Web Based Education to Prepare Health Information Management (HIM) Students in the Realm of Coding

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ABSTRACT

For health care, trained personnel is increasingly important, especially health information management (HIM) professionals. Within this group of HIM professionals, the demand is great for in-patient International Classification of Diseases, Ninth Revision, Clinical Modifications (ICD-9-CM) certified coding professionals (coders). The use of an effective integrated information system (IS) is the basis for success in today's highly competitive health care market. Therefore, preparation of the workforce to handle complexities and sophistication of such IS and HIM is paramount for viability. The current environment for coding is computer based technology. Convergence taking place in computing and telecommunications plays a very important role in this endeavor.

INTRODUCTION

One of the circumstances causing great impact in the realm of computing is convergence, taking place with computing and telecommunications. Organizations in general are able to perceive the capabilities of combining the hegemony of computer based information and telecommunications networks (6) and the rapid evolution of the Internet and Intranet extant play a preponderant role in this new array. A primary user of computer based information and telecommunications is the health care industry, and in this sector, as with any industry utilizing these tools, it is emphasized that the drivers of the information revolution are cost, computing power, and convergence (5). These parameters are inter-related to computing infrastructure, new communication technology and the access to the technology. The research literature is rich in opinions regarding Nolan's Model, perhaps because he was a pioneer in relating computer technology and its use within the organizations and/or is a suitable approach to determine the stage of an organization in regard to computer technology. Nolan's Model is not universally accepted as he described it at the time of its inception in 1979, but neither is universally rejected (4). According to Nolan's Model the Institutions of High Learning employ a setting in which technology is a driving force to improve learning. Most of them are located in Stage IV: Integration. The most basic classroom topology regarding the use of technology is the one in which the instructor uses a computer, has access to a network connection and also to a projection system. A much better setting is the one in which the instructor uses a laptop, has access to the network connection and a projection system. In both settings described above, the students have a minor or no participation whatsoever. To obtain student participation, it is necessary to design a setup in which the end-user (students) will be able use a computer with network connections. The latter is the typical description of a computer lab. A better setting would be the one in which student has a laptop, network connection linked to the Internet and the teacher has direct interaction with the students (9).

For health care, available trained personnel is increasingly important, especially health information management (HIM) professionals. In particular, there is great demand for in-patient International Classification of Diseases, Ninth Revision, Clinical Modifications (ICD-9-CM) certified coding professionals (coders). The American Health Information Management Association (AHIMA) is the professional association that develops the testing and certifying of such professionals. However, the manner in which these professionals are trained is available through varying methods such as on-the-job, work-

shops, or in institutions of higher learning. Whatever the method, the field is requiring a greater level of hands-on training involving increasing sophistication in the areas of computing technology. Such interaction allows the teacher to interact with them on a one-to-one basis, or even in groups. Add to the latter, a software program with database capabilities and there will be ability to play scenarios, and sensitivity analysis to replicate real life situations in the classroom.

The use of an effective integrated information system (IS) is the basis for success in the highly competitive healthcare environment today. The Bureau of Labor Statistics cites health information technology (HIT) as one of the 20 fastest growing occupations in the US (2). Therefore, preparation of a workforce to handle the complexities of such IS and HIM is vital. It has been stated that factors preventing adoption of integrated healthcare IS may be a lack of user acceptance. The research literature concurs that as many as half of all IS fail because of user and staff resistance (11). Throughout the US, HIM instruction and training in the form of accredited (and some non-accredited) health information technology (HIT) programs, have begun to inculcate into curriculums, IS learning. Thanks to accrediting bodies, standards include requirements for this type of learning (8).

In the (HIT) classroom, more emphasis is being placed on providing situations with which the student will be faced in his or her day-to-day endeavors. Along with the hands-on type training, the student must learn the theoretical importance extant in choosing and implementing a successful IS in the realm of healthcare. As with most businesses, there must be a marriage of delivering a quality product with reduced costs. Although integrated information systems are vital to the delivery of high-quality care at a competitive price, many healthcare organizations have not yet implemented them. The primary factor limiting their implementation is cost (11).

Premise of the Paper

The purpose of this paper is to demonstrate the enhancement of learning using convergence to replicate in the classroom, situations that will educate and prepare students for professional roles within the Health Information Management (HIM) industry.

BACKGROUND

The dynamic professional association known as AHIMA represents more than 40,000 specially educated HIM professionals working throughout the health care industry (1). AHIMA traces its history back more than 70 years. At that time, the American College of Surgeons (ACS) established the Association of Record Librarians of North America (ARLNA) to "elevate the standards of clinical records in hospitals and other medical institutions." The association has undergone several name changes and is now known as AHIMA. This decision was based largely as a result of the health care industry ongoing restructuring and decision-making increasingly driven by data. AHIMA supports the common goal of applying modern technology to and advancing best practices in HIM (3). Credentialing and certification/registration offered by AHIMA today include Registered Health Information Administrator (RHIA), Registered Health Information Technician (RHIT), Certified Coding Specialist (CCS), Certified Coding Specialist – Physician-based (CCS-P), and Certi-

fied Coding Associate (CCA) (12.) The coding credentials have been developed most recently and are of great importance to a health care facility's financial viability. Hospitals or medical providers report coded data to third party payors, i.e., insurance companies, HMO's, Medicaid and Medicare for reimbursement of their expenses. The accuracy and validity of coding, then, directly impacts the revenues, as well as providing descriptions of the facility's health outcomes (7) through the gathering of data from patient records.

