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Discharge Day: A Case-Based Interprofessional Exercise About Team Collaboration in Pediatrics

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Abstract

Introduction: Interprofessional education, which gives medical students the opportunity to learn from, with, and about other health professionals, is an essential component of the undergraduate medical education curriculum. Nonetheless, deliberate and sustained integration of interprofessional education into the undergraduate medical learning experience can be challenging, especially within the clinical setting. **Methods:** We implemented a 75-minute, interactive, collaborative, case-based conference focusing on an interprofessional clinical challenge in a pediatric setting. Medical students on their pediatrics core rotation and trainees within social work, nursing, pharmacy, and nutrition explored the concept of a team, reflected on roles, and considered how interprofessional collaboration could influence patient outcomes. **Results:** One hundred ninety-two health professions students participated in 15 sessions at three sites over a 10-month period (September 2017-July 2018). After each session, participants completed a session evaluation. They gave high ratings to the effectiveness and relevance of the experience and the case vignette. Responses to open-ended questions revealed that students had learned the importance of leveraging the expertise of team members and had resolved to speak up when faced with an interprofessional challenge in the future. **Discussion:** This case-based session is a logistically feasible and positively received opportunity for health professions students to discuss interprofessional collaboration. It could be adapted for a variety of learner populations and academic environments and could be incorporated into existing curricula.

Keywords

Interprofessional Education, Clerkship, Video, Interprofessional, Communication Skills, Case-Based Learning, Pediatrics, Interprofessional Communication, Roles and Responsibilities

Educational Objectives

By the end of this activity, learners will be able to:

1. Delineate the roles of the myriad health professionals with whom they will collaborate on a pediatric interprofessional team.
2. Describe how health professionals can both optimize their own role within the pediatric interprofessional team and leverage the expertise of others to improve patient care.
3. Articulate the role of communication between members of the interprofessional team, identify the barriers to effective communication, and explore how to overcome those barriers.
4. Articulate the meaning and manifestations of professionalism on the interprofessional team.

Introduction

Pediatric care is delivered through an extensive interprofessional team as myriad health professionals are needed to attend to a child's physical, emotional, and developmental needs, as well as to support the health, safety, and stability of the patient's family.^{1,2} Acknowledging the pivotal role of interprofessional collaboration in pediatrics, as well as other specialties, the AAMC has included the ability to "collaborate as a member of an interprofessional team" as one of its 13 Entrustable Professional Activities relevant to the training of medical students.³ In addition, the Liaison Committee on Medical Education requires, in

Appendices

- A. Peds IPE Case and Questions.docx
- B. Peds IPE Video.mp4
- C. Peds IPE Session Evaluation Form.docx
- D. Peds IPE Facilitator Guide .docx

All appendices are peer reviewed as integral parts of the Original Publication.

standard 7.9, that medical students be trained to “function collaboratively on health care teams that include health professionals from other disciplines.”⁴

Even as clinicians and educators increasingly recognize interprofessional education (IPE) as a valuable and essential component of medical education curricula, sustained integration of IPE into existing programs has proven challenging. Several barriers have been identified, including asynchronous and competing academic calendars and schedules, logistical planning challenges, variability in knowledge and skills across programs, and lack of adequate training and resources for faculty and facilitators.⁵⁻⁷ Given these challenges, IPE for medical students is most often situated in the preclinical, classroom-based portion of the curriculum. Although this approach may circumvent certain obstacles, experts have noted that preclinical students may have difficulty deeply considering roles and optimal allocation of tasks before entering practice more substantively.⁸ Thus, teaching about interprofessional collaboration during the clinical phase of the curriculum targets learners further along in their training, enhancing relevance to actual problems they are likely to confront and better leveraging principles of adult learning. Moreover, integrating IPE into the clinical training environment sends an implicit message to students that interprofessional collaboration is as important as any other content gleaned in the clinical realm and that IPE is supported by the clinicians with whom they work on the wards.

