

Health Information Management Course Sharing: An Interprofessional/Multidisciplinary Perspective

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Abstract

Expanding the reach of the traditional health informatics and information management (HIIM) program is essential in today's academic environment. New and established academic programs are adding HIIM-type courses to meet the needs of health information technology and accreditation standards within their respective curricula. HIIM programs can promote this movement by creating interprofessional/multidisciplinary courses, which increase efficiency and effectiveness in an environment of limited resources. Having a HIIM champion (program director or department head) to work with other academic program leaders is essential to create a multidisciplinary course-sharing culture. If successful, the HIIM program will become more diversified, become a key educational contributor to other programs, and create an atmosphere across campus recognizing that HIIM faculty are content experts in these specific interprofessional/multidisciplinary courses.

Keywords: education; health informatics and information management (HIIM); multidisciplinary courses; health information technology; curricula; interprofessional

Introduction

The need for interprofessional education (IPE) in the health professions has been recognized for many years. The Pew Health Professions Commission in 1998 identified the capacity to work in interdisciplinary teams as a competency to strive for in the 21st century.¹ Indeed, IPE opportunities have increased in the new century. Angelini (2011) stated: "Interdisciplinary and interprofessional education... have been touted as the hope for the future, moving all disciplines toward collaborative efforts."² She continued: "It is often postulated that IPE can introduce shared learning and pave the way for students to embrace the collaborative working model."³

Several studies have documented the benefits of IPE, which include the following:

- Raising awareness of the roles and responsibilities of other healthcare professionals;
- Creating a better understanding of the contributions of all healthcare team members to patient care and outcomes;
- Facilitating interprofessional communication;
- Increasing cultural sensitivity;
- Networking between departments;

- Preparing students for dealing with the complexities of teamwork; and
- Allowing health professionals to strengthen their identities.⁴⁻⁷

A variety of terms have been used to describe this pedagogic practice. Some of these include *shared learning*, *interprofessional training*, *multidisciplinary education*, and *multiprofessional education*.^{8,9}

Gilbert differentiated between multidisciplinary and interdisciplinary education; he defined *multidisciplinary* as “when students from many disciplines learn the same subject at the same time.”¹⁰ He indicated that *transdisciplinary* implied interaction “between, among or across disciplines.”¹¹ According to the World Health Organization (2010), IPE occurs “when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes.”¹²

Specifically, within the disciplines of health informatics and information management (HIIM), educational content is sought by many disciplines in universities. Curricula in the health sciences, such as nursing, health services administration (HSA), dentistry, public health, pharmacy, and computing/informatics, are now offering health information management (HIM) and health informatics courses.¹³⁻¹⁶

Many organizations that accredit health professionals’ educational programs have included requirements for IPE in their published expectations for curricular content. For example, in the American Association of Colleges of Nursing’s *Essentials of Baccalaureate Education for Professional Nursing Practice* (2008), one of the nine essentials is titled “Interprofessional Communication and Collaboration for Improving Patient Health Outcomes.” The standards indicate that “interprofessional education enables the baccalaureate graduate to enter the workplace with baseline competencies and confidence for interactions and with communication skills that will improve practice, thus yielding better patient outcomes.”¹⁷ CAHIIM’s HIM baccalaureate curriculum requirements also include standards specifically related to student participation in enterprise-wide committees and interrelationships across the healthcare delivery system.¹⁸ The Commission on Accreditation of Allied Health Education Programs (CAAHEP) standards for the accreditation of programs for medical scribes also includes curricular content related to collaboration with healthcare personnel and knowledge of allied health professions.¹⁹ The key elements under Standard 11, Interprofessional Education, of the Accreditation Council for Pharmacy Education’s *Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree* (2015) state: “Through interprofessional education activities, students gain an understanding of the abilities, competencies, and scope of practice of team members.”²⁰ The 2013 revision of the Center for the Advancement of Pharmacy Education (CAPE) educational outcomes includes interprofessional education and collaboration as a specific outcome in Domain 3.²¹

Opportunities exist for HIIM departments and programs to expand their academic influence within other disciplines through interprofessional/multidisciplinary course offerings. Throughout this article, the terms *interprofessional* and *multidisciplinary* are both used to reflect appropriate course offerings. Offering interprofessional/multidisciplinary courses allows HIIM departments and programs to increase student exposure to HIIM, diversify the value of the HIIM department/program, showcase the HIIM faculty beyond the walls of the traditional HIIM department/program, and create additional avenues for HIIM faculty to engage in research and scholarship across the university ecosystem. Engagement of HIIM faculty in multidisciplinary research is an important step toward ensuring that HIIM professionals are recognized as high-impact contributors to basic research, applied research, and the acquisition of new knowledge.²²

