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Paul George

Celia P. MacDonnell
University of Rhode Island, cmac@uri.edu

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Authors

Paul George, Celia P. MacDonnell, Jayashree Nimmagadda, Judy Murphy, and Richard Dollase

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Running Head: Interprofessional Education Using Frameworks

Paul George, M.D., M.H.P.E.[1]
The Warren Alpert Medical School of Brown University
Providence, RI

Celia MacDonnell, Pharm.D.[2]
The University of Rhode Island
Kingston, RI

Jayashree Nimmagadda, Ph.D.[3]
Rhode Island College
Providence, RI

Judy Murphy, Ph.D., R.N.[4]
Rhode Island College
Providence, RI

Richard Dollase, Ed.D.[1]
The Warren Alpert Medical School of Brown University
Providence, RI

1. Office of Medical Education, The Warren Alpert Medical School of Brown University, Providence, RI
2. Department of Pharmacy Practice, The University of Rhode Island, Kingston Rhode Island
3. Department of Social Work, Rhode Island College, Providence, Rhode Island
4. Department of Nursing, Rhode Island College, Providence, Rhode Island

 Paul George M.D., M.H.P.E.
Office of Medical Education
The Warren Alpert Medical School of Brown University
222 Richmond Street
Providence, RI 02912
Email: Paul_George@brown.edu

Abstract

With the full implementation of the Affordable Care Act and the impending physician and nursing shortage, health professional students will increasingly find themselves working together in teams to care for patients. Education at the undergraduate level is necessary for students to perform effectively in teams as practicing clinicians. We describe our approach to designing curriculum for health professional students, namely using educational conceptual frameworks such as Kotter's 8-step Change Model, Kern's 6-step approach to designing curriculum, and Miller's pyramid. This approach is adaptable and transferable to other health professional schools to aid in interprofessional curriculum development.

Introduction

Interprofessional education "occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care."[1] With the full implementation of the Affordable Care Act and the impending physician and nursing shortage, health professional students will increasingly find themselves working together in teams to care for patients.[2-4]

In response to the impending need for improved and more substantive team training at the undergraduate health professional level, schools responded through the development of new, and in some cases, required curriculum offerings for students. Examples of interprofessional curriculum include a module in which medical and pharmacy students interview a geriatric patient while working together to reconcile medications;[5] a module in which students from nursing, midwifery, and medicine collaborate with regard to medical care;[6] a non-specialty-specific module in which students from nursing, pharmacy, and medicine interview, perform a physical examination, diagnose, and treat standardized patients,[6] and a course where nursing, pharmacy, health psychology, and pre-medical students assess health needs and implement a health promotion program.[8]

National organizations recognize the importance of interprofessional education at the undergraduate health professional level. The Liaison Committee on Medical Education (LCME) recently introduced a new standard, requiring the core curriculum of a medical school to "prepare medical students to function collaboratively on health care teams that include other health professionals."[9] Multiple sponsors developed the Core Competencies for Interprofessional Collaborative Practice in 2011, including the American Association of Colleges of Nursing, the American Association of Colleges of Pharmacy and the Association of American Medical Colleges.[10]

Barriers to delivering interprofessional education limit delivery of functional, effective, and meaningful curriculum. These barriers include scheduling health professional students to be in the same place at the same time, inflexible curriculum constrained by regulatory standards, turf battles between the health professions, and faculty time.[11] In addition, working in interprofessional education can be incorrectly viewed as a "softer skill," with a perceived lack of value in the curriculum.[12]

As interprofessional education rightfully gains prominence in health professions education, it is critical to develop a curriculum that provides students with meaningful experiences, ideally promoting improved patient care while, at the same time, addressing barriers that limit the extent and efficacy of interprofessional education. In Rhode Island, a group of educators from three separate institutions and five different health professional schools (the University of Rhode Island School of Nursing, the University of Rhode Island School of Pharmacy, Rhode Island College School of Nursing, Rhode Island College School of Social

Work, and the Warren Alpert Medical School of Brown University) established a collaborative in 2011 to develop a required longitudinal curriculum for all health professional students at these schools. Here we describe our approach, which involves the sequential use of three conceptual frameworks, to overcome barriers caused by geographic location, separate administrations, and different core curricula.

