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FROM THE EDITORS

This spring marks an exciting time for JCIPE as we prepare to celebrate our 10th anniversary as a center for interprofessional education. Ten years ago, students across our six colleges rarely interacted; IPE was a fairly new and often misunderstood term on campus. Now, a decade later, Jefferson has embraced a culture where IPE and collaborative practice are expected, welcomed and increasingly integrated across the learning continuum, from first year students to seasoned providers. This spring, we graduated our ninth cohort of Jefferson Health Mentors Program students, developed three new advanced IPE electives, compiled a comprehensive inventory of IPE programming on campus that now includes 18 core and advanced programs, and introduced a new transcript certification for Excellence in Collaborative Practice that will be available to students who demonstrate "proficiency" in collaborative care in fall 2017. Later this spring, the Journal of Interprofessional Education & Practice (JIEP) will publish a special edition featuring works from the October 2016 JCIPE biannual conference and co-edited by Malcolm Cox, MD, Adjunct Professor of Medicine, University of Pennsylvania and our own Elena Umland, PharmD, Associate Dean, Academic Affairs and Associate Professor, Jefferson College of Pharmacy and Co-Director, Jefferson Center for InterProfessional Education. Additionally, after validation of the "Team" Jefferson Teamwork Observation Guide (JTOG) was finalized last year, we have now completed rigorous study of the patient version and have several publications pending. With the help of our IT teams at Jefferson, we are also thrilled to announce that the final touches on the JTOG "app" are nearly done! We believe the app will be available for dissemination this summer. It incorporates the voice of the patient and family member (or support person) as well as students and providers as part of teamwork assessment and will enable national benchmarking of collaborative practice behaviors. A case study of the JTOG will be featured in the upcoming release of Practical Guide: Volume Four from the National Center for Interprofessional Practice and Education, entitled *Assessing Teamwork: Stories from the Field*.

Our Center has also undergone some recent changes in leadership as Elena Umland, PharmD and Lauren Collins, MD now serve as the Center's two new Co-Directors. Dr. Umland has been integral to the success of IPE in the College of Pharmacy and across campus, serving as a champion for curricular innovation for many years, and JCIPE is excited to officially welcome her to this new leadership position. Dr. Christine Arenson, recently appointed as Chair of the Department of Family and Community Medicine, looks forward to staying involved with JCIPE as a senior advisor. In addition to new leadership, our Center is also expanding! We have recently hired a new Program Coordinator for our Advanced Programs and plan to bring on another Program Assistant this spring. We are thrilled to be able to grow as a Center to meet the increased demand for training and assessment in collaborative practice on campus and beyond.

In addition to all of the updates about JCIPE, we could not be more thrilled with this edition of *Collaborative Healthcare*. We have another exciting collection of articles. One mixed methods study describes the impact of a longitudinal IPE leadership development program on nurse-physician behaviors. Another study describes caregiver (family member/support person) assessment of teamwork on a palliative care team. A third article describes an innovative IPE pilot that uses a virtual world platform to teach interprofessional students about working with homeless populations. Finally, a medical student reflects on her experience as part of an interprofessional Near Miss Root Cause Analysis program and her ability to learn from near misses to improve patient safety. We hope you enjoy the articles, and we wish you a happy spring!

JEFFERSON CENTER FOR INTERPROFESSIONAL EDUCATION
10 YEARS

IN THIS ISSUE

Caregiver Evaluation of a Palliative Care Consultation Team Using the Jefferson Teamwork Observation Guide (JTOG) by Caregivers of Severely Ill Patients

The goals of this project were to assess overall satisfaction with the palliative care team and to use the JTOG tool to analyze family perception of the interprofessional nature of palliative care and the effect it has on the delivery of care.

Background

Palliative care teams strive to improve the quality of life of patients and their families who are faced with life threatening illnesses by addressing the physical, psychosocial and spiritual aspects of their care (World Health Organization, 2017). The palliative care team is an interprofessional team made up of physicians, nurses, social workers and chaplains and often partners with many other disciplines. Palliative care has been shown to increase quality of life in patients with cancer and help improve communication amongst patients, their families and their care teams (Temel, 2010; Seow, 2008). Additionally, many studies have sought to prove the effectiveness of palliative care using validated tools such as the FAMCARE survey with mixed results (Parker, 2013).

The goal of this project was to use a different validated tool, the JTOG, to analyze the effectiveness of our interprofessional team. Because palliative care is not a medical specialty whose effectiveness can be measured by procedural outcomes, teams often seek using satisfaction scores as a means of measuring how well they are doing. The JTOG replaced our prior patient satisfaction survey. The results are described below.

