



INTERPROFESSIONAL EDUCATION

AT TWO ADVENTIST UNIVERSITIES

In 1999, the Institute of Medicine (IOM) published a landmark report on the quality of health care in America, which shocked the nation when it revealed that more than 98,000 patients die each year as a result of medical error.¹ A follow-up report, “Crossing the Quality Chasm,” discussed the problem that educating health-care students in the isolation of the various “silos” (insular functioning that discourages reciprocity and communication across disciplines) of their professions contributes to quality-care concerns, and outlined steps to address the issues raised, which included the need to focus on evidence-based practice and interdisciplinary training.² In addition, the World Health Organization (WHO) in 2010 issued a report, “Framework for Action on Interprofessional Education and Collaborative Practice,” with the goal of providing guidance to key elements of interprofessional education (IPE) and collaborative practice.³ Just one year later, the Interprofessional Education Collaborative (IPEC) identified Core Competencies for interprofessional collaborative practice.⁴

In 2012, the Institute of Medicine’s Global Forum on Innovation in Health Professional Education was formed (now known as the National Academies of Sciences Engineering and Medicine’s Global Forum on Innovation in Health Professional Education). Along with the Robert Wood Johnson Foundation, it developed reports on the importance of educational entities working together in partnerships to educate health-care students on the importance of teamwork, collaboration, and dia-

logue. The Josiah Macy Jr. Foundation has taken an active role in funding research on interprofessional education by providing grant funding while disseminating information regarding best practice in IPE for practitioner use including curriculum, modules, and professional development.⁵

The international community has clearly identified and affirmed IPE as a foundation for effective health-care education, yet many challenges remain. Health-care education still predominantly occurs in silos, with little day-to-day critical thinking and problem-solving across professional boundaries, further complicated by each profession having its own language.⁶ Other challenges include the cost of funding such education, having a faculty trained in IPE skill sets and procedures, providing adequate time and resources for IPE training for students, and the problem of collaborating amid varying academic schedules and calendars.⁷ Finally, finding validated, reliable assessment measures of IPE has also been a concern.⁸

In spite of these challenges, certain factors can facilitate IPE in health-care education such as having faculty champions who become catalysts for positive change, institutional support, shared interprofessional vision, and faculty-development programs.⁹ Some universities have sent teams of interprofessional faculty to IPEC conferences to begin or further develop their IPE plans, and gain insight and support from seasoned professionals. Adopting a foundation of equality, willingness to listen to others, and a commitment to minimize

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turf battles are also key contributors to IPE success.¹⁰ Encouraging faculty to co-teach with other colleagues in clinical settings, modeling by colleagues with experience in the field, and being flexible when faced with challenges are also important.¹¹ Another avenue to enhance interprofessional education curriculum is for various accrediting bodies to develop standards that target IPE skills, values, and competencies.¹²

IPE and collaborative practice have been an area of inquiry for more than 40 years, yet further research is needed to examine the effect of IPE and collaborative practice on health-specific outcomes.¹³ The WHO Framework for Action on Interprofessional Education and Collaborative Practice Framework¹⁴ outlined a process that starts with having health and education systems examine the context of local health needs, then developing quality IPE programs that will train health-care workers to implement collaborative practices. The result will be collaborative practice by health-care professionals, a strengthened health-care system, and improved health outcomes.¹⁵

Adventist universities and health-care centers are moving forward in promoting interprofessional education and collaboration among their university partners. IPE is necessary to equip future health-care professionals with skills such as communication, joint problem-solving, and teamwork to optimize patient safety and enable quality service in ever-changing health-care systems worldwide.

Interprofessional Education Experiences at Loma Linda University (LLU)

Shortly after the Medical Simulation Center opened at LLU Centennial Complex in 2010, a PhD in nursing student, Janice Palaganas, partnered with medical-simulation staff and representatives from other disciplines to explore health-care simulation. This platform provided a foundation for IPE to compare the effectiveness of high- and low-technology simulation and also provided students from different health-care backgrounds the opportunity to apply collaborative communication skills and participate in group problem-solving tasks.¹⁶

In working with students from a variety of health-care programs, the team found that high-technology approaches were more effective than non-simulated, low-technology modalities. For example, high-technology simulations provided students with immediate feedback on patients' vital signs (as well as other forms of data), and allowed them to make decisions, thus mirroring a real-world context. Today, LLU continues this effort through the Interprofessional learning (IPL) experience, which is open to all of the university's schools.