Using Kotter's 8-step Change Model to Overcome Barriers

Rhode Island is occasionally described as a city-state. Despite its small size and relatively small population, bringing together health professional students from different institutions is a challenge. In order to gain momentum for the development of an interprofessional curriculum, the leadership team used Kotter's 8-step Change Model[13] to begin the inter-institution collaboration. These eight steps and how we approached each one is described below.

1. Establishing a sense of urgency: As mentioned previously, several driving forces are the impetus for developing interprofessional education. At the core is the inter-institutional belief that Interprofessional Education is the right thing to do with regard to patient care and patient safety. From a purely pragmatic view, regulatory bodies such as the LCME[7] and the Accreditation Council for Pharmacy Education[14] require interprofessional education.

2. Creating the guiding coalition: The Rhode Island team built a guiding coalition, comprised of respected educators from each of the participating schools. Deans or Associate Deans of each of the health professional schools involved themselves in the process from the beginning and built a coalition comprised of educators and other key stakeholders, including clinical partners.

3. Developing a change vision: We collectively developed a vision to guide interprofessional curriculum development. The vision for the Rhode Island interprofessional team reads, "to contribute to the health and safety of all RI residents through increased collaboration, communication and education of health care professionals while being a national leader in education, practice and research."

4. Communicating the vision for buy-in: We then sought to disseminate the vision to the various stakeholders who may share our views on the importance of interprofessional collaboration. To do this, the team used multiple different approaches including discussion of interprofessional initiatives in faculty and staff meetings, publicizing group efforts through local media, and presenting the work done at regional and national meetings.

5. Empowering broad-based action: The Rhode Island leadership team, comprised of mid to senior level administrators from each of the health professional schools, developed the evolving vision. They then stepped back to allow faculty to write and execute curriculum

modules, empowering faculty to be creative and innovative while at the same time fulfilling the mission and vision of the collaborative.

6. Generating short-term wins: The Rhode Island team generated short-term successes early on with the introduction of two required interprofessional education workshops. Students rated these workshops highly and, more importantly, asked for more interprofessional curriculum as a result. This early win provided momentum for the development of even more curriculum.

7. Never letting up: The Rhode Island team had regularly scheduled meetings to further the curriculum over a 3-year window, with a meeting scheduled approximately every six weeks. These meetings served as a forum to discuss curriculum initiatives, brainstorm further collaborative ideas, and overcome barriers.

8. Incorporating changes into culture: As a result of the requirement by regulatory bodies and, perhaps even more importantly, the success of the curriculum, interprofessional education is becoming ingrained in the culture of each of the health professional schools. Students expect interprofessional curriculum on an annual basis and have requested more. Faculty have been enthusiastic about the initiatives and, as opposed to being stand-alone, the curriculum is increasingly becoming integrated in course structures across the schools.

Kern's curriculum model

After obtaining buy-in from key stakeholders using Kotter's framework, we next used Kern's 6-step approach to curriculum development[15] to design our curriculum. This 6-step model and the steps we took in each are listed below.

1. Problem identification: Prior to the institution of our curriculum, there was little interprofessional education at any of our health professional schools. However, both the evidence for interprofessional education[16] and regulatory body standards necessitated inclusion as required curriculum.

2. Needs assessment for targeted learners: After introducing an interprofessional workshop to nursing, pharmacy, and medical students, we surveyed these students to learn of their attitudes toward interprofessional education. Students from the three health professions not only felt that these types of activities were important for their education, they also believed interprofessional education should be more frequent, integrated into their curriculum longitudinally, and required,[7] This, coupled, with the aforementioned evidence for the benefits of interprofessional education, and the regulatory need for inclusion in curriculum, led us to further incorporate curriculum, across our health professional schools.