Methodology

The JTOG is a validated survey (Lyons, 2016) used with learners, that has been adapted to elicit patient perspectives of five domains of interprofessional collaborative practice: communication, values/ethics, teamwork, roles/responsibilities and patient-centeredness. Upon completion of an interprofessional family meeting discussing the patient's clinical status, a trained research assistant, who was not part of the healthcare team, administered the survey via secure mobile tablets.

Results

During the period of March 12, 2016 through December 2, 2016, 35 surveys were completed by caregivers. Twenty-seven respondents were female and eight were male. Sixteen respondents identified as Caucasian, 10 African American, 14 Asian American and three as Hispanic. Eighty percent of respondents were 40 or older (27/35) and 20% of them were younger than 40 (8/35). One hundred percent of respondents agreed to the importance of healthcare professionals working together (mean 3.96). Overall satisfaction with the palliative care team was 3.46 out of 4.0. Of the other eight questions relating to the five collaborative practice competencies, the team received an average score of 3.46. Of note, respondents were able to identify multiple members specific to the palliative care team as being involved in the overall care team: doctors (92%), nurse practitioner (58%), care manager (33%) and social worker (28%). The families were also given the opportunity to give qualitative feedback by answering an open-ended question. Representative comments are in Figure 3.

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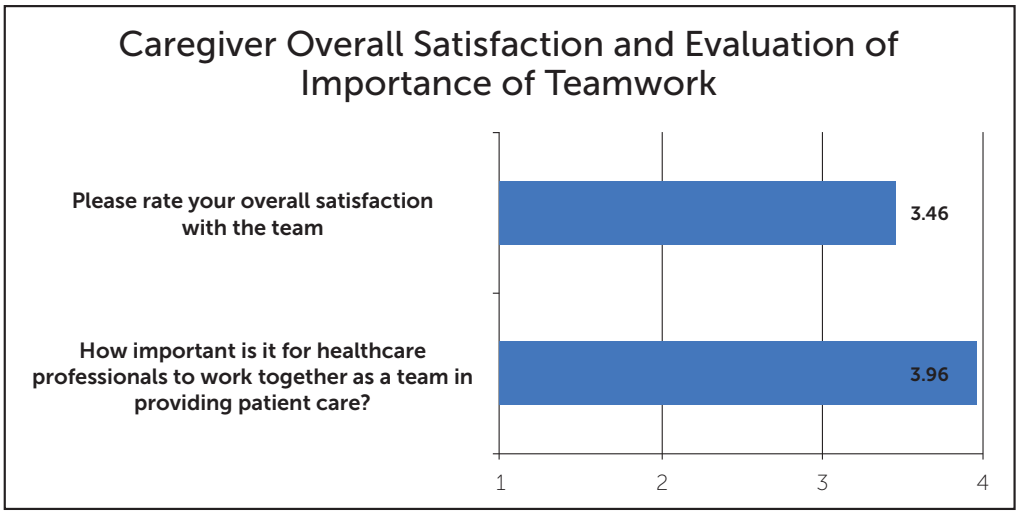
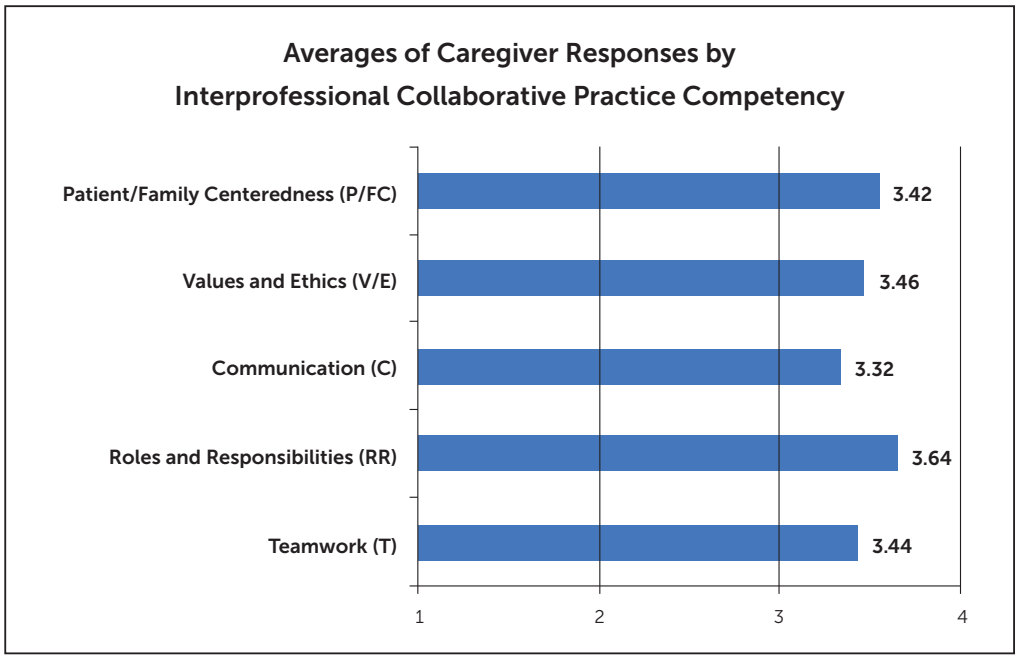
Figure 1



