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REVIEW ARTICLE

Interprofessional Education and Obstetric Ultrasound

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ABSTRACT

The transformation of healthcare relies on interprofessional education (IPE). Reviewing the history of the movement to prevent medical errors through the call for collaborative high functioning team practice, an assessment of the need to recognize the importance of interprofessional collaboration among sonographers, various medical specialties and nursing is addressed. A brief discussion of model programs in IPE is included.

Keywords: Interprofessional education, Obstetric ultrasonography, Collaborative practice, Medical error prevention, Interdisciplinary collaboration, Teamwork.

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"We have good evidence that healthcare delivered in teams is more efficient and more effective, yet we continue to educate our health professionals in silos. To meet the public's needs, health professions educators must teach and model collaborative practice and team-based models of care. While some health professions schools are making these changes, it's not happening fast enough or broadly enough. By putting forward these core competencies, we hope to accelerate efforts to transform health professions education in the United States."

—George E Thibault, MD
President Josiah Macy Jr Foundation

INTRODUCTION

At its simplest, the World Health Organization (WHO) defines interprofessional education (IPE) is an action that 'occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes'.[1]

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The key driver promoting interprofessional education is an international movement to improve the safety and quality of healthcare with a strategy that accounts for ever increasing complexity in the information and technology associated with medical care.

There tends to be some confusion as to what comprises an interprofessional relationship. Do members of different allopathic disciplines working together comprise an interprofessional relationship? Technically, the answer is no. Although principles of IPE can certainly apply to interspecialty relationships, the term itself had a different intent. For example, the relationship between an obstetric resident and a sonographer performing an anatomy ultrasound would comprise an interprofessional relationship, while a relationship between a radiologist and the same resident would not be an interprofessional relationship. Each health profession maintains its own unique identity and investment in what it does that is special. Thus interprofessionality does not replace this but becomes an added component of professional identity. It is one important innovation that interacts with other educational innovations designed to improve health professions education, while ultimately improving the health of the public.[2]

Further clarification was provided in June 2013 when the Liaison Committee for Medical Education (LCME) and the Committee on the Accreditation of Canadian Medical Schools (CACMS) jointly released new interprofessional educational standards for medical schools seeking accreditation in the future. These directives (ED 19 and 19A) are rooted in promoting safety through clear communication and good relationships with patients and their families, colleagues, and other health professionals. The new standards require specific instruction in communication skills with explicit preparation for functioning collaboratively on healthcare teams. Additionally, the LCME and CACMS broadened the earlier WHO definition by including not only students of other health professions but also fully trained practitioners.[3,4] Interprofessionality in health professions education is not exclusive to undergraduate medical education but now includes ramifications for graduate and continuing medical education as well. It is expected that broadening the definition will positively impact other IPE initiatives within all health professions.

The history of the role of interprofessional teamwork in the transformation of healthcare lies in response to

compromises in the quality of healthcare that began to surface in the 1990's. In 1994, Lucien Leape estimated in the landmark article "Error in Medicine" that medical errors in the US occurred at a rate equivalent to the crashing of three jumbo jets every other day.[5] He made a case for systems issues as the source of error because the ever increasing volume of advances in the health sciences paired with the spiraling complexities of technology were beyond the control of a single individual delivering healthcare. His work drew national attention to the crisis of quality within the healthcare industry. In 1999, The Institute of Medicine (IOM) released 'To Err is Human', which confirmed the sad reality that American hospitals do indeed injure hundreds of thousands and kill at least 48,000 people each year due to preventable medical errors. Furthermore the report outlines that many of these deaths are attributable to communication and systems-based problems and not to isolated actions of poorly performing individuals. The report identified decentralization and fragmentation of the healthcare system as significant causative concerns.[6] The traditional healthcare delivery model was deemed culpable. At question is a process where an autonomous physician makes all medical decisions in isolation giving orders to other health professionals who then officially interface in patient care only as directed. The effects of a top-down medical care paradigm rooted in the 20th century were further compounded by disciplinary silos that concomitantly developed among the health professions. When technology, information explosion and fast-paced change were added to the mix, it created the recipe for disaster outlined in the report.