Our search for relevant literature yielded few resources for medical students in the clinical phase of their training that included a multidisciplinary component and in which the primary focus of the exercise was interprofessional collaboration in the context of pediatrics. Resources targeted to this learner population focused on teaching interprofessional communication skills or concepts more generally⁹⁻¹¹ or were targeted to specific clinical skills or acute scenarios, with a secondary emphasis on interprofessional collaboration.^{12,13} For these reasons, we implemented a case-based exercise for medical students on their pediatrics core clerkship, as well as other health professions trainees, to explore interprofessional collaboration in the pediatrics context utilizing an interactive, discussion-based format.

Methods

Background Context for Implementation

The session was offered every 6 weeks, planned to coincide with the first day of the pediatrics clerkship at Harvard Medical School. Medical students in their second and third years, rotating through pediatrics at all three clerkship sites, were included. On orientation day, medical students rotated through several teaching sessions in sequence, the final one being dedicated to interprofessional collaboration. For the 12 students who participated in the Cambridge Integrated Clerkship, there existed a longitudinal curriculum without discrete blocks. For these students, the session occurred only once in the first quarter of the academic year. For all sessions at all sites, organizers identified available health professions trainees in nursing, social work, nutrition, and pharmacy and invited them to participate in the session. Extending these invitations at times presented logistical challenges. Our process was to identify, usually through asking around among our interprofessional contacts and colleagues, a designated point person for education within each of the health professions. We then contacted that individual via email or phone, provided background information on the session and aims, answered any questions, and inquired whether that point person would be willing to have his or her trainees join the session. Some health professions educators committed to regular participation, whereas others agreed to have trainees participate when feasible. For example, some health professions had trainees present only at certain times of the year. As we prepared for each new block of the clerkship, we reached out to the point person for each health profession to confirm details of the upcoming session. Learning objectives for the session were shared via the point person for each health profession. For the medical students, learning objectives were posted on the clerkship learning management system.

Medical students had some prior introduction to IPE during their first year, including having attended a panel discussion involving numerous health professionals and a series of simulations that included interprofessional groups. Additional health professions students had varying degrees of previous

exposure to IPE within their respective training programs; however, no prior experience in IPE was required or assumed.

Steps to Implementation

Sessions were 75 minutes long and facilitated by a single medical educator who was also a pediatrician. The session facilitator need not be a trained educator but would ideally have experience and insight into pediatric interprofessional practice and/or the training environment in which the participants are learning. The session could also run nicely with more than one facilitator, but this is not required. A project manager accompanied the facilitator to assist with technology needs and ensure that required forms were distributed and completed. Equipment requirements included a computer with a projection screen and the capacity to play the video content. Students convened in a conference room with enough seating for all attendants.

The session was run with variable numbers of learners, and we did not encounter a ceiling number of participants. We divided groups larger than 10 into smaller subgroups to maximize interactive discussion. We created small groups intentionally to maximize diversity of health professions in each small group whenever possible. Although the number of medical students attending was relatively stable over time, some sessions had more non-MD health professionals, and some had fewer. The session can run effectively regardless of the ratios of the different subtypes of students so long as the small groups are assembled to optimize professional diversity. The facilitator can also help ameliorate imbalances in the room by ensuring that the perspective of each health profession is well articulated during the discussion so that no health professional overwhelms the others.

Session Time Line

Introduction (10 minutes): To orient participants to the structure of the session, the faculty facilitator began with a brief introduction and review of the session time line. Health profession students then introduced themselves to the group to establish rapport and allow all attendees to understand which health professions would be represented in the discussion.

Case presentation and discussion (45 minutes): The faculty facilitator presented the case vignette entitled Discharge Day. The case was split into three sections, each with accompanying discussion questions, and projected onto a screen at the front of the room (Appendix A). The facilitator selected a student volunteer to read each part of the case and prompted students to reflect on the discussion questions pertaining to each section. Small groups discussed their reactions, and the larger group reported those reactions and engaged in a facilitated discussion. Please see the facilitator guide in Appendix D.

Video and discussion (15 minutes): After the three parts of the case were discussed in full, the facilitator played the supplemental video in which several pediatric health professionals discussed their roles on the pediatric team, characteristics of effective and ineffective teams, and their reactions to the most salient issues of the case (Appendix B). Students were given ample time to react to the video and relate it to their own experiences. This was done in a large-group format.

