

THE ARTS IN HEALTH PROFESSIONS EDUCATION

Creating a Film to Teach Health Professions Students the Importance of Interprofessional Collaboration

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Objective. To produce, implement, and evaluate the effectiveness of a film to develop the foundational knowledge and skills of health professions students and teach them the importance of interprofessional collaboration.

Methods. An existing interprofessional case study about a Hispanic man suffering from multiple chronic health conditions and the impact his health had on his family served as the basis for the film. To ensure a high-quality production, faculty members partnered with a local theatre company to produce the film. Upon completion, the film was integrated into an annual interprofessional forum and evaluated by both students and faculty members in 2016, 2017, and 2018.

Results. The 22-minute film, entitled *Meet Fred Santiago: Improving Care Through Interprofessional Collaboration*, was shown to 1921 students and 250 faculty members who participated in the interprofessional forum over the three years. Of these, 1858 students and 174 faculty members completed a program evaluation following the forum. The majority (>86%) of student and faculty respondents agreed or strongly agreed that the film presented a realistic view of the challenges faced by people with multiple chronic health problems. The majority of students (>85%) agreed or strongly agreed that the film helped them appreciate the breadth of issues confronting individuals with multiple chronic health problems.

Conclusion. The film, *Meet Fred Santiago*, is an effective tool for introducing health professions students to the complex interrelationship of medical, psychological, and social issues experienced by individuals with chronic health conditions.

Keywords: interprofessional relations, motion pictures, health occupations

INTRODUCTION

Health professions educators have increasingly used the visual arts, including digital storytelling, film, and television, to deepen students' understanding of the psychosocial needs of their patients, and to enhance students' communication skills, empathy, professionalism, self-reflection, and ethical decision-making.¹⁻³ Although written case studies are a

common pedagogical tool in health professions education, video case studies can dramatically illustrate complex issues experienced by patients and families and elicit emotional responses in students that can build empathy and enhance learning and retention.⁴⁻⁶

With this in mind, the Office of Interprofessional Education (IPE office) at the University at Buffalo was established to develop and implement high-impact interprofessional educational experiences integrated into existing curricula to promote achievement of the Interprofessional Education Collaborative (IPEC) core competencies and program accreditation requirements.⁷

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Health professions students at the University at Buffalo develop their interprofessional collaborative practice skills by progressing through three developmental levels: exposure, immersion, and competency.⁸ The exposure level provides students with an introduction to the principles of interprofessional collaborative practice. Learning activities emphasize interprofessional teamwork skills, knowledge of the scope of practice of other professions, and the impact of culture on healthcare delivery.

The Interprofessional Forum held annually at the University at Buffalo is an example of an exposure level activity. The Interprofessional Forum brings together more than 600 students from medicine, dental medicine, nursing, pharmacy, public health, social work, athletic training, physical therapy, occupational therapy, dietetics, law, and management to work in interprofessional teams. Following the interprofessional forum, students should be able to: communicate with team members from other professions about health and health care issues using understandable and respectful terminology; collaborate with other professionals to develop strategies to optimize health care; discuss roles, strengths, and limitations of diverse professionals and how they can work collaboratively to ensure optimal outcomes; and, describe the importance of teamwork and effective communication in healthcare provision. The immersion level advances the students' development of interprofessional competencies by providing educational activities in relevant small interprofessional groups. Students have opportunities to demonstrate their interprofessional knowledge and skills during activities including interprofessional simulation experiences and community-based service learning. The competency-level learning activities generally occur in the clinical setting and include continued development of interprofessional communication, teamwork, and leadership skills while working with patients and clients in interprofessional clinical teams.

To accomplish these ambitious goals in the limited amount of time allotted for the forum, the Office of Interprofessional Education decided to create a film that would present students with a dramatic, person-centered portrayal of the daily challenges of a patient with multiple, chronic health conditions; the psychosocial challenges his family encountered in caring for him; and their interactions with health professionals. We describe the process of developing the film and the results of a survey conducted to assess the film's impact and effectiveness in accomplishing the stated goals of the forum.