Scale: 1=Least Satisfied/Important, 4=Most Satisfied/Important
n = 35

Figure 2



Scale: 1=Strongly Disagree 2=Disagree 3=Agree 4=Strongly Agree
n = 35

Continued from page 2

Conclusions

The use of the JTOG, administered by trained research assistants using secure mobile tablets, helped dramatically increase our response rate to patient satisfaction surveys. The surveys were completed after an interprofessional team family meeting. Previously, the surveys were completed post discharge by our team's administrator. The JTOG helped to identify areas where the team could improve, including listening to one another and engaging with one another in friendly interactions. At the same time, the tool helped provide us with feedback that families were overall satisfied with our team, a key marker in the overall perception of care that they received. We believe that the JTOG could be used by other interprofessional palliative care teams to measure their family satisfaction markers.

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Kristine Swartz, MD, Molly Hanson, CRNP
Kathleen Mechler, MD, Brooke Worster MD
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Figure 3

Please list anything the care team did that positively affected your experience as a caregiver.
They were very compassionate.
Very friendly and made me feel part of the team.
They tried their best. They exhaust all options and do not give up on patient care. They have not given up trying to make patient feel better. Still trying.
Course of treatment and action was clear. Interacting with other family members at the meeting was also positive.
They didn't rush. Complimented caregivers on being supportive. Compassionate. Offered assistance beyond this hospital visit.
One doctor who came many times and made family comfortable with having one professional constant through whole experience.
They are very helpful. She talks to us. They give us up to date information about the patient.
Feedback was supportive. Overall great experience.
They finally listened.
The team seemed to care. They were concerned and wanted to help.
The team was very sympathetic to our needs and our father's needs.
They allowed us to express our opinions and feelings well. I saw the professionals' opinions and how well they were based on experience. They were very patient and attentive to us.

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Enhancing Services to Homeless Populations through an Interprofessional Virtual World Simulation

Simulations are increasingly implemented as core teaching strategies in healthcare education. Along with the growth and proliferation of many forms of simulation, new venues for implementation also have emerged, including virtual world (VW) role play simulations (Jarmon, Traphagan, Mayrath, & Trevedi, 2009; Rogers, 2010; Walker & Rockinson-Szapkiw, 2009). These VW simulations enable interprofessional teams of students to learn and test their knowledge and skills in real time, within settings that can model a wide range of institutional and community practice environments.

VW simulations provide many of the same benefits that have been described in campus-based simulations, such as practice within realistic environments for care (Lateef, 2009); immersive environments that facilitate active learning (Cant and Cooper, 2009); the ability to practice skills and receive immediate feedback (Doolen, Giddings, Johnson, Guizado de Nathan, & Badia, 2014); and opportunities for experiential learning with complex patients that eliminates risk of harm to patients (Guise, Chamber, and Valimaki, 2011). An additional benefit of VW simulations is that the VW enables community building among participants in remote locations without the need to be physically present with each other in the same geographic location (De Freitas, Rebolledo-Mendez, Liarokapis, Magoulas, & Poulovassilis, 2010; Warburton, 2009). VW simulations may also provide opportunities for student learning in situations or environments that would be too costly to set up or impractical to implement because of their complexity (McDonald, Gregory, Farley, Harlim, Sim, & Newman, 2014). Examples include simulation of the multi-step staff handover approaches and procedures to teach nursing staff in an intensive care unit and 3-D immersion in a realistic home environment that teaches home environmental assessment focused on identifying the many hazards that can endanger an elderly person at home

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(Ghanbarzadeh, Ghapanchi, Blumenstein, & Talaei-Khoei, 2014).

VW simulations have been used to provide training in communication strategies designed to decrease medical errors (Foronda, Gattamorta, Snowden, & Bauman, 2015), to enable emergency preparedness for medical staff in large scale disasters (Kamel Boulos, Ramloll, Jones, & Toth-Cohen, 2008), and to teach strategies for counselor training involving unsafe situations such as working with clients who engage in self-harming or physically aggressive behaviors (Walker & Rockinson-Szapkiw, 2009). These examples highlight the advantages of VWs for simulating realistic situations in a safe environment, without the physical or ethical risks likely to occur in an onsite educational simulation.