Background

The HIM program at the University of Louisiana at Lafayette is in the Department of Allied Health within the College of Nursing and Allied Health Professions. Several years ago, the HIM program offered its first interprofessional/multidisciplinary course, HIM 361, Medical Terminology. Even though the development and integration of multidisciplinary medical terminology courses had existed for quite some time, this was the program’s first experience with course sharing. The university’s medical terminology

course was open to any student at the university who successfully completed the Human Anatomy and Physiology prerequisite. This course was very popular among dietetic, nursing, and premed students. The course was embedded in the HSA curriculum in 2013 and in the kinesiology curriculum in 2017. As interest in the course grew, the HIM program began identifying additional courses that could be beneficial to existing programs at the university.

Steps to Implement Course Sharing

Identify Interprofessional/Multidisciplinary Courses

Reviewing the existing HIIM curriculum to identify potential multidisciplinary or interprofessional courses is a critical first step in expanding the HIIM course-sharing model within a university. Online courses are a good place to start because they offer the greatest flexibility in course selection and are popular with students and faculty. Identify courses that have a broad coverage base, such as medical terminology, health informatics, legal aspects of healthcare, and healthcare delivery systems. These courses fit into most curricula that offer a health track or have an emphasis on health information technology. Healthcare in the United States is complex, and courses in health information technology are essential to prepare students in all healthcare-oriented domains.^{23, 24} For example, as early as 1993, Tan discussed “the need for active discussions of [information systems (IS)] curricula in health administration programs is fostered primarily by the unmet need in health services for administrators with the knowledge and skills for aligning IS effectively to support strategic planning, general management, and routine problem solving.”²⁵ Just as HIIM curriculums have incorporated courses from other colleges/departments, such as financial management, accounting, management and leadership, and public health, HIIM courses are now being integrated into other disciplines as well.

Identify Potential Academic Programs for Course Sharing

Health information technology courses are becoming a staple in many academic programs outside of HIIM. With the increase in healthcare jobs focusing on health information technology and informatics, many other professional and preprofessional programs have recognized the need to include traditional HIIM courses within their existing curricula.²⁶ Evaluating all potential academic programs at your specific university is a crucial step in the integration process. Typically, academic programs in healthcare, business, and computing/informatics offer the most potential for interdisciplinary/multidisciplinary collaboration.²⁷ In addition, look for potential gaps in existing curricula across the university for which HIIM courses would be appropriate. This process includes reviewing each potential curriculum, reviewing specific accreditation standards for domain and knowledge clusters related to specific academic programs, and creating a list of HIIM courses that could add specific domain knowledge along with projects that would meet accreditation competencies.

Creating an evaluation matrix will assist you in the assessment of programs at your university that could benefit from incorporating existing HIIM courses. This matrix could include sections such as existing courses, course descriptions, gap analysis, proposed HIIM courses, proposed competencies, and sample projects with Bloom’s Taxonomy levels. Table 1 shows examples of the 2017 Accreditation Council for Education in Nutrition and Dietetics (ACEND) Accreditation Standards for Nutrition and Dietetics (coordinated undergraduate program) featuring knowledge domains, competencies, and potential HIIM courses that align with them.

Seek Academic Administration Support and Implement Strategy

Support from academic administration within the college/school is necessary to extend the reach of HIIM courses. Depending on the academic structure, approval may be needed from the department head or chair, the associate dean, and/or the dean. In some instances, approval from the provost of the university may be needed. Interprofessional/multidisciplinary classes may necessitate additional full-time or adjunct faculty, more administrative support, and new classroom scheduling times. Strong support from higher administration could mitigate some of the challenges involved.

Discussing the value of HIIM courses with deans or department heads/chairs across the university is the most important step and will differ from university to university. The HIIM department head/chair

should build a good working relationship with department heads from other disciplines and convey the potential value that HIIM courses could bring to their respective curricula. Sharing the new CAHIIM competencies and pointing out the use of Bloom's Taxonomy levels will demonstrate the breadth and rigor of the courses. This point could be very attractive if the other programs are accredited or in the process of seeking accreditation from an accrediting body.²⁸ Offering unique resources that simulate real-world health information technology and informatics projects focusing on health information technical skills can increase the appeal of HIIM courses.²⁹ For instance, the HIM program at the University of Louisiana at Lafayette has a state-of-the-art health informatics and analytics lab that provides the software needed to perfect health informatics, data analytics, consumer informatics, and decision support skills. AHIMA's Virtual Lab (VLab) applications are also used in this lab. Currently, the HIM department covers all costs of the VLab for senior students; other students purchase the VLab subscription. The health informatics and analytics lab is used by students in the HIM, HSA, dietetics, and nursing programs.

