97      | 100              | 100         |
| All health professional students should be educated to establish collaborative relationships with members of other health professions   | 95       | 98       | 98      | 100              | 100         |
| Clinical and other experiential training opportunities are the ideal place within their respective curricula for health professional students to interact                     | 90       | 98       | 96      | 90               | 100         |
| Health professionals should collaborate on interprofessional teams  | 99       | 97       | 100     | 100              | 100         |
| During their education, health professional students should be involved in teamwork with students from other health professions in order to understand their respective roles | 93       | 95       | 100     | 100              | 100         |

Table 2) subscale. Social work students were less certain about their role on the health care team (Table 2). Working within simulated, interprofessional, medically focused teams is a relatively new experience for this group of

Table 3. Survey Question 11: Working with Different Disciplines Gave Me Insight into How to Identify Domestic Violence

| Discipline       | n (%)          |         |         |          |                   |
|------------------|----------------|---------|---------|----------|-------------------|
|                  | Strongly Agree | Agree   | Neutral | Disagree | Strongly Disagree |
| Medicine         | 18 (19)        | 39 (41) | 22 (23) | 15 (16)  | 1 (1)             |
| Pharmacy         | 31 (34)        | 39 (43) | 15 (17) | 5 (5)    | 0                 |
| Nursing          | 16 (26)        | 31 (50) | 13 (21) | 2 (3)    | 0                 |
| Physical Therapy | 7 (23)         | 14 (47) | 9 (30)  | 0        | 0                 |
| Social Work      | 3 (26)         | 1 (1)   | 7 (63)  | 0        | 0                 |

students. Through learning opportunities such as these, students studying social work may seek other opportunities to collaborate with health care providers. The survey data from the social work cohort indicate the belief that education and practice are enhanced and patient care is improved with teamwork. While 27% of social work students responded that they were unclear of their role on the team, this may simply reflect that social work students are more likely have to have domestic violence training emphasized throughout their curriculum. The other disciplines participating in the team SP activity, however, were comfortable having social work as part of the patient care team. The survey data in Table 2 indicates that 81% to 95% of students representing the other four disciplines “understand the roles of other health professionals within an interprofessional team.”

In evaluating the results from the two additional questions (related to the domestic violence aspect of the



Table 4. Survey Question 12: After the Team Exercise I Have Greater Knowledge of Resources Available for People Living with Domestic Violence

| Discipline       | n (%)          |         |         |          |                   |
|------------------|----------------|---------|---------|----------|-------------------|
|                  | Strongly Agree | Agree   | Neutral | Disagree | Strongly Disagree |
| Medicine         | 14 (15)        | 31(33)  | 28 (29) | 18 (19)  | 4 (4)             |
| Pharmacy         | 20 (22)        | 44 (48) | 20 (22) | 4 (4)    | 3 (4)             |
| Nursing          | 16 (25)        | 29 (45) | 12 (19) | 6 (9)    | 1 (2)             |
| Physical therapy | 7 (24)         | 13 (45) | 9 (31)  | 0        | 0                 |
| Social work      | 1 (9)          | 4 (37)  | 5 (45)  | 0        | 1 (9)             |

SP encounter) nursing, physical therapy, and pharmacy students perceived benefit from working as a team (Tables 3 and 4). There is, however, a cautionary flag regarding the response from the medical students. The results in Table 3 show us that 40% of this group responded that they “gained no insight from the team into identification of domestic violence.” Additionally, 53% of the medical students surveyed reported that they “gained no greater knowledge of resources available for those living with domestic violence.” These results may only be a reflection of the absence of social work students on many of the teams, as only 48 were in attendance at the workshop. While these results may indicate an important educational opportunity for medical students, it remains to be seen if this pattern of responses will be replicated in the future.

There are limitations to this study. It is not always possible to require students enrolled in graduate programs to attend classes such as the IPE workshops in this study. This thereby created a disproportionate distribution of group members to each of the interprofessional teams. The uneven composition resulted in teams that were not represented by all five professional disciplines. Additionally, some groups had multiple representatives from the same discipline.

Another major limitation of this study was the “post-experience” only design of the study. While the results were supportive of the value of IPE for these students, it is not known if students held these values before the IPE experience, or if perceptions following the practicum were different from before the experience. A pre/posttest design should be used in future IPE research. Additionally, because of the short interval between the IPE experience and the assessment, which for most subjects was less than one week, it is unknown if these perceptions will be sustainable into practice.