Students from the schools of nursing, medicine, phar-

macy, allied health (departments of radiology technology and physician's assistant), public health, dentistry (dentistry and dental hygiene), and behavioral health (child-life department) participate in IPL. All of the participating students complete the Readiness for Interprofessional Learning Scale (RIPLS) survey¹⁷ prior to and after their IPL experience.

During the four-hour IPL session, groups of eight to nine students from three to five different LLU schools rotate through three stations at the university's Medical Simulation Center. Before starting the activities at each of the three rotations, the students engage in a 20-minute learning experience designed to prepare them to use TeamSTEPPS® communication strategies¹⁸ as they encounter, problem-solve, and intervene in a variety of patient scenarios. In two of the rotations, students are able to take advantage of the simulation



Students from Loma Linda University's Schools of Nursing, Pharmacy, Allied Health, and Medicine work together to respond to a patient emergency during interprofessional experiences at Loma Linda University's Medical Simulation Center.

patient suites with high-fidelity manikins. During their "immersive" rotation, students are able to observe and intervene as they experience a simulated patient emergency.

A second rotation is designed to expose the students to a variety of commonly encountered patient and staff issues requiring optimal team communication and problem-solving. In each of these rotations, students are able to debrief following the learning experience, ask questions, and practice and review key concepts.

In the third rotation, students review case studies of an acute-care situation and the accompanying long-term or community-based follow-up. The scenarios were developed to stimulate participation from all the disciplines involved as students discuss assessments, key interventions, referrals, and concerns that each of the professions would address. A guided one-to-one interview also occurs during this "scope of practice" rotation, which promotes sharing, understanding, and communication amongst the student participants.

Each fall, LLU's School of Allied Health coordinates a half-day interprofessional workshop that involves all the departments preparing allied-health professionals (cardiopulmonary sciences, clinical lab sciences, communication sciences and disorders, health informatics and information management, occupational therapy, orthotics and prosthetics, physical therapy, and radiation technology). Prior to the workshop, the students study a case scenario so they are prepared to share their profession's scope of practice and clinical context.

During the 80-minute rotations, the students from the various departments interact to provide collaborative, whole-person care. Before the experience ends, the students receive a presentation from participants who were involved in the real-life case the students had been studying throughout the session. The culminating debriefing allows participants to reflect on how collaboration facilitated quality patient care as they discuss how to preserve life and maximize function.

Critical Event Response Lab

Each spring quarter, students from the schools of medicine, pharmacy, nursing, dentistry, and the emergency medical care department within the School of Allied Health participate in a half-day "Critical Event Response Lab," which is designed to prepare health-care professionals from various backgrounds to work collaboratively when faced with various disasters or multi-casualty situations. Prior to attending an assigned half-day lab, students complete a multi-module, online interactive course covering topics such as basics of disaster medicine, disaster triage, public-health response to disasters, TeamSTEPPS® communication strategies and mental-health concepts of disaster, along with specialty modules designed for each school. They also complete pre-assessments prior to attending the onsite course and, with participants from the various schools, rotate through five stations—a triage station, decontamination simulation, and three scenarios in the LLU's interprofessional Medical Simulation Center suites where they encounter various disaster scenarios requiring teamwork, communication, and effective interprofessional intervention. Following each experience, the students are given an opportunity for debriefing and reflection.

At the conclusion of the Critical Event Response Lab, the students take post-surveys to assess their understanding of teamwork, communication procedures across health-care disciplines, and the relationship between the context of their scope of practice and problem-solving in real-world contexts.

Survey results showed that statistically significant growth occurred in students' ability to work in and contribute to teams and to facilitate communication. In addition, student comments from the survey showed that they developed more positive perceptions regarding team communication and management.¹⁹ Throughout the IPL experience, students reported that their own perceptions of positive interdisciplinary experiences were strengthened as they were able to learn from the expertise of other disciplines.