Wrap-up (5 minutes): Participants completed an anonymous one-page evaluation at the end of the session, rating the various session objectives on a 3-point Likert scale (*strongly disagree/disagree, neither agree nor disagree, agree/strongly agree*). The instrument also included several open-ended questions such as “What might you do differently because of the session?” to gather feedback on some of the more nuanced perspectives and reactions to the case (Appendix C).

Results

We successfully conducted 15 sessions at three pediatric clerkship sites in the Boston area over a 10-month period (September 2017 to July 2018). Approximately 10 to 15 students participated in each session, for a total of 192 trainees from five different health professions (medicine, nursing, nutrition, pharmacy,

social work) (Table). Attendance of health professions students outside of medical students was variable, often due to asynchronous academic schedules. For example, health professions trainees at site 1 were routinely available, but the health professions represented varied over time and the number of learners was inconsistent (Table). At site 2, non-MD health professions students were not as easy to identify. After a few months, nursing students were identified and invited, after which they began to attend monthly. Because site 3 was engaged in a longitudinal integrated clerkship model, the medical students remained the same all year and the session was given once in November. For this reason, no non-MD students were invited to attend the session at site 3; however, a pediatric nurse practitioner joined the session to offer the nursing perspective.

Table 1. Participation in Case-Based Sessions by Site and Health Profession

Demographics	Site 1	Site 2	Site 3	N (%)
Number of sessions	7	7	1	15 (100)
Health profession				
Medicine	89	46	12	147 (77)
Nursing	20	4	0	24 (13)
Nutrition	2	0	0	2 (1)
Pharmacy	10	0	0	10 (5)
Social work	9	0	0	9 (5)
N (%)	130 (68)	50 (26)	12 (6)	192 (100)

At the end of each session, students completed an eight-item survey. Survey items measured Kirkpatrick level 1 (Reaction)¹⁴ primarily, and data derived from these items were positive. Response options ranged from a minimum of 1 to a maximum of 3 on each item, and the mean scores were 2.6 to 2.9. The learners' quantitative feedback about the session is summarized below and in the Figure.

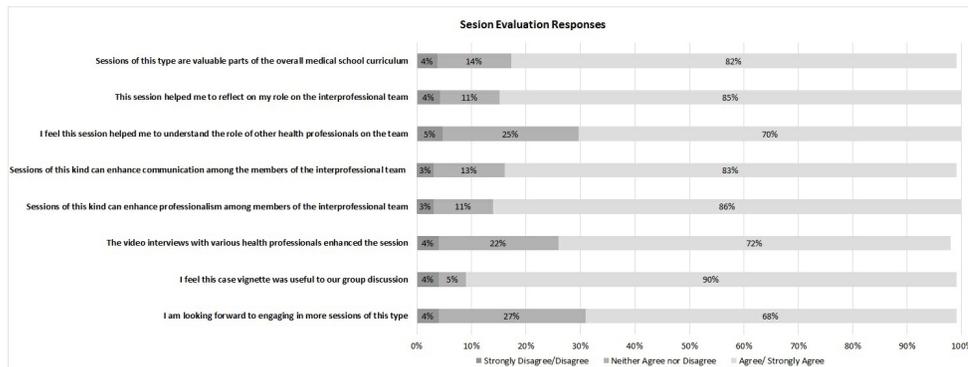


Figure. Distribution of ratings on the session feedback form.

Statement (Mean Score)

1. Sessions of this type are valuable parts of the overall medical school curriculum. (2.8)
2. This session helped me to reflect on my role on the interprofessional team. (2.8)
3. I feel this session helped me to understand the role of other health professionals on the team. (2.7)
4. Sessions of this kind can enhance communication among the members of the interprofessional team. (2.8)
5. Sessions of this kind can enhance professionalism among members of the interprofessional team. (2.9)
6. The video interviews with various health professionals enhanced the session. (2.6)
7. I feel this case vignette was useful to our group discussion. (2.8)
8. I am looking forward to engaging in more sessions of this type. (2.6)

These data were relevant to the learning objectives of the session. For example, objective 1 was to “Delineate the roles of the myriad health professionals with whom they will collaborate on a pediatric interprofessional team” and is represented by items 2 and 3 above. Objectives 3 and 4 pertained to the

importance of communication and professionalism, respectively. These map to items 4 and 5 above. Favorable ratings on these four items suggested achievement of learning objectives.

