

INNOVATIVE APPROACHES TO A MULTIDISCIPLINARY PROGRAM: DEVELOPING AN UNDERGRADUATE PROGRAM IN HEALTH INFORMATION MANAGEMENT

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Abstract

Using technology in health care is a key component to creating an improved, higher-quality health care system. However, there is a gap between the academic education of health care workers and the real world usage of technology in health care delivery. The authors note a lack of mandatory and standardized health information management programs taught to students at the undergraduate level. One of the issues is the multi-disciplinary nature of the field: it brings together the information technology/computer science field with a variety of allied health, nursing, and medical fields. These fields do not talk the same language. One of the main objectives of this paper is to explore the notion of educating students at the undergraduate level in health information management, emphasizing the multi-disciplinary nature of the field. The paper discusses the development and implementation of this curriculum at Marymount University.

INTRODUCTION

Health information management is one of the key components to creating an improved, higher-quality health care system throughout the world. In 2005, President George W. Bush set a goal of universal electronic medical records within 10 years (by 2015), outlining a detailed plan designed to increase the use of information technology (IT) in healthcare, and to create national standards that would enable medical information to be digitized, stored and shared electronically (2005). This was echoed by President Obama in a speech in January 2009, where he reiterated the need "...to improve the quality of our health care while lowering its cost, we will make the immediate investments necessary to ensure that, within five years, all of America's medical records are computerized" (Childs, Chang, & Grayson, 2009).

The incorporation of technology into the field of health care has proven to be an effective means for managing and improving patient outcomes. Advances in technology can improve the quality of healthcare, maximize access, lower costs, and minimize risks. With proper implementation and maintenance of health information technology programs, health care organizations can provide more efficient and continuous quality care. However, the information technology workforce lacks trained individuals who can understand and respond to the unique needs and challenges of the many facets of the health care industry. To maximize the utilization and capabilities of the advances in technology, and the return on investment, healthcare professionals and executives must be able to rely on specialized experts in the field of health information technology (Health IT).

One of the questions challenging both healthcare executives and practitioners is “how do we ensure a qualified workforce, that can effectively implement and maintain the most current technology in healthcare?” The answer lies in academic education programs. There is an obvious need for collaboration among health care management and information management academicians to provide a diverse, innovative, and multi-disciplinary academic program in health information management.

Despite the increasing demand for qualified experts in health information management, there are only approximately 50 CAHIIM (Commission of Accreditation of Health Informatics and Information Management Education) (<http://www.cahiim.org>) accredited baccalaureate programs nationwide. This number can be compared unfavorably to accredited medical schools (Association of Medical Colleges) (www.aamc.org) or the American Association of Colleges of Osteopathic Medicine (www.aacom.org) and over 300 nursing programs in the United States (National League for Nursing Accreditation Committee) (www.nlnac.org). Additional academic programs in the field of health information management will help effectively meld technology and medicine. Health information management (HIM) education programs will further link the two separate fields by providing, on the one hand, experts who can understand and interpret medical management information and on the other, implement, design, and develop effective technology. Most importantly they can communicate with each other to help practitioners provide seamless medical care to all patients, across a variety of health care delivery systems.

With the emerging digitization of health care, more and more patient data is collected and transmitted through multiple networks and computer systems. An offshoot of this is that security and privacy issues become a major concern. More importantly, concern about consumer privacy and the threat of litigation is considered a major impediment to the transfer of data between health care organizations (Angst & Agarwal, 2009). In addition, there are major changes pending in medical billing and classification systems, which present new challenges facing the many constituents in health care delivery as they begin to adopt technology.

On the other hand, these new challenges present opportunities for properly trained individuals in the field of health information management and health information technology. Such professionals can synergistically implement programs that facilitate the care of individuals, ensure consumer privacy, help manage disease, and classify, code, and bill for patient visits. It should be the goal of HIM programs to develop students to be competent health information management professionals who are able to be dynamic and innovative thinkers, who can balance the needs of patients with the needs of the health care providers, and who can adapt with the demands of the changing regulatory environment.