One barrier to improvement of quality is looking for a single faulty individual to bear the blame. In 2001, in 'Crossing the Quality Chasm', the IOM recognized that although the healthcare system is comprised of highly dedicated professionals trying to do a good job, those individuals were working within a system that does not adequately prepare them or support them once they are in practice, to achieve the best for their patients.[7] The seeds were sown for a revolution in health professions practice. The battle cry was for the quality aims of safety, effectiveness, patient-centeredness, timeliness, efficiency and equity.

Two years later in 2003, the IOM recognized that the changes required to create optimal quality healthcare delivery could only be addressed through transformation in health professions education. 'Health Professions Education a Bridge to Quality' provided such a call to action. 'All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches and informatics'.[8] Bold but realistic, the report emphasized a stepwise approach that called initially for adoption of common language and core competencies across health professions. A fundamental challenge for this new paradigm was to address and nullify a hidden curriculum in health professions student training environments. Observed behavior, accepted norms and the experiential learning accrued during interactions in the clinical setting powerfully impact the values and attitudes of future health professionals from their earliest stages of training. Issues such as the impact of hierarchy, disrespect, poor communication, failure to appreciate the roles and training of other health professions often contradict what is taught in the classroom.[9] Deliberate interprofessional collaboration among educators leading to positive interprofessional experiences for students requires institutional commitment and the resources of time, money and creativity.[2]

Interprofessional education is designed to foster skills that should lead to the development of accountable healthcare teams. High performing teams are hypothesized to improve quality of care. In order to effectively provide error free care, each team member needs to understand the task and goal of the team, who else is on the team, why certain members are selected to be on the team, what the role of each team member is, and how the members' roles fit together to accomplish the desired goal.[10] TeamSTEPPS is an evidence-based initiative launched in 2003 in support the proposed restructuring of healthcare. It lends itself well to health professions team-based education at all levels. The result of 3 years collaboration between the Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense, TeamSTEPPS was released for general use in late 2006. The four key principles of TeamSTEPPS include leadership, situation monitoring, communication and mutual support. Infused with interprofessionality, leadership within the in TeamSTEPPS model is variable. It changes in response to the expertize and experience of team members depending on the specific situation. Much has been written since 2006 regarding the function and individual outcomes with respect to these high-performing teams. They function effectively by accentuating nonhierarchical, thoughtful collaboration enriched by clear communication centering on patient care directed toward safe outcomes.[11] Admittedly support that these systems significantly improve quality outcomes is still being gathered.

In June 2009, after a competitive selection process, seven health science centers were invited by the Josiah Macy Foundation in conjunction with The Carnegie Foundation for the Advancement of Teaching to participate in a conference to advance new models for inter-professional education within the nation's academic health centers. Those chosen to participate include: Pennsylvania State University, University of Colorado, University of New Mexico,

University of Minnesota, Vanderbilt University Duke and New York University. Seven programs are described in the report entitled 'Educating Nurses and Physicians: Toward New Horizons Advancing Inter-professional Education in Academic Health Centers'.[12] Common themes identified across institutions included: determining optimal timing and content for inter-professional education, overcoming logistical barriers, and carrying inter-professional education into clinical education experiences. In addition, there is the dilemma of identity formation whereby specific professional identity is supported alongside team identity.

This was followed soon thereafter in May 2011, by the report 'Team-Based Competencies, Building a Shared Foundation for Education and Clinical Practice'. This was a collaborative project stemming from a conference convened by Interprofessional Education Collaborative (IPEC) in conjunction with Health Resources and Services Administration (HRSA). Over 75 leaders assessed the core competencies and weighed in on action strategies designed to foster implementation of interprofessional health education on a larger scale. The action strategies identified were designed to communicate, disseminate, provide faculty development and develop metrics for IPE and collaborative care competencies.[13]

Three years in the making, IPEC released the report 'Core Competencies for Interprofessional Collaborative Practice' in 2012. This report identified four domains of core competencies required to deliver integrated, high-quality care to patients in the context of the currently evolving healthcare system in the US. Those core IPE competencies include: values and ethics for interprofessional practice; roles and responsibilities for collaborative practice; interprofessional communication; and interprofessional teamwork and team-based care.[14]

INSTITUTIONAL EXAMPLES OF INTERPROFESSIONAL EDUCATION

There are a number of successful and emerging institutional examples of approaches to interprofessional health education. The University of Washington has in Institute for Simulation and Interprofessional Studies which maintains a focus on simulation and the development of cases and resources to promote IPE. The University of Florida Health Science created an Office of Interprofessional Education with a dean that chairs a committee comprised of the education deans from the six HSC colleges and an educational technology expert. UCSF created a Center for Innovation in Interprofessional Health while undertaking the development of a Center for Excellence. All three institutions have been recognized as leaders in IPE.