Open-Ended Responses

Kirkpatrick levels 1 and 2 (Reaction, Learning)¹⁵ were captured by examining students' responses to several open-ended questions on an evaluation form at the close of the session. Question 1 ("What were the strengths of this session?") and question 2 ("How could the session be improved?") measured reaction. Question 3 ("What might you do differently because of the session?") sought to measure learning by asking students how they might conduct themselves differently because of the session. Thematic analysis was conducted on the responses to each question and is included below.

Qualitative data obtained about the session shed additional light on the extent to which the session's learning objectives were achieved. This was most notable for question 3, indicating that learning related to the objectives had taken place. In the comments quoted below, learning objectives, when most relevant, are given in parentheses at the end.

Question 1: What were the strengths of this session?

- Interprofessional audience: Participants most often mentioned the presence of other health professionals as the most unique and valuable aspect of the experience.
 - "Having multiple professionals/interns from all different disciplines helped to clarify each person's role, importance, and point of view"—pharmacy student (objective 1, understanding roles).
 - "Including non-MD track students. This is my first rotation in my preclinical track so I had no preparation on this subject. This was the first real conversation I have had with another medical professional student"—medical student.
 - "Allowing Trainees from other disciplines to collaborate, I feel this was a unique opportunity . . . glad Social Work was included. I learned from others, hope they learned from me too"—social work student.
- Case-based discussion: Participants generally felt that a case-based approach was the most appropriate and that the case itself was realistic, practical, and something they were likely to encounter. Many participants felt that the interactive, discussion-based format of the session helped to promote realistic perspective sharing and encourage collaboration.
 - "I thought it was great to talk through a case and I liked that the case seemed very realistic"—medical student.
 - "It's good to present a case that really does highlight all of the pitfalls that can happen when there is a lack of professional interaction. It also highlights the problems that can be created when there is not good communication"—nursing student (objective 3, the importance of communication).
 - "Smaller groups were great to be able to vocalize opinions and thoughts"—nursing student.
 - "Having all the students of various professions in one room to discuss the case together. This is very meaningful especially when all students already have some clinical experience"—medical student.

Question 2: How could the session be improved?

- Interprofessional attendance: Many participants expressed a desire for more interprofessional participation in the session. This was more often mentioned by participants in sessions with a small number or a lack of non-MD attendees. Some participants felt the session would have been more impactful with the attendance of interns or residents for their more experienced perspective on the case vignette.
 - "There really should be equal or at least more representation of other health professionals. Us brainstorming is better than nothing, but we are trapped in our own field's thinking, so we cannot really understand the other perspective"—medical student.

- “I hope that future sessions can be marketed for all professions, as I felt that I learned things too and that this was beneficial to me”—pharmacy student.
- Session structure: Several participants suggested that the session should be made more interactive by including either role-playing or a second case vignette demonstrating an effective team at work.
 - “Make it more interactive—have representatives act out a case and have the rest of the group give feedback on what went well and did not. Have students go through concrete steps of interacting”—medical student.
 - “Maybe have a different outcomes case as well where communication with patients and other professionals is done more effectively”—pharmacy student.
 - “A framework or guidelines for what an ideal scenario would look like would be helpful. That way we could leave with something tangible as ‘best practices’”—medical student.

Question 3: What might you do differently because of the session?