Balance New HIIM Course Loads

As more HIIM courses become multidisciplinary, faculty course loads may need to be evaluated and possibly adjusted. Gaining HIIM faculty buy-in is crucial for a successful expansion of the HIIM course-sharing model. Making the case that expanding HIIM course offerings across the university is a great benefit to the HIIM program is essential. Increased student enrollment and greater recognition across the university are two strong selling points that faculty are interested in hearing. Creating a projected faculty workload sheet covering several semesters will be useful in determining who will teach the new courses and what format (online or face-to-face) will be utilized. Adjunct faculty or additional full-time faculty lines may need to be added as course offerings increase. Discussing these changes with current faculty well in advance may eliminate or at least mitigate negative responses.

Case Study

For several years, the HIM bachelor of science program at the University of Louisiana at Lafayette was successful with its first multidisciplinary course deployment, Medical Terminology, expanding from its initial offering of two sections per year in 2011 to six sections per year by 2017. By 2012, two new academic programs had been developed and launched at the university: a bachelor of science in informatics with a health informatics track and a bachelor of science in HSA. Initial discussions between the HIIM program director and the head of the Department of Allied Health were initiated to determine how specific HIIM courses should be part of these two programs. The following courses were identified as possible interprofessional/multidisciplinary courses within the HIIM curriculum: Medical Terminology, Electronic Health Records I and II, Introduction to Health Informatics, Data/Project Management Systems in Healthcare, Healthcare Information Systems, Legal Aspects of Healthcare, and Healthcare Process Analysis and Design.

The head of the Department of Allied Health hosted meetings with the informatics and HSA program directors to encourage the utilization of existing HIIM courses within their respective curricula. Both directors recognized the benefit of using established HIIM courses that were taught by content experts. A review of the structured HIIM syllabi including objectives and taxonomic levels impressed the leadership and made them feel comfortable that the courses would meet the needs of their students.

The courses Foundations of Electronic Health Records, Data/Project Management in Healthcare, and Healthcare Process Analysis and Design were added to the bachelor of science in informatics curriculum. The following courses were added to the bachelor of science in HSA curriculum: Foundations of Electronic Health Records, Legal Aspects of Healthcare, Healthcare Process Analysis and Design, Healthcare Information Systems, and Medical Terminology. Table 2 shows the HIIM courses that are now part of the informatics, HSA, and kinesiology programs. In 2014, the HIIM program offered, for the first time, two sections of Legal Aspects of Healthcare as well as two sections of Healthcare Information Systems to meet the new student enrollment demand. Because the HSA program is online, one section of the Legal Aspects of Healthcare course was taught online for HSA students, and one was taught face-to-face for HIIM and informatics students. The Healthcare Information Systems sections were designed as

online courses and generally numbered about 70 students in total. As stated earlier, additional sections of Medical Terminology were offered to meet the needs of the growing student population interested in the course. In the spring 2017 semester, the Medical Terminology course was added to the online kinesiology curriculum, and it is anticipated that more sections will be added in the upcoming semesters to meet student demand. Finally, a new course was developed and launched solely to meet the needs of the HSA program. The HSA faculty determined that a course relating to electronic health records would be beneficial for HSA students. The inaugural Foundations of Electronic Health Records (online) was offered in the fall of 2013 and taught by HIM faculty. Classes that are open to all disciplines are taught more as interprofessional courses, while courses with individual sections are generally multidisciplinary in nature.

Case Study Results

Enrollment in all the interprofessional/multidisciplinary HIIM courses (six in total) have increased since the courses began being offered to non-HIIM majors. Table 3 shows the changes between the baseline student enrollment data for the multidisciplinary HIIM courses before they were offered to non-HIIM majors and the 2013–2017 average.

The interprofessional/multidisciplinary course enrollment increases have led to an additional 122 seats per year for the HIM program. The largest increases by percentage were from Legal Aspects of Healthcare (57.7 percent) and Healthcare Information Systems (57.6 percent). The largest increase in students per year occurred in Medical Terminology (47 students) and Healthcare Information Systems (26 students). Figure 1 reflects the growth in students for the HIIM courses from 2012 (baseline) to 2017.