DEVELOPING THE WORKFORCE, MOVING FROM THE TWO-YEAR DEGREE

In spite of being highly sought after by a variety of organizations, including hospitals, health care organizations, third party insurers and public health agencies, there exists a hiatus between the academic education of healthcare workers and the real world usage of health information management systems. Similarly, there is a disconnect between today's information technology professional skills and the core needs of the healthcare industry.

Much of the focus of education and training in health IT has been at the "technician" level as witnessed by the numerous allied health programs offered by the community colleges. Currently, a majority of U.S. health care workers are educated in the nation's more than one thousand community colleges, including 59% of new nurses and an equally high percentage of allied health workers (Foley, 2009). The Northern Virginia Community College (NVCC), the largest higher education institution in Virginia and the second largest community college in the nation, offers nine associate of applied science (A.A.S.) degrees in the health care field,

as well as a variety of certificates and training programs. These include a two-year Health Information Management associates degree and a certificate for the Clinical Coding Specialist. NVCC is also developing a 2-year degree in Electronic Health Records Management. Marymount University will accept transfer student from NVCC to transition into a BS in HIM.

The importance of the community colleges in addressing the need for skilled health IT workers to help health care providers deploy effective systems has been recognized by the Federal government and \$80 million has been set aside to fund community college training programs and curriculum development (Blumenthal, 2009). This will provide the tactical workforce to implement efficient health IT applications. However, as health IT becomes a critical part of the operations of the physician's office, the hospital, and other health care settings there is an additional need for higher-level workers, who are preferred to be knowledgeable in not only information technology but also in health care management. They must be able to troubleshoot operational problems, research and select new automated systems that meet the needs of the organization, develop procedures and processes to ensure the security and privacy of patient data, transfer data to other institutions, and analyze data and generate special reports for other health care workers.

In addition, there have been many proposed changes in the health information environment itself, such as the implementation of the International Classification of Diseases (ICD)-10 family of standards by October 2013. Transitioning to ICD-10-CM and ICD-10-PCS, regarded as "the largest health-care systems modernization effort in history" (Nichols, 2010), is more complex than the implementation of new code sets were in the past because the uses of the coded data are more complex than those for which previous standards were designed (Bowman, 2009). "Because of the complex structure of ICD-10 codes, implementing and testing the changes in EHR, billing systems, reporting packages, decision and analytical systems will require more effort than simply testing data fields - - it will involve installing new code sets, training coders, remapping interfaces and re-creating reports/extracts used by all constituents who access diagnosis codes." (The Deloitte Center for Health Solutions, 2009). These additional types of competencies will require healthcare IT workers with a broader background in both information technology and health care management, critical thinking skills, and a minimum of a four-year Bachelor of Science (B.S.) degree.

More IT investments and spending will mean more effective and efficient health care systems. However, an insufficient supply of knowledgeable IT professionals in the healthcare environment will slow down the progress that can be made. Knowledge deficits in IT will become a major hurdle to health care managers as they envisage greater use of IT to improve the efficiency and effectiveness of their operations. To date, collaboration efforts for IT/Healthcare have focused on incorporation of health informatics for clinical professionals/healthcare professionals. However, to our knowledge, little effort has been made to expand IT curriculum to include health informatics training, particularly in the Washington D.C. metropolitan area. This paper attempts to outline a new four-year undergraduate program which is designed to meet the goal of supplying qualified IT professionals with health care management and health information management training.

DEVELOPING THE MARYMOUNT B.S. IN HEALTH INFORMATION MANAGEMENT

Marymount University, in Arlington, VA, has felt well-positioned to develop a B.S. program in Health Information Management in a short timeframe to support the Washington DC Metropolitan Area. At present Marymount offers:

- An undergraduate, B.S., in Information Technology;
- A graduate degree, M.S., in Health Care Management, accredited by the Commission on Accreditation of Healthcare Management Education (CAHME);
- A variety of nursing programs, undergraduate, graduate, and doctoral programs; and
- Other health care programs such as physical therapy.