- The confidence to speak up: Respondents mentioned they would be more likely to speak up in scenarios where they felt it was important even if doing so made them uncomfortable.
 - “I can gain the confidence to speak up and state my opinion as the (future) nurse regarding a patient’s care and plan for discharge”—nursing student (objective 1, understanding roles).
 - “Be a more active voice on the team, especially when I have insights on patients that others may not have”—medical student (objective 2, optimizing your own role).
- Interprofessional communication/collaboration: Respondents mentioned they would be more likely to collaborate with and seek advice from others on their interprofessional team in their decision-making process.
 - “Check in more with other interprofessional team members (i.e., nurse, social worker) and ask if they have any concerns”—medical student (objective 2, optimizing your own role and leveraging strengths of others; objective 3, the importance of communication).
 - “I will be more inclined to reach out to the physicians with my concerns regarding the patient and understand the importance of interprofessional care”—nutrition student (objective 2, optimizing your own role and leveraging strengths of others).
- Patient care and advocacy: Respondents mentioned putting patients at the center of care and decision making in the future.
 - “I will be a stronger, louder advocate for my patients”—social work student (objective 1, understanding roles; objective 4, the importance of professionalism).
 - “Be more confident about my role as a patient advocate and be more careful about the volume of information patients receive in one visit and how comfortable they appear”—medical student (objective 1, understanding roles; objective 4, the importance of professionalism).

Discussion

This case-based session was a logistically feasible and positively received opportunity for health professions students to discuss interprofessional collaboration. It could be adapted for a variety of learner populations and academic environments and could easily be incorporated into existing curricula. Guided by the feedback gathered from our first few iterations of the session, several refinements were made. First, the IPE module initially began with a PowerPoint slide deck describing characteristics of effective teams as described in published literature. The slide deck was omitted after several sessions and the video was integrated into the session because the perspective of authentic pediatric health professionals seemed to be a more powerful way to convey this message. The video was played in its entirety at the end of the session, as noted above in the Methods section; however, it can also be started before the case. The video was then paused and attention turned to the case. The facilitator returned to the video to play the final portion, after which the health professionals shared their reactions to the case. The health professionals’ discussion of their roles, characteristics of an effective team, and signs that the team is not working well provided a helpful foundation for the Discharge Day case discussion.

Participants consistently stated that the presence of and interaction with other health professional trainees were among the most valuable aspects of this experience. This viewpoint has been echoed in other IPE resources utilizing interactive, team-based approaches.¹⁶⁻¹⁷ Despite this, session organizers had some difficulty identifying additional learners to attend from the non-MD health professions, often due to differing academic calendars and schedules—a challenge cited in other literature.⁷ This was particularly true of the second site. The lack of a central source of information for identifying individuals interested in and responsible for incorporating IPE into their curricula compounded this challenge. Persistence was required, and, over time, organizers were able to more reliably arrange for interprofessional audiences as relationships were built and maintained with the individuals responsible for identifying other interprofessional attendees.

Several logistical considerations arose during the sessions. If there were more than 10 learners, the room was subdivided into smaller discussion groups (see the Methods section). Care was taken to ensure that each small group had a mix of health professions represented to encourage interprofessional perspective sharing. Given splitting into smaller groups, the room had sufficient capacity to accommodate this approach. Because the discussion prompted students to compare their own experiences with the events of the case vignette, the session was held in a location with sufficient privacy to encourage students to comfortably share their experiences and engage in open dialogue. As such, the facilitator allowed ample time for in-depth discussion. We found 75 minutes to be sufficient.

Participants frequently stated in their feedback that they would enjoy a role-play component in the session. Considering that there was limited time for this during the busy orientation day, organizers instead built in a simulation component to appear later in the clerkship. This simulation focused on interprofessional conflict negotiation and allowed learners to practice their communication skills in the setting of a disagreement arising in care. Several participants mentioned a desire for more than one scenario. Although this was not feasible given the time allotted for our activity, others conducting this activity may experiment with including additional scenarios if time allows. Based on participants' feedback that they would like to see more structured guidelines for resolving the issues in the case, a detailed facilitator guide was created (Appendix D).

Limitations

Several limitations were encountered. There was a preponderance of medical students at the sessions due to the aforementioned scheduling challenges. The video sought to remedy this by presenting the thoughts and opinions of other health professionals on the case; however, this was not the same as a live interprofessional discussion, and responses by participants at sessions not well attended by other health professionals revealed that the experience was perhaps not as rich. Moreover, most of the evaluation focused on Kirkpatrick level 1. Future work will focus on additional program evaluation to target higher-level outcomes.

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None to report.

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Informed Consent

All identifiable persons in this resource have granted their permission.

Ethical Approval

The Harvard Office of Human Research Administration approved this study.

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