3. Goals and objectives: Although each of our health professional schools had pre-existing objectives for interprofessional education, the Rhode Island team focused early on the Interprofessional Education Collaborative (IPEC) core competencies including the four IPEC domains: values and ethics, roles and responsibilities, teams and teamwork, and effective communication. The team decided to incorporate objectives from the four domains into every curriculum offering to ensure that students in each health professional school focused on these competencies prior to graduation. For example, we created an ethics paper-based case for one of the required workshops that covered the IPEC competencies of "Work in cooperation with those who receive care, those who provide care, and others who contribute to or support the delivery of prevention and health services" and "manage ethical dilemmas specific to interprofessional patient/population-centered care situations."[10]

4. Educational strategies: In deciding on educational strategies, we followed several tenets. We decided to deliver basic curriculum (the why, what, how, where, when) of interprofessional education independently at each of our home institutions. For example, at the Warren Alpert Medical School of Brown University (AMS), students were exposed early to working interprofessionally in their Doctoring (or Introduction to Clinical Medicine) course. Each student was paired with both a physician and a non-physician health provider to lead their year-long small group on topic areas such as delivering bad news, working with interpreters, and motivational interviewing. We then decided to deliver more advanced curriculum, in the form of application and problem solving, when health professional students were together. This application and problem solving took the form of several different exercises such as building a marshmallow tower[17] or a standardized patient exercise where students in teams needed to first diagnose domestic violence and then treat that same patient for both medical and social issues. Throughout our educational offerings, we worked to ensure that the learning was active at all times, reserving the delivery of knowledge for pre-existing courses at the different health professional schools or through pre-class assignments.

5. Implementation: We implemented curriculum gradually for multiple reasons – to gain experience in offering curriculum to a large number of health professional students from diverse educational and socioeconomic backgrounds; to ensure buy-in from key stakeholders for curriculum time; and for purely logistical reasons, such as faculty and space resources.

6. Evaluation and feedback: Finally, we ensured evaluation of each curricular offering in order to continually improve the student experience. This evaluation took the form of both quantitative and qualitative methods. We aimed to use validated scales, such as the readiness for interprofessional learning scale[18] to track student attitudes toward working interprofessionally and the bedside round checklist[19] to assess student performance working in teams in standardized patient encounters, whenever possible.

Miller's Pyramid

Finally, in planning evaluation for students, we chose to use Miller's pyramid[20] as our conceptual framework, in which student competence is measured through knowledge (knows and knows how) and skills (showing and doing). In this framework, knowing and knowing how are at the bottom of the pyramid (and thus easier to assess). Showing and doing are at the top of the pyramid (and more difficult to assess). In using Miller's pyramid, we again chose to have the health professional schools assess what a student knows and what a student knows how to do at home institutions. Examples of this type of assessment include reflective writings on working interprofessionally.

We used the standardized patient encounters for students to show us they can work effectively on interprofessional teams. In these encounters,[7] students work as a team to take a history, diagnose, treat, and counsel a patient with a presentation such as a laceration or pneumonia. These student teams are observed by health professional faculty, who using validated measures such as the bedside rounds checklist and an internally produced document on assessing interprofessional teams (unpublished) to give immediate feedback to students on their performance.

We are currently developing strategies to assess the "does" in Miller's pyramid for health professional students. We likely will employ strategies such as direct observation of student teams in *in vivo* environments along with 360 evaluations to ensure that our students are ready to practice interprofessionally.

Conclusion

Working in interprofessional teams is increasingly more important in the era of health care reform and with the full implementation of the Affordable Care Act in 2014. As a result, training paradigms across health professional schools must shift to provide training in teams so that health professional students are competent to work in teams as practicing clinicians. We combine these different educational theories in a logic model (Figure 1), intended to guide the development of our curriculum and inform others about how to integrate the frameworks. Using educational theory and conceptual frameworks can inform health professional schools on how to obtain buy-in from key stakeholders on implementation of curriculum, design of curriculum, and assessment of student competency.