The literature describes coding as "transforming verbal descriptions of diseases, injuries, conditions, and procedures into numerical designations (codes)". In addition to the financial implications inherent in coding, it has enabled health care facilities and associated agencies to tabulate, store, and retrieve disease, injury, and procedure-related data (10).

Finally, coding for out-patient reimbursement purposes took on its greatest significance in 1983 with the passage of legislation requiring all Medicare visits to have some form of code attached to the encounter. Then, following legislation enacted the prospective payment system (PPS) utilizing diagnostic-related groups (DRGs- an inpatient classification scheme that categorizes patient who share similar clinical and cost characteristics) (10). DRGs are established based on the ICD-9-CM codes, reflecting the verbal descriptions of disease, etc. or diagnoses and procedures, that the coder is able to abstract from the medical record.

From the humble beginnings of AHIMA in 1928, the profession, and in particular, coding, has demanded increased education to produce qualified professionals with abilities in technology and computing convergence.

DISCUSSION

The current environment for coding is computer-based technology. Therefore, the main requirement for learning is a setting in which the appropriate tools are utilized. These must allow the student to transition smoothly from learning, to actual practice in which highly sophisticated information systems are extant. The tools must have the ability to present the student with realistic scenarios that he or she will encounter in the health care work place.

These situations should also lessen the barriers of utilizing advanced technology when the student begins his or her career.

In the classroom setting, utilizing remote server capabilities with internet-ready laptops, is demonstrating success as the type of learning environment described above. The paradigm common in the research literature defines computer information systems as being composed of the following: 1) hardware, 2) software, 3) data, 4) procedures, 5) personnel (end-user) and 6) communication links (in this particular case, Internet). These aforementioned components will be the framework to describe the learning setting. Hardware includes a wireless mobile computer lab containing 24 laptops providing portability enabling the instructor to set the learning environment anywhere. This provides flexibility for instruction due to the interaction with the students. Software utilized for this type of training is proprietary and resides on an Internet website. Usage is based on site licensing. However, the student may access the lessons anywhere there are Internet capabilities. The software provides self-paced instruction and self- assessment capabilities as feedback to the student on his or her progress. Hyperlinks give the required flexibility to enhance learning. There is a variety of HIT subjects available, including basic and advanced training to perform ICD-9-CM coding in particular. Because of the legislative nature of the subject involving Federal reimbursement of health care, the software provider annually upgrades the content to maintain the accuracy of the education. The software contains enough data to replicate actual ICD-9-CM coding scenarios. The data is embedded in the software. Procedures (instructions for use of the software) are self-explanatory. The end-user, in this case, the students, will have the ability to perform coding duties similar to those presented in actual practice. The high-learning institution is located at Stage IV: Integration, therefore, the facilities provide radio wave wireless connection that allows the use of portable labs, ergo the use of the Internet which increases flexibility, accessibility, efficiency of learning and lowers cost.

Proficiency in coding is determined through the instructor's presenting scenarios in the form of case studies in which the student utilizes knowledge gained through the use of the software. This presents the student with the application of critical thinking to assign the appropriate coding nomenclature as would be presented in a real-life situation. Grading is assigned based on this ability to apply knowledge with skill and accuracy. The ultimate goal is for them to be able to pass one of AHIMA's coding examinations for certification in this field.

The latter makes the learning environment more realistic and creates the necessary motivation for the students' enhancement. Anonymous feedback from students involved in this type of e-learning indicates their appreciation of the use of advanced information technology and their feelings of adequacy when employed in the HIM field. The health care community is also eager to embrace his type of training for those already employed.

For the success of this type of training and educating, questions for the HIM educator and provider of software applications include, but are not limited to the following:

- How to keep continually updated and upgraded in the realm of HIM and health care in general due to the great fluctuation inherent therein?
- How to adequately provide a smooth transition from the educational environment to the workplace?
- How to network effectively within the community to encourage both students and health care employees to take advantage of educational resources pertaining to advanced computing technologies?

REFERENCES

1. *About AHIMA.* (n.d.). Retrieved September 25, 2002, from http://www.ahima.org/about/main.htm

2. *AHIMA Careers.* (n.d.). Retrieved September 25, 2002, from http://www.ahima.org/careers/growth01.html.

3. AHIMA History. *(n.d.). Retrieved September 25, 2002 from http://www.ahima.org/about/history.htm*

4. Anderson, D. & R. C. Reid (1998). A study of the growth of information system function and the Nolan development model. *Journal of Computer Information Systems*, Vol. XXXVIII, No. 3, Spring, 44-52.

5. Bond, J. (1997). *Public Policy for the Private Sector.* The World Bank Group, Note No. 118, July.

6. Carr, H. H. & C. A. Snyder. (1997). *The Management of Telecommunications: Business Solutions to Business Problems.* New York: Irwin McGraw Hill, 680-682.

7. Certified coding specialist (CCS). (n.d.). Retrieved September 25, 2002, from http://www.ahima.org/certification/cert.cred.html

8. Commission on Accreditation of Allied Health Education Programs. (1997). *Standards and guidelines for an accredited educational program for the health information technician & health information administrator.*

9. Levine, L. (2002). Using technology to enhance the classroom environment. *T. H. E. Journal*, Vol. 29, Issue 6, 16-18

10. Rogers, V. L. (1998). *Applying inpatient coding skills under prospective payment.* Chicago: American Health Information Management Association, 2.

11. Wager, K. A. & F. W. Lee. (2002). Introduction to healthcare information systems. In M. Johns (Ed.), *Health Information Management Technology: An Applied Approach* (pp. 558-588). Chicago: AHIMA.

12. *What are the credentials?* (n.d.). Retrieved September 25, 2002 from http://www.ahima.org/certification/cert.cred.html

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