Teaching students to work with vulnerable populations such as homeless and formerly homeless individuals provides an example of learning to act in complex, potentially unsafe, and ethically challenging situations. Further, use of a virtual world for training also protects and mitigates undue burden for homeless populations who already are burdened by adverse socioeconomic conditions. This area of emerging practice is crucial for future health and human service providers, as students who are better educated on the needs, lifestyles, and behaviors of homeless individuals will be better equipped to not only provide medical care but also to advocate more effectively and passionately for these clients to address political, economic, and social factors impacting their health (Arndell, Proffitt, Disco, & Clithero, 2014; Boylston & O'Rourke, 2013).

The potential advantages of using virtual worlds to train health and human services students in working with the complex and highly varied needs of homeless populations led to development of the Enhancing Services for Homeless Populations (ESHP) program. The purpose of the program is to design, create, and disseminate a replicable model to provide team-based, interactive, culturally responsive training in the education, support and care of homeless and formerly homeless populations using an innovative virtual training platform.

This pilot program consists of 18 students recruited from the disciplines of medicine, nursing, occupational therapy, physician assistant, physical therapy, and public health using the virtual world of Second Life. Prior to participating in the program, students complete a pre-test of knowledge, self-efficacy, and attitudes for working with homeless populations and an orientation to homelessness provided through selected modules from the National Health Care of the Homeless Council (NHCHC, 2017). Students then submit a reflection paper based on the modules and their own thoughts about their working with homeless individuals as a future health or human service practitioner. After completing these activities, students engage in an orientation to Second Life to learn basic skills such as voice and text chatting, moving from place to place, and interacting with objects.

Students then begin the ESHP program, following a case based learning method adapted from Choi and Lee (2009). This method is designed to facilitate critical thinking and problem solving in addressing ill-structured, complex problems that are characteristic of real-world work and work with homeless individuals in particular. Students move through phases of problem identification and refinement, viewing the issues from the multiple team perspectives of their disciplines and using evidence from published literature. They are provided with a description of the case of the homeless person and relevant resources including videos that illustrate challenges encountered by the person.

The structure of the ESHP program consists of role play simulations using three case scenarios. Using the triad approach first developed by Ivey (1971), each student rotates through the roles of consumer (homeless person); helper (using the perspective and training of their discipline); and the observer, who assesses the overall performance. Students then debrief about the role play, and complete a self- and peer assessment based on the work of Smith (1997; 2011) and an observer assessment based on the work of Okun (2012). Next, students post a summary of results from the assessments on their team blog on the learning management system, Blackboard Learn. Within a week following the debriefing summary post, students meet with a faculty facilitator to discuss the learning experience, the primary issues that arose, and how they might approach subsequent role plays the same or differently. The process is repeated with each of the role play cases. Thus, reflective processes occur both individually and in groups, using written and oral discussion formats to explore the role play from as many different perspectives as possible and over a period of time. The debriefing process is particularly important as students need to separate themselves from the roles they have played, analyze their experiences, and then draw from these constructive concepts, attitudes and strategies to enhance their effectiveness in working with their future clients.

After completing the program, students complete several assignments: 1) Jefferson Teamwork Observation Guide (JTOG©), in which they assess the behavior of each member of their interprofessional team; 2) a post-test of knowledge, self-efficacy, and attitudes toward homelessness that

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includes a narrative about their reflections upon their experiences in the ESHP; and 3) a final debriefing.

Our initial assessment of the ESHP based on work to date indicates that use of the triad approach to role play simulations in a virtual world setting may complement existing methods for interprofessional training. Additional affordances of virtual worlds include the ability to work as an interprofessional team while in different geographic locations and practice skills that are essential to work with underserved populations in a no-risk environment. Preliminary student feedback indicates that the VW simulations using triads of helper, client, and observer helped them achieve a greater focus on patient-centered care and realize the importance of basing intervention on patient needs, instead of relying on a pre-conceived agenda.

Students also reported that the team process was valuable, because they gained insight from other disciplines whose perspectives on the client were different from their own. Sharing their perspectives expanded the range of options they considered to begin addressing the complex problems of homeless individuals.

A full analysis of pre- and post tests and qualitative findings from student work reflecting upon the experience in the ESHP will be conducted after completion of the project in June, 2017. Results are then expected to inform future development and refinement of the ESHP and provide insights about ways that virtual world simulations can be applied to a broader range of service contexts and client needs. This, in turn, may contribute to ongoing efforts to develop simulations for interprofessional education that foster increased depth and breadth of student learning.

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Impact of an Interprofessional Leadership Program on Collaboration in Practice

Purpose

The purpose of this project was to improve attitudes towards collaboration between nurse and physician leaders and to describe the changes in attitudes and behaviors following completion of an interprofessional education (IPE) leadership development program.