At Texas Tech University Health Science Center, an interprofessional team of faculty representing all health professions training at the university from all geographically distant campuses participated in a yearlong process that resulted in the implementation of an introduction to interprofessional education in the 2013 to 2014 academic year. All entering students now complete an on-line training developed as an introduction to IPE. This effort includes all undergraduate, graduate and professional schools. As a corollary to the introduction, students will then participate in an interprofessional project.

INTERPROFESSIONAL EDUCATION IN OBSTETRIC ULTRASOUND

At this time, the list of health professions included in the interprofessional education movement is still expanding. In Creating a Curriculum for Training Health Profession Faculty Leaders in 2005 faculty from 14 diverse health professions were identified including laboratory, but sonography or any type of imaging was not included.[15] The Interprofessional Education Collaborative (IPEC) is currently comprised of the national health professions educational organizations in Nursing (AACN), Osteopathic Medicine (AACOM), Public Health (ASPH), Pharmacy(AACP), Dentistry (ADEA) and Allopathic Medicine (AAMC).

In performing a review of the literature using a PubMed database search where interprofessional resident or medical student was combined with obstetric and variations of the word sonographer and interprofessional education , only one article was identified that included sonography education in an interprofessional context. In that article, experienced sonographers were used to help train obstetrics and gynecology residents.[16] In fact, one article outlining programmatic training in ultrasound for obstetrics and gynecology residents provided detailed lists of skills but did not delineate who teaches or administers assessments.[17] Most obstetrics and gynecology residencies rely on sonographers to conduct the basic training in practice that occurs. This is an area that has the potential for research in interprofessionalism.

Evolving standards for performance of obstetric ultrasound in emergency medicine, family medicine, certified nurse midwifery and other advanced practice nurses, physicians assistants and registered nursing create even more opportunities for collaborative practice and IPE. When sonographers have been queried regarding challenges in their jobs, they frequently identify lack of understanding of their skill set and hierarchy as contributing to decreases in job satisfaction. By becoming active in

interprofessional education efforts while practicing in teams might help improve patient care while increasing job satisfaction for sonographers. It would also help promote a better understanding of the roles and responsibilities of sonographers for nurses and other healthcare professions that do not typically view themselves as part of the team that delivers this element of patient care.

Sonographers in obstetrics and gynecology are important team members who work closely with gynecologists and obstetricians who must sign off on their work. They are front-line in the communication that occur during an ultrasound session. Their skills in performing ultrasounds often surpass the physicians who supervise them and rely on them to identify and take images that help discriminate between normal and abnormal. Unless the physician is holding the probe, he/she must rely on the images that the sonographer has taken and similarly depends on accuracy.

CONCLUSION

It is possible to assess the advancement of collaborative practice and interprofessional education efforts by how successfully and consistently interprofessional teams perform. Answers to these and similar questions provide a gauge: have we been successful in providing a basis for continuous, customized healing relationships where patient maintain a locus of control while transparency and flow of information exist? How frequently does evidence-based care take place in anticipation of patient needs, rather than reaction to events in an atmosphere where clinicians and institutions actively collaborate and communicate to ensure coordination of care?

Are all team members able to present and defend his/her own opinion within the team; collaboratively analyze complex patient situations to determine a plan of care or intervention; comfortably provide feedback regarding opinions and the behaviors of other team members; successfully work through conflicts including differences in opinion; and plan care activities with an understanding of the roles of others?[18,19]

There are more professions that should have a space at the table. Interspecialty as well as interprofessional collaboration can still be improved. Even more institutional commitment including temporal and financial support will be required in the evolution of this new paradigm. The path may be devilishly complex but the stakes are high and failure to improve quality and safety is not an option. Healthcare professionals are creative, resilient and capable to move forward as the industry and health professions education are now on the verge of building a bridge to cross the quality chasm.

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