The Marymount Healthcare Management Department has an established relationship with a large metropolitan-DC hospital. The university currently provides an on-site M.S. program in Health Care Management to the hospital's staff-student cohorts. Recently, the Human Resources Department at this hospital has had multiple inquiries by staff who wish to pursue a bachelor's degree in health information management or health information technology. The population is mainly technical staff with associate's degrees in specified medical technical areas (e.g., radiology, nuclear medicine, ultrasound, etc.). The hospital executives also noted a shortage of expertise in the area of health information management. After

much research and discussion with the health care community, it became apparent to Marymount faculty in health care management, health sciences, nursing and information technology that there is a felt need to meet industry demands by providing qualified and innovative professionals in the field of health information management. Healthcare organizations are under enormous pressure to rollout electronic health records by not later than 2015. Industry billing standards through the Center for Medicare and Medicaid Services have also recently changed to electronic submission. Additionally, healthcare organizations are trying desperately to keep up with innovations in telemedicine.

The metropolitan DC hospital discussed above is at the forefront of many of these initiatives. The facility is currently implementing an electronic medical records system. It also utilizes and encourages and trains surgeons on robotics-assisted surgery. The hospital, as with all healthcare facilities, is trying to streamline services, provide better quality care, and improve patient outcomes through the advantages that advanced technology has to offer. They cannot do this without health information management expertise. Thus, Marymount University faculty have been working collaboratively across disciplines within the university and with industry professionals to design a program, that aims to prepare highly skilled individuals with competencies in health care management and policy, medical terminology and coding, and information technology expertise to help close the gap between technology and the management of technology in healthcare. This is an innovative and creative field that needs specifically trained individuals.

An analysis of the requirements of the program led to the decision to house the program within the School of Business Administration where both the IT program and health care management programs are co-located. Prior to developing the program, careful consideration was given to the other health sciences programs offered at Marymount and the associate degrees offered at the local community colleges, Northern Virginia Community College (NVCC) in Virginia and Montgomery College in Maryland. The accreditation requirements from the Commission on Accreditation for Health Informatics and Health Information Management Education (CAHIIM) for baccalaureate degrees were also analyzed (2009). Five components were considered as part of the academic requirements for the Health Information Management major: IT, Healthcare Management, Health Sciences, Healthcare Information Management, and Experience (as shown in Figure 1).