Additional Lab Experiences

In addition to these events, schools within LLU are working to provide opportunities and broader contexts in which interdisciplinary experiences can occur. For example, the schools of dentistry and pharmacy have created opportunities for students and professors to collaborate on case studies in order to provide a context in which students can apply their learning. This process encourages students to reflect on how the attitudes, communication styles, and skill sets inherent to their discipline contribute to collaboration and better patient care.

The LLU School of Nursing has created an Ethical Dilemma Lab where groups of seven to nine nursing and pharmacy students partner to interview a "family" struggling with an ethical issue. Prior to the lab, each participant is assigned a role, sent a scenario overview, and given journal articles to review. After their preparation, each team conducts a 20-minute interview with actors portraying a family to provide guidance and support, and aid in problem-solving. These interactions are videotaped and reviewed prior to debriefing and reflection. Teams discuss their effectiveness in guiding the ethical conversation, showing empathy, providing evidence-based information, and increasing their level of professionalism.

LLU's Center for Interprofessional Education Research (CIPER) team has also begun to develop frameworks and methodologies to guide interprofessional work, conduct research, and inform future IPL opportunities. This team, under the guidance of Christiane Schubert, PhD, involves professionals from the schools of medicine, dentistry, nursing, and pharmacy, as well as representatives from Loma Linda's Veterans Administration Hospital. This work is designed to promote foundational research in clinical settings in order to examine ways that interdisciplinary professionals can collaborate to achieve optimum outcomes for patients.²⁰ By guiding work in these areas, the team hopes to encourage a higher quality of whole-person care, ensure better patient outcomes, and contribute to a more resilient health-care system.

Interdisciplinary Learning at Universidad Peruana Union (UPeU)

Interdisciplinary learning began at UPeU in 2012 with a three-year project titled: "Responsible Parents, Healthy Children," which focused on early stimulation and healthy nutrition of children from birth to 5 years of age who lived in a community close to UPeU. The project involved the nursing, psychology, nutrition, and theology departments. Together, administrators and faculty developed a six-point action plan to decrease infant morbidity/mortality and improve the quality of life for the local children:

1. Increase the level of parental knowledge and attitudes so that they can provide early stimulation to their children from birth to age 5.
2. Teach parents about the principles of nutrition and how to prepare healthful and appetizing foods for their children from birth to age 5.
3. Help ensure that parents bring their young children

(from birth to age 5) to well-baby clinics and healthy child checks as established by the country's Ministry of Health.

4. Enrich the affective interactions between couples to improve relationships among family members.

5. Improve mothers' and fathers' implementation of healthful lifestyle habits in personal hygiene and cleanliness in their living areas.

6. Establish a Community Center for Early Stimulation.

A team of faculty members from the participating departments mentioned above developed an action plan based on the project's objectives and the desired learning outcomes for each participating department. Nursing, psychology, and nutrition students collaborated on the project and jointly conducted home visits and educational programs. Similarly, psychology and theology students worked together to enhance marital relationships in their clients.

This collaborative work experience generated a shared inter-professional vision among the faculty and administrators of the participating departments, which offered improved outcomes in the health care of individuals and families in the community.

The following year (2013), the School of Health Sciences, with the participation of the nursing, psychology, and human nutrition faculties, implemented the following project: "Healthy Girls and Boys for a Secure Future" in several communities. This second joint project reaffirmed the need for a coordinated interdisciplinary plan of action in the community because previously, students in each of these departments had conducted their community practice independently. This led to duplication of effort and cost, and frequently did not produce the desired outcomes in the community. For this reason, since 2013, the School of Health Sciences has implemented an Interdisciplinary Community Internship for its nursing, human nutrition, and psychology programs. The faculty responsible for the community internship meet at pre-determined times to develop a joint work plan that takes into account the desired competencies and learning outcomes, and course content, and to arrange for a needs assessment of the community.