Of particular interest to the authors was an apparent lack of recognition of team members who could be vital in helping not only identify domestic violence but also serving as a resource for victims. These results should not be

disregarded. The literature reveals that cases of domestic violence often go unidentified among newly graduated medical doctors and with medical students.<sup>17</sup> Further examination of the medical literature yielded reports that physicians were confident they had adequate training in intimate partner violence, yet they did not expect to use it in their practice.<sup>18</sup> While our survey indicated that student pharmacists recognized their team members as resources in assisting victims of domestic violence, the literature supports a greater need for pharmacist/student training in screening for and recognition of intimate partner violence.<sup>19</sup>

## SUMMARY

The majority of participants in an interprofessional team exercise were confident in their understanding of each other’s functions on the team. The exercise presented in this study aligns with the 2016 Standards issued by the Accreditation Council for Pharmacy Education regarding curricular standards for IPE.<sup>20</sup> Students had an opportunity to “gain an understanding of the abilities, competencies, and scope of practice of team members” as well as to “prepare them to competently participate as a healthcare team member in providing direct patient care and engaging in shared therapeutic decision-making.”<sup>20</sup> The evaluation of a team approach addressing domestic violence, however, demonstrated that further training on team resource recognition and utilization would benefit not only the victims of domestic violence, but also present and future practitioners.

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#### Appendix 1. Student Perceptions of Interprofessional Clinical (based) Education – Revised (SPICE-R)

1. Rating Scale: 5-point Likert-Type Scale  
Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly Agree=5
2. SPICE-R Factors and Associated Items (items numbers indicate the order in which they are listed on the SPICE-R instrument)
  - a. Roles/Responsibilities for Collaborative Practice
    2. My role within an interprofessional health care team is clearly defined.
    7. I understand the roles of other health professionals within an interprofessional team.
  - b. Patient Outcomes from Collaborative Practice
    3. Health outcomes are improved when patients are treated by a team that consists of individuals from two or more health professions.
    4. Patient satisfaction is improved when patients are treated by a team that consists of individuals from two or more health professions.
  - c. Interprofessional Teamwork and Team-Based Practice
    1. Learning/working with students from another health profession enhances my education.
    5. Participating in educational experiences with students from another health profession enhances my future ability to work on an interprofessional team.
    6. All health professions students should be educated to establish collaborative relationships with members of other health professions.
    8. Clinical rotations are the ideal place within their respective curricula for health professions students to interact.
    9. Early educational experiences are the ideal places within their respective curricula for health professions students to interact.
    10. Health professionals should collaborate on interprofessional teams.
    11. During their education, health professions students should be involved in teamwork with students from other health professions in order to understand their respective roles.



3. Suggested Introduction to administration of SPICE-R followed by SPICE-R Tool

Dear Health Professions Student,

In this survey you are being asked about your attitudes toward interprofessional health care teams and the team approach to care. By interprofessional health care team, we mean two or more health professionals (eg, nurse and pharmacist) who work together and meet regularly to plan and coordinate patient treatment.

Instructions: Please indicate the extent of your agreement (strongly disagree, disagree, neutral, agree, strongly agree) with each of the following statements related to interprofessional teams and the team approach to care. It is very important that you be candid in your responses.

1. Working with students from another health profession enhances my education.
2. My role within an interprofessional health care team is clearly defined.
3. Health outcomes are improved when patients are treated by a team that consists of individuals from two or more health professions.
4. Patient satisfaction is improved when patients are treated by a team that consists of individuals from two or more health professions.
5. Participating in educational experiences with students from another health profession enhances my future ability to work on an interprofessional team.
6. All health professions students should be educated to establish collaborative relationships with members of other health professions.
7. I understand the roles of other health professionals within an interprofessional team.
8. Clinical rotations are the ideal place within their respective curricula for health professions students to interact.
9. Health professionals should collaborate on interprofessional teams.
10. During their education, health professions students should be involved in teamwork with students from other health professions in order to understand their respective roles.

\*\*Questions added to the RI Survey

11. Working with different disciplines gave me insight into how to identify domestic violence.
12. After the team exercise, I have greater knowledge of resources available for people living with domestic violence.