Discussion

The new HIIM interprofessional/multidisciplinary course offerings at the University of Louisiana at Lafayette produced additional sections of the following courses: Legal Aspects of Healthcare, Medical Terminology, Healthcare Information Systems, and Foundations of Electronic Health Records. These extra sections plus the additional students in regular sections increased the workload for the HIIM faculty. The additional sections allowed the HIIM program to redistribute the HIM courses so that the content experts were teaching more of the courses in their areas of expertise. In addition, the increased students helped the Department of Allied Health reach its targeted enrollment goals. Finally, the HIIM program experienced an increase in declared HIIM majors because some students switched their major once they were exposed to HIIM.

Currently, the faculty within the College of Nursing and Allied Health Professions are meeting to devise strategies to further integrate IPE within the college. Although the HIM program has worked with many other disciplines, this is the first opportunity to work with the nursing faculty. The faculty determined that the optimal course to begin this integration is a course focused on legal and ethical aspects of healthcare (content that is required of all majors in the college). This course will be developed and taught by an interprofessional team of faculty, and will provide rich opportunities for HIM, HSA, and nursing students to engage with each other in and outside of the course.

This undergraduate course-sharing model could also be utilized to develop/revise graduate HIIM curricula. Graduate programs in HIIM provide many of the same domain knowledge clusters that are included in undergraduate programs, such as computer and information science and technology, HSA, public health, and HIIM.³⁰ In an era of shrinking state support and tighter university budgets, proposing a HIIM graduate program or optimizing an existing HIIM graduate program with a course-sharing model may garner the administrative support needed to make course sharing a reality.^{31, 32} In addition, the course-sharing model will help create a multidisciplinary classroom environment to maximize student success and will expose new students to the discipline and value of HIIM.³³

Conclusion

By offering interprofessional/multidisciplinary courses, HIIM programs can increase student enrollment in courses, expose new students to HIIM, add to the value of the program (in the eyes of

administration), and integrate core HIIM courses within curricula across the university. In addition, these courses give HIIM faculty a platform to showcase their expertise and knowledge outside of the traditional HIIM walls, which enhances the opportunities for collaborative research and scholarly work.³⁴ Creating this course sharing structure requires vision, faculty and administrative support, and collaboration with departments/programs across the university. The HIIM faculty are the HIIM experts at most universities, and academic programs in the areas of computing, business, and health sciences will continue to diversify their course offerings to meet the growing need for health information technology.

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Table 1

Evaluation of 2017 Accreditation Council for Education in Nutrition and Dietetics (ACEND) Accreditation Standards for Nutrition and Dietetics (Coordinated Program)

Knowledge	Competencies	Potential Health Informatics and Information Management Course
KRDN 4.2: Evaluate a budget and interpret financial data.	CRDN 4.5: Analyze quality, financial and productivity data for use in planning.	Financial Management in Healthcare Organizations
KRDN 4.3: Describe the regulation system related to billing and coding, what services are reimbursable by third party payers and how reimbursement may be obtained.	CRDN 4.9: Explain the process for coding and billing for nutrition and dietetics services to obtain reimbursement from public or private payers, fee-for-service and value-based payment systems.	Healthcare Reimbursement Methodologies or Coding and Reimbursement Systems
KRDN 4.6: Analyze data for assessment and evaluate data to be used in decision-making for continuous quality improvement.	CRDN 4.4: Apply current nutrition informatics to develop, store, retrieve and disseminate information and data.	Healthcare Process Analysis and Design

Table 2

Health Informatics and Information Management Courses Embedded into Existing Curricula at the University of Louisiana at Lafayette

Course	Bachelor of Science in Informatics	Bachelor of Science in Health Services Administration	Bachelor of Science in Kinesiology
Legal Aspects of Healthcare		X	
Medical Terminology		X	X
Data/Project Management Systems in Healthcare	X		
Healthcare Process Analysis and Design	X	X	
Healthcare Information Systems		X	
Foundations of Electronic Health Records	X	X	

Table 3

Comparison of Health Informatics and Information Management Course Enrollment Baseline Data and 2013–2017 Average

Course	2012 Baseline	2013– 2017 Average	Average Yearly Enrollment Growth	Percentage Growth
Legal Aspects of Healthcare	26	41	15	58%
Medical Terminology	110	157	47	43%
Data/Project Management Systems in Healthcare	39	45	6	15%
Healthcare Process Analysis and Design	22	34	12	55%
Healthcare Information Systems	41	67	26	63%
Foundations of Electronic Health Records	0	18	18	–

Figure 1

Student Enrollment Changes, 2012–2017