During the first week of the practicum, the students participate in an induction and orientation program. Next, they conduct a community needs assessment. Then, together

with community leaders and administrators, as well as local representatives from the Ministry of Health, a multidisciplinary team develops an action plan. The team, in coordination with faculty from the participating disciplines, plan the students' clinical practice according to the competencies they want the students to acquire. This experience with interdisciplinary learning has enriched and increased the capability of students, faculty, and administrators.

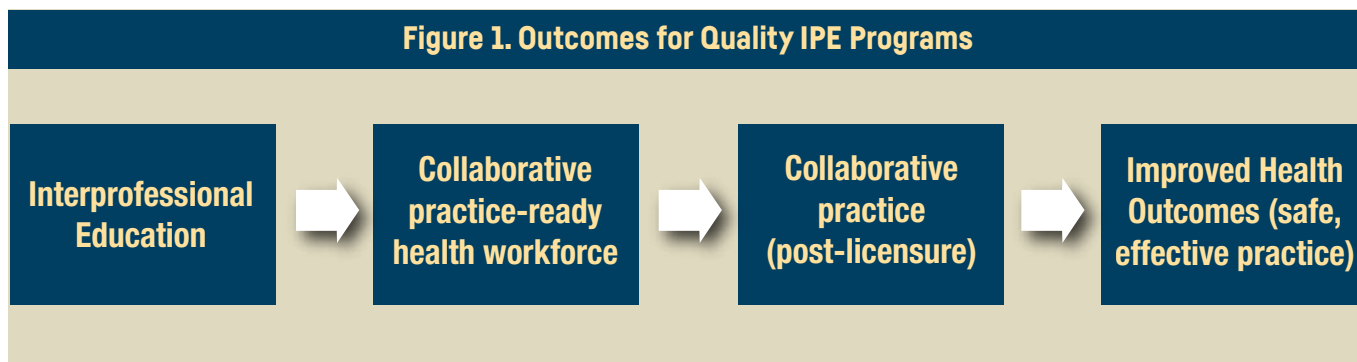
Students learn teamwork; acquire/develop skills related to negotiation and conflict resolution; learn assertive communication; and learn respect and tolerance for others' opinions. They also develop leadership skills as they coordinate with institutional leaders and community-center personnel within the municipality; acquire knowledge regarding the roles of the other professions participating in the project; and prepare for their year of government-required social service upon completion of their degree.

Faculty acquire expertise in curriculum development and revision and identify courses or content that will enable students to develop the necessary competencies to engage successfully in interdisciplinary work. They also identify methodologies and strategies to address community and interdisciplinary practice, learn terminology unique to each of the professions involved, and build competency in areas of concentration. Above all, they learn to role-model teamwork and develop practice guidelines.

As a result of this experience, UPeU is expanding student-intervention scenarios. For example, the school has established a strategic alliance with some of the hospitals and clinics throughout the country to work on a project called "Total Health" in which nursing, nutrition, and psychology students will participate, and as of 2018, medical students as well.

Even though the value and outcomes of interdisciplinary learning are positive and promising, a variety of barriers and challenges such as scheduling must be overcome. However, great benefits could be achieved from the following collaborations: integration of medical and nursing students into acute-care situations; engaging nursing, medical, and psychology students in emergency situations and disasters; and teaching nursing and psychology students to collaborate in managing adolescent pregnancies. The areas of health care where interdisciplinary practice would increase the benefit to the client,

Figure 1. Outcomes for Quality IPE Programs



community, and society, while at the same time increasing career satisfaction for the health professional, are many.

These illustrations show how Loma Linda University and Universidad Peruana Unión are creating opportunities for student interaction across disciplines to mobilize energy and facilitate collaboration on various health issues. These opportunities help students to acquire and develop effective communication skills, teamwork, collaborative problem solving, and reflective insights to navigate through ethical challenges. In addition, these interdisciplinary experiences enable students to broaden their skillsets as they collaborate with fellow clinicians to improve and implement patient care. The simulated and real-world projects modeled by these two schools provide a greater insight into ways that university departments can collaborate to prepare an interdisciplinary workforce with the diverse strengths and expertise to ensure a more responsive and effective health-care systems. ✍

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