Significance

The Institute of Medicine (IOM) 1999 study, *To Err is Human: Building a Safer Health System*, demonstrated that poor collaboration among clinicians can contribute to negative patient outcomes and further outlined that traditional methods of learning in healthcare result in nurses and physicians becoming isolated from one another and thus unprepared to work collaboratively (Delunas & Rouse, 2014). The nurse-physician (RN-MD) relationship is complex and is influenced by differences in both methods of academic preparation and the perceived value and definition of collaboration between the two groups (Hughes and Fitzpatrick, 2010). Unhealthy relationships such as those that are hostile or disruptive can result in lower levels of job satisfaction, retention, and safety and quality of care delivery (Rosenstein & O'Daniel, 2005; Manojlovich & DeCicco, 2007). The collaborative relationship includes mutual

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trust, open communication and respect for the skills of each discipline (Schmalenberg, et al., 2005).

For true collaborative relationships to develop, each professional must value the other discipline's contribution, creating mutual or equal power in their relationship (Nelson, King, & Brodine, 2008). This requires confronting the perception that each party has of the other's role. The theoretical framework that supports this process is Critical Social Theory (Freire 1972 as cited in Fulton, 1997), which promotes social phenomenon as being explained by evaluating the history of the social development. The theory framework is dependent on the assumption that knowledge of the current state will facilitate change in the relationship. Utilizing social theory allows for the application of praxis, or reflection with action. Praxis is the first step towards empowerment to change. Identifying the attitudes towards collaboration will provide objective data on the true state of perceptions and provide for reflection with actions that facilitate the RN-MD empowerment to change their relationship.

Background

In the practice analysis of the organizational setting in Central Florida, there was evidence of dissatisfaction in the RN-MD relationships within the clinical roles both in the unit practice setting and within the leadership team. It was demonstrated that nursing and medical leadership structures are in silos and often have limited collaborative clinical agendas. There was a lack of shared decision making and poor communication in regards to the decision-making process. In recent years, there has been a shift towards innovation and adaptability through a shared IPE leadership program for RN and MD leaders, but the evaluation of the effectiveness of the intervention had not been established.

Methodology

The intervention included an eight-month interprofessional leadership development program. The curriculum for the program was developed by Lt. General (Ret.) Mark Hertling. Monthly course work involved a four-hour didactic session and tabletop simulation exercises. The program concluded with an experiential leadership review of strategy and team dynamics in Gettysburg, Pennsylvania. Curriculum is divided into four units: 1) Core Values, 2) Influencing Performance, 3) Collaboration, and 4) Systems Thinking (Hertling, 2015). A mixed methods study of the current program participants (n=56) included quantitative results of a pre- and post-survey, the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration (JSAPNC), (Hojat et. al, 2003). A second method, a descriptive, qualitative study, was completed with past program participants (n=21), which included semi-structured interviews regarding behaviors that have occurred as a result of their participation in the program.

Results

Eleven of the 15 JSAPNC questions reflected higher mean scores on post-test results with two questions resulting in statistically significant changes. T-tests were utilized to compare the mean scores on the pre- and post-tests. Post hoc testing of the JSAPNC was compared to determine the question items with the major changes in scores between the pre- and post-tests. Repeated measure MANOVA was utilized to evaluate differences between group disciplines and there were no statistically significant differences on tests of between subject effects or over time. The two statements with statistically significant changes between pre-and post-test scores, "Nurses are qualified to assess and respond to psychological aspects of patients' needs" (t=-2.46, P=.017) and "Nurses should be involved in making policy decisions concerning hospital support services upon which their work depends" (t=-3.41, P=.001) indicate improved attitudes towards the collaborative impact of the nursing discipline, caring versus curing. The construct of these questions reflects the orientation of roles (Hojat et al., 1999). Petri (2010) describes role awareness as an antecedent to the concept of collaboration.

In directed content analysis (Hseih & Shannon, 2005), existing research focuses the variables of interest to guide the creation of the initial coding pattern. Data analysis required sampling, data collection and analysis to occur concurrently. Transcripts of the interviews were read and participants' key words or phrases that described collaborative behaviors were selected. The key words became the basis of the initial coding and emerging themes. Analysis of the qualitative interviews revealed five themes of behavior changes among participants with consistency and included: 1) increased self-awareness, 2) valuing diverse perspectives, 3) enhanced communication through listening, 4) familiarity which engenders trust and 5) increased participation in leadership activities. A summary of data collected with the themes and most notable quotes is presented in Appendix A.