METHODS

In 2013, an interprofessional group of faculty members from several professional programs at the University at Buffalo developed a written patient case to

use as the foundation for an interprofessional case discussion. The patient case was developed to provide students from each of the participating health professions with the opportunity to share their expertise with the other group members by describing aspects of the case that were ideally suited for management by their profession. The initial draft of the patient case was developed by a primary care physician who based it on a mosaic of individuals he commonly saw in his practice. The patient case was then distributed to a faculty member from each of the participating professions (dental medicine, medicine, nursing, occupational therapy, pharmacy, physical therapy, public health, and social work) to add elements that provided realistic content for students in their professions to engage meaningfully in the interprofessional team discussion. Additionally, these faculty members were asked to provide a list of expected discussion points based on the information they had added to the case. The patient case, titled "Meet Fred Santiago," was piloted in two, small interprofessional learning experiences. Students' reaction to the case was overwhelming positive, stating they felt the case was realistic and pushed them to consider other aspects of the patient's physical and mental health that they might not have considered on their own. No revisions to the case were made in response to the pilot case discussions.

In 2015, the IPE office decided to develop a film that would serve as the foundation for a high quality, exposure-level IPE learning experience. Because the *Meet Fred Santiago* patient case was robust and had been piloted with students, it became the foundation for the short film. Resources for production of the film were secured from the leadership who supported the IPE office.

The Assistant Vice President for IPE identified a local not-for-profit theatre company that had a rich 25-year history of partnering with community organizations to create unique performances to address contemporary issues of social importance. Some of the topics that the company's productions has addressed were: diversity/inclusion, domestic violence, violence in schools, sexual harassment, bullying, body image/self-esteem, eating disorders, substance abuse, and the work/family balance.

The director of the theatre company met with the Assistant Vice President for IPE, two faculty members, and a clinical social worker to further discuss the patient case and the desired learning outcomes. It was important to the IPE office of that the film was patient- and family-centered and that it illustrated the challenges a person with chronic health conditions and psychosocial issues and his family experienced in their daily lives. It was also important that there was a cultural component in the film. To ensure the authenticity of the Hispanic culture represented in the film,

the director sought the advice of the local Hispanic professional actors who had been hired to be in the film as they were drafting the script. Throughout the script writing process, the Assistant Vice President for IPE and two faculty members met with the director to review the script and offer input to ensure the goals of the IPE office were being addressed in the script. When collaborating with the theatre company on the film production, the IPE office emphasized the importance of integrating the following into the film: multiple, chronic health conditions; depression; psychosocial challenges, such as a lack of transportation and limited financial resources; the cultural value of *familismo* (ie, loyalty and obligation to family); family conflict; and challenges in treatment adherence. Upon completion of the script, the Assistant Vice President for IPE and two faculty members met with the director for a reading by some of the actors and made final modifications to the script.

Following the initial discussions among the director, the Assistant Vice President for IPE, and the two faculty members, the characters were established. The main character in the film, Fred Santiago, is a 69-year-old Hispanic male who lives in a two-story home with his wife. He has four adult children: a daughter who lives nearby and is the main caregiver, a son who lives in the same town but is not involved in his parents' care, one son who lives out of town, and another son who is in the US military and deployed to Afghanistan. Mr. Santiago has multiple chronic health conditions, including type 2 diabetes with peripheral neuropathy, COPD, coronary artery disease, cerebral vascular disease, hypertension, arthritis, and obesity. He has poorly fitting dentures and, as a result, has numerous sores in his mouth. Members of his extended family have experienced similar health issues. Mr. Santiago experienced a stroke two years ago and has residual right-sided upper extremity flexor spasticity and right lower extremity weakness. Mr. Santiago no longer drives and his wife does not have a driver's license. Mr. Santiago is experiencing depression because of his progressive loss of physical function and the recent death of his brother due to cancer. Mr. Santiago has three grandchildren and several friends, including his parish priest.