References:

1. Caipe. (2002). *Defining IPE*. Retrieved from www.caipe.org.uk/about-us/defining-ipe.
2. Taplin, S., Foster, M., Shortell, S. Organizational leadership for building effective health care teams. Ann Fam Med. in 2013; Vol. 11: 279-81.
3. Petterson, S., Liaw, W., Phillips, R., Rabin, D., Meyers, D., Bazemore, A. Projecting US primary care physician workforce needs: 2010-2025. Ann Fam Med.in 2012; Vol 10: 503-9.
4. Byrne, D., Martin, B. A solution to the shortage of nursing faculty: Awareness and understanding of the leadership style of the nursing department head. (2014).   Nurse Educ. in 2014; Vol 39:107-12.
5. Shrader, S., Hummel, H., Byrd, L., Wiley, K. An interprofessional geriatric medication activity within a senior mentor program. Am J Pharm Educ.in 2013; Vol. *77*: 15.
6. Meffe, F., Claire Moravac, C., Espin, S. An interprofessional education pilot program in maternity care: Findings from an exploratory case study of undergraduate students. J Interprof Care in 2012; Vol. 26: 183-8.
7. MacDonnell, C., Rege, S., Misto, K., Dollase, R., George P. An introductory interprofessional exercise for healthcare students. Am J Pharm Educ. in 2012; Vol. 76: 154.
8. Dacey, M., Murphy, J., Anderson, D., McCloskey, W. An interprofessional servicelearning course unites students across educational levels and promotes patient-centered care. Journal of Nursing Education in 2010; Vol. 49(12): 696-9
9. Annals of Family Medicine. Interprofessional Education in 2013. Retrieved from www.annfammed.org/content/11/2/188.full.
10. Crandall, S. (Ed.). (2011). Interprofessional Education Collaborative Expert Panel. Core competencies for interprofessional collaborative practice: Report of an expert panel. Washington, D.C. Interprofessional Education Collaborative.
11. Curran V., Deacon D., Fleet L. Academic administrators' attitudes towards interprofessional education in Canadian schools of health professions education. J Interprof Care in 2005; Vol 1:76-86.
12. Gardner, S., Chamberlin, G., Heestand, D., Stowe, C. Interdisciplinary didactic instruction at academic health centers in United States: Attitudes and barriers. Adv Health Sci Educ Theory Pract. In 2002; Vol 7:179-90.
13. Auguste, J. Applying Kotter's 8-step process for leading change to the digital transformation of an orthopedic surgical practice group in Toronto, Canada. (2013). J Health Med Informat. in 2013; Vol 4: 3.
14. Accreditation Council for Pharmacy Education. ACPE Mission. Retrieved from https://www.acpe-accredit.org/about/mission.asp.
15. Kern et al. Curriculum Development for Medical Education – A six-step approach. Baltimore, MD:The Johns Hopkins University Press:2009.

16. Remington, T., Foulk, M., Williams, B. Evaluation of evidence for interprofessional education. Am J Pharm Educ. in 2006; Vol. 70: 1-7.
17. Wujec T. (2010, April 22). Build a Tower, Build a Team. [Video File]. Retreived from https://www.youtube.com/watch?v=H0_yKBitO8M.
18. McFadyen, A., Webster, V., Strachan, K., Figgins, E., Brown, H., McKechnie, J.   The Readiness for Interprofessional Learning Scale: A possible more stable sub-scale model for the original version of RIPLS. J Interprof Care in 2005; 595-603.
19. Henneman, E., Kleppel, R., Hinchey, K. (2013). Development of a checklist for documenting team and collaborative behaviors during multidisciplinary bedside rounds. J Nurs Adm. in 2013; Vol 43:280-5.
20. Miller, G. (1990). The assessment of clinical skills/competence/performance. Acad Med. in 1990; Vol 65, S63-7.