Repeated behaviors identified by participants included the identification of their own values, awareness of the importance of value and leadership action congruence, an appreciation of their own leadership development gaps and an awareness of their ability to impact others. Participants reported gaining new respect for diverse perspectives and roles. Behaviors consistently described by participants included the utilization of listening techniques and problem resolution through effective communication. Participants reported an increased sense of value of the roles and perspectives of others. Participants also reported behavior and perception changes that included empowerment to lead, ownership of practice and increased participation in leadership. A notable item is that all participants in the IPE intervention viewed themselves as responsible for organizational leadership and success. The most frequently reported behavior change noted among participants was improved relationships between course participants and the long-lasting trust it engendered. The attitudes among the current program participants can be trended in the quantative survey results

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Student Reflections from Team Simulation and Fearlessness Education (Team SAFE) Training – Spring 2017

"Today I learned how understanding each person's role is crucial in effective teamwork."

"I learned how to effectively advocate and communicate about a patient's needs that I find concerning."

"[It's good] for all professionals to use a universal language within healthcare."

"The repeated [simulation] scenarios helped each teammate have a better understanding of how to react and communicate. It is far better to learn these things in lab than in practice."

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as question constructs reflect improved attitudes in categories of collaborative behavior that align with the key themes of the self-reported behaviors in practice of past program participants.

Implications for Practice

Findings from the project indicate that the IPE program resulted in both physicians and nurses engaging in collaborative behaviors with consistency nine months following the program completion. Findings do confirm previous research that collaboration is a social process and confirms that processes of RN-MD leadership collaboration are present in the current practice setting among IPE participants (Fewster-Thuente, 2015). The study identified a successful structure for shared learning which included a focus on value identification, congruence with organizational values, role clarity, teamwork, communication, and an empowerment framework that creates motivation to lead. Implications from this study include the benefit of organizational support for IPE programs as they may improve collaborative behaviors and attitudes towards collaboration in practice. Hospitals are facing increasing cost constraints and the investment in leadership development programs where the program outcomes benefit not only the individual participant but the organization overall will be an important consideration in selecting effective future programs to develop.

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Appendix A: Physician and Nurse Collaborative Behavior Themes

Behavior Themes	Study Participants' Quotes
Increased Self-Awareness	**MD:** *"It allowed me to raise awareness of my actions. How I conduct myself really does affect the success of not only my interpersonal relationships with the patients but also the staff and administrators."* **MD:** *"The program is phenomenal. It has changed me. It has even helped me to be a better father. Learning about myself. What is it that drives me? What are my values? What am I trying to accomplish? Just stopping and being aware."* **RN:** *"I realized all of a sudden, it opened my eyes to things I didn't see before. One of the biggest things is that while everyone wants a seat at the table, we have to learn table manners. So if we are making demands if we are slamming things down, no one will want you at the table. Check yourself on how you are bringing yourself to the table."*
Valuing diverse perspectives	**MD:** *"Really before I say anything or think anything, I try to put myself in their shoes. Not just nurses but janitors or whoever. Even the system's shoes. What in the system is making it like this? An introspective review that I definitely do more since the class."* **MD:** *"I try to look more at the other person's perspective a lot more. Now, more than I did beforehand. I try to look at their perspective and what motivates them more. I try to stop and think about what they are they are thinking and what they might value."* **RN:** *"Many think leading is being the loudest voice in the room. But leading happens best by influencing. Influencing behaviors starts by appealing to values. And values start by valuing the other person. What they bring to the table."*
Enhanced Communication Through Listening	**MD:** *"Kind of reminding you to listen more than you talk. Obviously I had heard that before but you tend to get into practice and you think you know everything and sometimes I think we forget to listen to other people."* **MD:** *"It helped me professionally but also personally. I am a better listener. This sounds wrong to say but if you are really smart, if you have a high IQ, you think you know everything. You don't listen. When people are talking, you jump to the conclusion instead of listening. Before you say anything, listen. Think. What is this person thinking, what is their problem, their concerns, background, their perspective. Then you understand better."* **RN:** *"I would say that a meeting where a PLD person is running the meeting it is definitely more collaborative, more listening. It is more based on a relationship and how it will impact the team and that person. It really takes the level of stress down many notches."*