The film opens with Mr. Santiago and his wife in a room in the emergency department where he was taken because of an exacerbation of his COPD. Following three days of hospitalization, he is discharged and returns home. The majority of the film takes place in the family's home, with Mr. Santiago, his wife, daughter, son, and two grandchildren. The family is preparing a birthday party for Mr. Santiago and his family and friends. Throughout the day we observe his reluctance to quit smoking, his difficulty with understanding and using his medications, his trouble eating because he has problems with cutting his food and pain from

mouth sores, his unsteady gait, and fatigue. The film portrays his strong relationship with his wife and grandchildren, the concern the wife and daughter have about his depression, the tension between the caregiving daughter and the relatively absent son regarding responsibilities for the care of their father, and his sadness over his inability to salsa dance competitively, which was something he and his wife had done together when he was younger. The film closes with Mr. Santiago and his wife at a follow up visit with his family physician. The physician tells him about the interprofessional team that he works with and asks if he would be interested in meeting with some of them. This scene serves as the segue to the interprofessional team discussion the students will engage in after viewing the film.

During rehearsal and filming sessions, the Assistant Vice President of IPE and two faculty members were invited to observe and contributed as appropriate. The final film was 22 minutes in length and required approximately 18 months to complete from concept to final acceptance. To facilitate the interprofessional team discussion that would take place after viewing the film, still frames of pivotal moments in the film were captured as digital images that could be printed.

In spring 2017, the film was used for the first time during the interprofessional forum titled, *Meet Fred Santiago: Improving Care through Interprofessional Collaboration*. To prepare for the forum, students were asked to complete two online modules entitled, "What is Interprofessional Collaboration and Why is it Important?" and "Roles and Responsibilities." These modules were developed internally and were components of a six-part online module series entitled, "Foundations of Interprofessional Collaborative Practice." This module series provided students an easily accessible method to develop foundational knowledge essential for subsequent in-person interprofessional experiences. The modules were based on the IPEC Core Competencies for Interprofessional Collaborative Practice and principles of cultural engagement.⁷

For the interprofessional forum, each participating health professions program sent cohorts of students who were at similar stages in their program (ie, students with some professional awareness and clinical experience). On the day of the forum, students gathered in a large lecture hall to view the film. Students were asked to view the film through a "professional lens" and identify aspects of Mr. Santiago's health that they felt their profession could optimize. Students viewed the film and were then dispersed into their pre-assigned, faculty-facilitated small discussion groups. For the small group discussion segment of the program (approximately 35 groups met in each of three sessions), students were assigned to small, interprofessional teams of six to seven students (with no

more than two students from any one profession). The small group discussions, each facilitated by a faculty member, began with students introducing themselves and engaging in a discussion of the unique and common aspects of the health professions represented in the group. Students then transitioned to a discussion of the problems each student identified Mr. Santiago was experiencing and the management strategies their profession could contribute. The group then collaborated to develop a care plan.

Prior to the forum, the IPE office provided faculty facilitators with a link to view the film and a training video on facilitating interprofessional small group discussions. All facilitators received printed guidelines and recommendations, a link to a brief online training video, and an invitation to attend a Just-in-Time training session conducted by two faculty members 30 minutes before the forum.

After participating in the forum, students and faculty members completed an evaluation of the program. Students and faculty members were asked to rate their level of agreement on a scale of strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree. The student program evaluation consisted of 15 items, of which two related to the *Meet Fred Santiago* film. Students were also given the opportunity to provide comments about the film at the end of the evaluation. The faculty program evaluation consisted of nine items (2017) or 12 items (2018, 2019), with one item related to the film.

RESULTS

A total of 1921 students representing as many as 12 health professions programs participated in the forum from 2017-2019 (Table 1). Of these, 1858 (>95%)

students completed the program evaluation. Data from the student program evaluation related to the *Meet Fred Santiago* film are summarized in Table 2. The results of the program evaluation were consistent over the three years of the forum, with student respondents agreeing or strongly agreeing that the film presented a realistic view of the challenges faced by people with multiple chronic health problems (87% to 90%) and helped them appreciate the breadth of issues confronting individuals with multiple chronic health problems (86% to 90%).