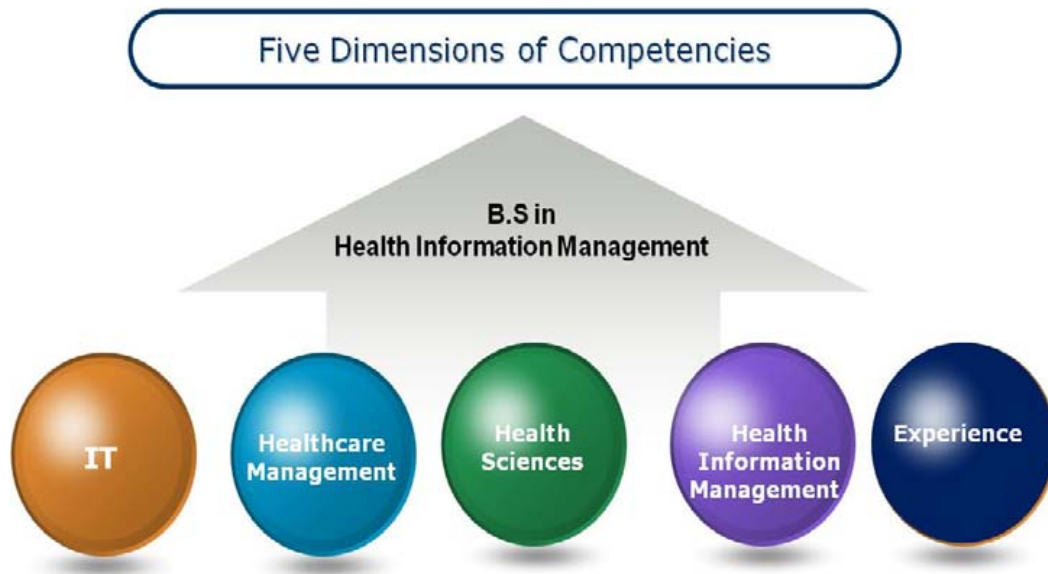


Figure 1 The Baccalaureate Qualifications For A Health IT Position

In addition to the curriculum requirements of the academic majors and minors, Marymount University requires students to take courses that fulfill the Liberal Arts Core, a foundation in the liberal arts and sciences (More details are available from the website: <http://www.marymount.edu/cat/undergrad/programs/core.html>). This foundation is designed to enhance learning in all fields of study, advance the practice of lifelong learning, and encourage students to live an examined life. The basis of this liberal arts education lies in the development of ability to communicate, the ability to inquire in any field and the ability to achieve the lifelong goal of self-actualization, rather than a mere accumulation of technical knowledge. Liberal arts education in the Catholic intellectual tradition also emphasizes philosophy and the academic study of religion through theology and religious studies. These disciplines directly address the meaning and purpose of human life and explore a variety of answers to questions about ultimate reality, human existence, knowledge, and morality. These studies provide valuable insights into working in today's diverse health care environment.

COMPETENCIES REQUIRED FOR HEALTH IT WORKERS

It is important for health IT workers to have a background in the broad field of information technology, including computer hardware and software, computer networking, database technology, information security, and electronic document and records management. These courses were available as part of the existing Marymount undergraduate IT program and will be taken with other students. This IT background will assist in the advanced applications of health systems.

It is equally important for health IT workers to fully understand the health care environment in which they will be working, including healthcare delivery systems, healthcare statistics, legal aspects of healthcare, quality management in health care, and health care finance and accounting. This material is currently covered, at a higher level, in the masters program in health care management and subject-area expertise is available to transfer this knowledge at the undergraduate level. It is also planned to offer an undergraduate program in health care management in the near future.

Much of the work in health information management involves medical data, so a third component of the program is acquiring knowledge of the health sciences, particularly the human body and its diseases. Students take two sciences and two social sciences as part of their liberal arts core and these are specified in the health information management program as anatomy and physiology (I and II), psychology and sociology. In addition, students in the Health Information Program are required to take two nursing courses in pharmacology and pathophysiology. These courses are already offered at Marymount in both classroom and on-line formats. A new course in medical terminology will also be offered and designed to support both the medical coding process as well as communication with other health care workers.

The health information management component specializes in the knowledge and skills that are specific to the health information management field and includes health information systems, medical classification systems, advanced medical coding, health care reimbursement systems, and integrated health care technology, including Telehealth.

The final part of the program is preparing the students for the work place and engaging them in an internship in the field. Students are prepared

through a course in project management and a seminar that introduces them to the career possibilities. They intern for 240-hours in a health information management environment and execute a real world for real-clients project during the capstone course.

The content of the program, outside the liberal arts core, is summarized below:

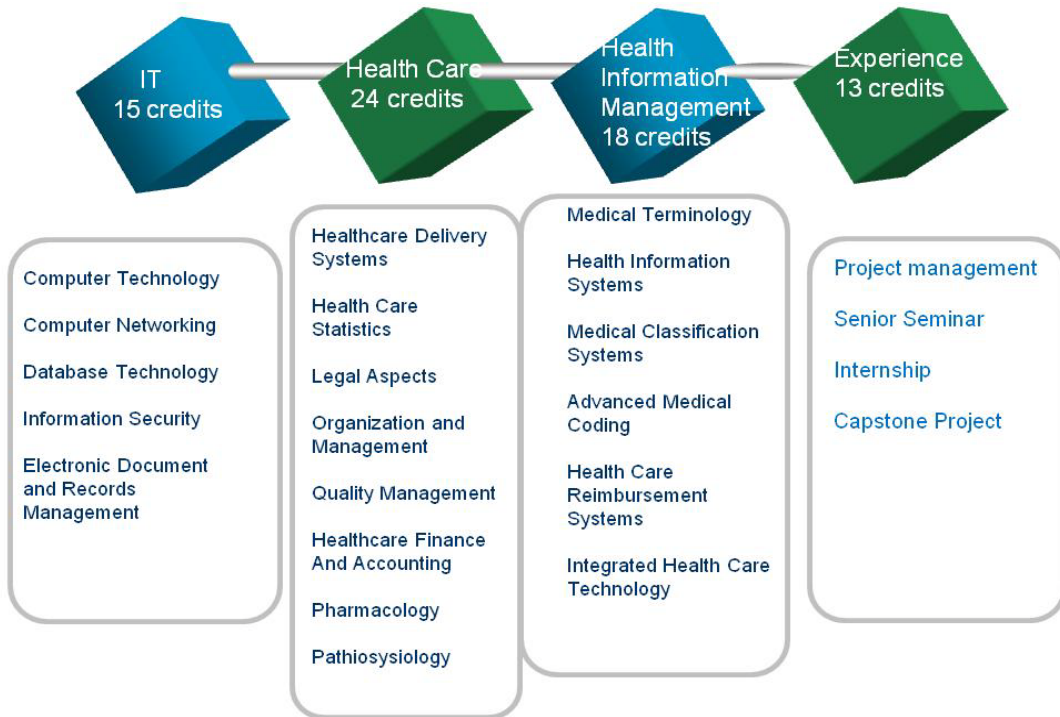


Figure 2 Proposed Major And Its Components

The program prepares students for high-level thinking leading to effective engagement in the changing health information management field. Students will not just see themselves as “worker bees” but ready for the role of innovator and critical thinkers.

The ultimate goal is to create a community of learners that continue to grow and develop through graduate school and alumni events.

OTHER EDUCATIONAL ALTERNATIVES

However, many health care workers and IT professionals already have a bachelor’s degree, and simply need cross-training to add additional knowledge skills and abilities in health information management.

Marymount has therefore also included a Post-Baccalaureate Certificate in health information technology (Health IT) to its health information management program. This 27-credit certificate includes two tracks: Track 1 for students who already have degree in a health care field but need information technology fundamentals and Track 2 for information technology professional who need knowledge of medical terminology (to communicate) as well as knowledge of health care systems and practices. All students also take specific course in health information management and a capstone course which allows them to apply their knowledge and skills to a real-world health information management project.

In addition, there is a pool of students already studying at the school in nursing or health sciences. For these new entrants in the health care workplace, knowledge of health IT could be a valuable addition to their subject-specific skills and better prepare them for jobs of today. Marymount has, therefore added a minor in Health IT to the health information management program.

Finally, a specialization has been added under the B.S. in Information Technology to allow our students to specialize in Health IT as part of their degree programs. These students are more technical by background but are exposed to Health IT, terminology and applications. The goal of offering this specialization is to encourage them to enter the field and to make a contribution to this important and growing market. Like the post-baccalaureate students, they take the capstone course which allows them to apply their knowledge and skills to a real-world health information management project.

CONCLUSIONS

The emphasis on health IT education today is mainly at the associate degree in applied science (A.A.S.). The authors believe that the ongoing governmental and institutional changes in the health care field will require a higher level of education and a broader field of knowledge as offered by a four-year baccalaureate degree. The proposed B.S. in Health Information Management is designed to fulfill that need in the Washington D.C. metropolitan area, serving the regional and international communities.

The program at Marymount University will serve students who have an interest in health care in high school, perhaps taking a course in the Career and Technical Education (CTE) program, who want to pursue a

four-year degree. The program is also designed for students who have the associate degree and wish to pursue a four-year degree. Students are exposed to critical thinking skills to ensure they are ready to participate fully in the changing health care environment. It is planned that the program will begin in Fall 2010.

ENDNOTES

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