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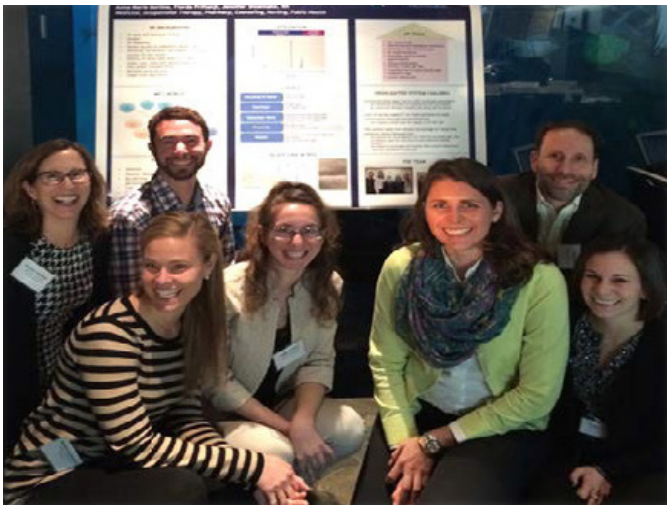
Behavior Themes	Study Participants' Quotes
Familiarity which then engenders trust	**MD:** *"At the beginning of the class it was definitely an, "us- versus- the -hospital" kind of dynamic. By the end we started seeing each other as human and taking each other's point of view."* **RN:** *"When you see each other in the meeting and you knew each other from the class, there is a different, sort of unspoken way of understanding."* **RN:** *"Anybody that I know in the class, whenever they see me, they pull out their coin and we trust each other. It established a relationship that wasn't there before. The more we got to know each other the more we saw how important it was."*
Increased leadership participation	**MD:** *"I feel empowered to be a leader. I have a seat at the table. That is new. Because we participated in the program we are willing to be tapped for other projects and are seen as someone who will work together to solve challenges."* **MD:** *"A weird situation is that we had to get rid of a partner in my group. It hit home that I have to take more responsibility for this partner and the medical profession and take a bigger look at things instead of staying in my little cocoon."* **RN:** *"I definitely see a difference in the physicians who attended the course versus those who didn't. Take Dr. ___ for example, I see he has an ownership in the outcomes and that his commitment is the same as mine."*

Jefferson Student Interprofessional Hotspotting Program

JCIPE is thrilled to announce that our Center has been selected as a national Student Hotspotting hub by the Camden Coalition of Healthcare Providers (CCHP), Association of American Medical Colleges (AAMC), Primary Care Progress (PCP), Council on Social Work Education (CSWE), National Academies of Practice (NAP), and American Association of Colleges of Nursing (AACN)! As a hub during the two-year grant award, Jefferson will scale up its hotspotting program to include eight interprofessional teams in addition to hosting six teams from regional institutions, playing an integral role in propelling this national movement for caring for complex patients forward.



Hotspotting is an emerging method for reducing healthcare cost while improving patient health and patient experience. Students and faculty advisors work with "super-utilizers," patients who overuse the ED and inpatient hospital care, in order to provide individualized and hands-on interventions that reduce their hospital utilization. Jefferson's hotspotting program facilitates teams of interprofessional students to learn about the challenges faced by complex patients during their interactions with the current healthcare system. Faculty act as mentors/supervisors to interprofessional student teams to facilitate identification of appropriate patients, determination of goals, and delivery of interventions. This innovative program offers an opportunity to produce collaborative healthcare leaders of the future and to enhance the well-being of our most complex patients.

Near Miss Root Cause Analysis Reflection

As a medical student, my education has largely been divided into two different schools of teaching: didactic classroom instruction and hands-on apprenticeship. The balance between these two components has shifted towards the latter as I have progressed in my education. For example, we first learn about the anatomy and physiology of the heart, then progress to learn about the textbook presentation and patho-physiology as well as treatments of processes such as congestive heart failure. Then as upper years we encounter patients who are faced with these conditions and are tasked with using our knowledge base to provide appropriate care and treatment. In my experience, it is this last component that truly solidifies a student's knowledge and competency in a particular topic. However, this system doesn't exist for root cause analysis and other similar systems of recognizing and fixing the underlying causes of medical errors.

Winston Churchill once said, "All men make mistakes, but only wise men learn from their mistakes." In the field of healthcare, it is especially important to recognize this concept. In 1999, The Institute of Medicine publicized the high death rates that were occurring due to medical error in *"To Err Is Human: Building a Safer Health System"*. One important method that has emerged to help investigate mistakes is the Root Cause Analysis (RCA). It involves analyzing

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a situation to assess underlying factors that resulted in any adverse event with the goal to identify possible targets for intervention (Patient Safety Network, 2016).

My initial experience with the RCA method was during a summer internship in Quality Improvement and Safety at a local hospital. During this experience, I had the opportunity to sit in on multiple root cause analysis presentations. From this, I learned the basic structure of a RCA, how the proceedings occurred, and the overall template for event review. However, I remained largely an observer during this experience. In a way, this reflected the didactic classroom component of my RCA teaching. The experience was enlightening and provided a necessary foundation for understanding the larger role of RCAs within an institution.

My understanding of the analysis and investigation was not truly solidified until I experienced the hands-on apprenticeship element through the Near Miss Root Cause Analysis (NMRCA) curriculum at Thomas Jefferson University. It was here that I truly learned what was involved in a RCA investigation. Our interprofessional team consisted of two medicine residents, one medical student, and one nurse practitioner student. The diversity of professions and educational levels helped provide a variety of views, opinions, and approaches to the investigation. In particular, the unique interprofessional structure of the curriculum helped improve teamwork competencies, and challenged our members to think outside of their own professional roles.