A total of 673 (36%) student respondents left comments in the program evaluation from 2017-2019. Of these comments, 98 (15%) were related to the film. Manual review of the comments related to the film revealed three major themes: the film was authentic and enjoyable (16 comments [16%]), respondents desired more information about the case (30 comments [30%]), and the dental medicine component was not sufficiently robust (25 comments [25%]).

A total of 72, 91, and 87 faculty members participated in the forum in spring 2017, 2018, and 2019, respectively, with many of the faculty members participating in more than one year. Of these, 46 (64%), 67 (74%), and 61 (70%) completed the program evaluation. Data from the faculty program evaluation related to the *Meet Fred Santiago* film are summarized in Table 3. Over the three years, the program evaluations revealed that faculty respondents agreed or strongly agreed that the film effectively introduced health professions students to the complex interrelationship of medical, psychological, and social issues experienced by people with chronic health conditions (the mean score for each year ranged from 96% to 100%).

Table 1. Health Professions Students Attending an Interprofessional Forum in Which They Viewed a Film^a Created to Illustrate the Patient Experience of Dealing With Chronic Health Conditions

	Year of Interprofessional Forum			Three-Year Total
	2017	2018	2019	
Programs				
Athletic Training	0	0	5	5
Dental Medicine	106	112	117	335
Dietetics	0	20	20	40
Law	6	12	11	29
Management	5	29	37	71
Medicine	135	145	151	431
Nursing	120	70	65	255
Occupational Therapy	1	78	46	125
Pharmacy	122	136	118	376
Physical Therapy	44	41	44	129
Public Health	3	4	18	25
Social Work	46	23	31	100
Totals	588	670	663	1921

^a Meet Fred Santiago

Table 2. Health Professions Students' Evaluation of a Film Created to Illustrate the Patient Experience of Dealing With Chronic Health Conditions

Survey Item	Agree or Strongly Agree, %		
	Spring 2017 (N=561)	Spring 2018 (N=642)	Spring 2019 (N=655)
Please evaluate the quality of the <i>Meet Fred Santiago</i> film:			
The film presented a realistic view of the challenges faced by people with multiple chronic problems.	90	89	87
The film helped me appreciate the breadth of issues confronting individuals with multiple chronic problems.	90	89	86

DISCUSSION

Dramatic portrayals have the ability to bring to life the complex issues experienced by patients and families dealing with chronic illnesses in a way that may not be achieved by simply reading a written case study. The film, *Meet Fred Santiago*, allows students to see Mr. Santiago in his home environment, to appreciate his Hispanic culture, to experience his family's interpersonal relationships, and to observe how his common chronic physical and mental health conditions (eg, diabetes, hypertension, arthritis, and depression) impact the daily lives of all of his family members. These elements of Mr. Santiago's life could not be showcased as vividly using a written patient case.

Students of health professions programs usually encounter patients in settings outside of their home environment, such as in a hospital or clinic. It is not often that they have the opportunity to witness the impact that chronic health conditions have on the daily lives of an individual and his family. Mr. Santiago was not only portrayed as a patient, but also as a husband, brother, father, and grandfather. This holistic portrayal of Mr. Santiago not only made him more relatable, but also revealed many important influencers in his life that were affecting his health. Finally, the screenplay of the film was written in such a way as to reflect an individual that students might encounter locally (ie, in the Buffalo

community) as part of their experiential education. As part of the Interprofessional Forum, *Meet Fred Santiago: Improving Care through Interprofessional Collaboration*, the film was integral to educating future health care professionals to improve health care delivery through collaboration. Based on the program evaluations, both students and faculty members rated the film highly and review of student comments supported these data.

Interestingly, the most common theme that emerged in the students' comments was their desire for more information about the case. In their small groups, students were provided with a one-page summary of Mr. Santiago's relevant past medical and social history, including his chronic medical conditions and the medications used to treat those conditions. In their own discipline-specific curricula, students may have been used to receiving, or having access to, more detailed information when discussing a patient case. As an exposure-level activity within our IPE framework, the forum is intended to provide students with an introduction to the principles of interprofessional collaborative practice. The goal is not for students to develop a comprehensive plan of care, but rather to begin to develop interprofessional teamwork skills, understand the scope of practice of other professions, and understand the impact of culture on healthcare delivery. At the beginning

Table 3. Health Professions Faculty Members' Evaluation of a Film Created to Illustrate the Patient Experience of Dealing With Chronic Health Conditions

Item	Agree or Strongly Agree, %		
	Spring 2017 (N=46)	Spring 2018 (N=67)	Spring 2019 (N=61)
The film, <i>Meet Fred Santiago</i> , effectively introduced health professions students to the complex interrelationship of medical, psychological, and social issues experienced by people with chronic health conditions.	100	98	96

of the forum, students are provided with an overview and expectations of the session but it is also the responsibility of the faculty facilitator to reinforce the objectives of the forum during the small group activity.

Another theme that emerged from the student comments was that the dental medicine component was insufficiently robust. Dental medicine faculty members contributed to the creation of the case and affirmed that the case included several important elements of oral health care that could be addressed by dental medicine students.

The film has not only had a positive impact on student education, it has also influenced many that were involved in its creation. For the spring 2017 forum, the IPE office invited the actors to attend the event and to stop by some of the small discussion groups to answer any questions the students might have. Interestingly, one of the main questions asked of the actors was how the film impacted them. The actor who played Fred Santiago shared that he had lost 35 pounds after learning about all of the health problems that Fred experienced that were associated with being overweight. The actress that portrayed Fred's daughter also shared that she was impressed with the interprofessional team, as she was unaware of the roles and accessibility of non-physician health care providers.

At the time we decided to develop and produce our film, available IPE-related films were very provider-centered, often depicting the patient in the healthcare setting with individual practitioners informing the patient about their care plan. The partnership between the IPE office and the community theatre allowed for the development of a high-quality short film that immersed students in the lives of the Santiago family. Our film allowed the health professions students to vividly see Mr. Santiago in his own home environment interacting with his family and experiencing daily challenges, which brought the story to life. Another innovation is that the film challenges health professions students to watch the film and identify and share with their group how their profession could contribute to Mr. Santiago's care. This multi-faceted view of Mr. Santiago encourages students to recognize the importance of a collaborative approach to optimize a patient's quality of life. These innovations set the stage for robust discussions about collaborative care and teamwork at the patient, population, and systems levels.

We learned several lessons throughout the process of transforming the written patient case into a film. First, it was critical to have the support of the leadership within the institution. This was required to financially support the project and to recognize the time that faculty and/or staff members would need to invest to see the

project through. Second, partnering with an organization that was collaborative and whose mission aligned with the overall goals of the program was essential. The IPE office relied on the theatre company's input and suggestions on how best to achieve our goals. The theatre company's experience and passion for using the arts to educate helped to make the project a success. Third, the process from script creation to final cut can be lengthy. For example, approximately 18 months elapsed between the initial concept discussions with leadership to final approval of the film. For health professions education programs interested in tackling a similar production, it will be important to consider when and how the end product (ie, the film) will be incorporated into the curriculum. Finally, in order to use the end product effectively, an entire learning experience needs to be developed and packaged and faculty members responsible for executing the experience need to be adequately trained. This will help to ensure that the end product will have the highest possible impact on learning.

Moving forward, the IPE office plans to continue to offer the Interprofessional Forum and show the film, *Meet Fred Santiago*, annually each spring. The focus of the office is to continue to evaluate the quality of the forum to ensure it is meeting the IPE needs of the university's participating health professions programs. Additionally, the office continues to expand the number and variety of IPE activities that build on the principles emphasized in the forum through the film.

CONCLUSION

The film *Meet Fred Santiago: Improving Care Through Interprofessional Collaboration* has played a critical role in building the foundational knowledge, skills, and attitudes in health professions students needed for them to grow into effective interprofessional collaborators. The film brings to life the human side of chronic physical and mental health conditions. The film has been a positive addition to the IPE curriculum at the University at Buffalo and has been positively rated by both students and faculty members for its realism and its effectiveness in introducing health professions students to the complex interrelationship of physical, psychological, and social issues experienced by people with chronic health conditions.

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