While in this role, I became an active participant in the RCA investigation. The first challenge we faced was how to best communicate amongst individuals with varying and demanding schedules. The NMRCA takes advantage of an online learning platform designed for team collaboration. This was utilized to facilitate asynchronous group work. We interviewed the various staff members involved with the case directly, speaking with nurses, physicians, housestaff, and other teams about their knowledge of policy and practice. Potential systemic factors such as hospital policy, scheduling and documentation were also evaluated. At this point, I recognized for the first time the depth and breadth of work that is necessary to conduct a thorough RCA investigation, and the complexity of coordinating this work amongst multiple team members. Initially, it seemed simple enough to divide the tasks evenly among team members. As we proceeded, tasks quickly were redistributed based on level of access to staff members and documents, as well as level of clinical knowledge.

The medical residents were able to provide personal insight into the application of hospital policy and procedures, as well as attest to everyday communication amongst the hospital staff. They work on the floors regularly and thus were best able to comment on the environment of the hospital. As housestaff, they were able to easily access the other faculty and staff for interviews. Furthermore, they were able to discuss which interventions they thought would be most practically implemented and accepted by the residents and other medicine staff.

The nurse practitioner student provided information in regards to specific nursing policies and procedures. She helped show the difference in electronic records that nurses had access to versus the medical staff's view. She pointed out and facilitated discussion of which profession should maintain responsibility for different tasks.

As a medical student recently starting clinical rotations, my hospital experience has been minimal; however, this enabled me to provide an outside perspective to the analysis. I was not previously involved in daily implementations of hospital policy; thus I was able to question why certain steps occurred. This helped elucidate that certain procedures were not documented policies, but rather were performed out of routine, which led to a discussion of routine procedures. Subsequently, I was able to provide outside research and studies to further educate the group on the prevalence of and solutions to the adverse event outside of our hospital.

After completing the investigation, we worked together to create a presentation summarizing our findings. We presented our investigation at a conference to interested parties, similar to the conferences I attended during my summer internship. We facilitated discussion and analysis amongst the participants, who were members from a variety of health professions. Our goals were to enable participants to recognize the error and risk, identify the contributing causes, and generate systems-level solutions through interprofessional problem solving.

My experience with the investigation of near miss events confirmed my belief that a hands-on approach is necessary to truly become proficient in an educational competency. In my prior summer internship experience, all of the research had already been completed and was presented in a clean and organized presentation. Had I not participated in the NMRCA curriculum, I would not have learned the true importance of having an interprofessional team when performing the investigation.

Overall, the hands-on, interprofessional setup of the team helped make the near miss RCA investigation successful. This approach allows participants to be fully immersed in the process and learn the intricacies involved in completing an investigation. The diversity of team members led to an in-depth investigation that looked at the error from a variety of perspectives. The interprofessional approach was further strengthened through the conference at the end of the curriculum. This event provided a greater breadth of perspectives by incorporating an even larger number of professions. The NMRCA curriculum will be strengthened by the incorporation of other interprofessional team members such as occupational therapy, physical therapy, pharmacy, and others in future analyses. By including multiple professions in the discussion of the case and development of potential solutions, it increases the likelihood that these action plans will be effective in the future. From this experience I learned it is important to continue to create interprofessional teams for any future root cause analysis programs.

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Meet an IPE Champion at Thomas Jefferson University

Deborah Cruz, CRNP

Describe your work with JCIPE:
I have been working with different aspects of team training in Obstetrics since 2006 and in 2010 helped with the LifeWings project for OB. Simulation has been a large part of this development. We have learned a tremendous amount from this teaching mode.

It was a great experience to work with the simulations during the JCIPE TeamSTEPPS workshops. The art of effective communication is imperative to our role as providers, working among peers and other disciplines. Starting this interaction with students will facilitate this process in their practice and will also develop more collegial and respectful relationships. It is important to appreciate what all disciplines offer to our patient care team.

What excites you about this work and why is it important to you?
I would say a passion of mine is interprofessional communication and relations. I believe as we deliver patient care, it is imperative to have a team of professional staff that respects each other's practice and what they offer to the delivery of care. We need to articulate this as early in the development of nursing, physician, and other imperative staff as possible, which means during their preclinical education.

I know our units are not perfect and we still confront issues on a daily basis, but our training has definitely facilitated the process and improved relations among the team.

JCIPE is engaged in innovative IPE work year-round on and off the Thomas Jefferson University campus. Want in-the-minute updates about our programs and events?

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