

HEALTH INFORMATION MANAGEMENT REIMAGINED: ASSESSING CURRENT PROFESSIONAL SKILLS AND INDUSTRY DEMAND

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Health Information Management Reimagined: Assessing Current Professional Skills and Industry Demand

By Kim Beesley, MHIM, RHIA; Alexander McLeod, Ph.D.; Barbara Hewitt, PhD; and Jackie Moczygemba, MBA, RHIA, CCS, FAHIMA

Abstract

This paper examines the changes affecting the health information management (HIM) professional skill set and industry demand to determine differences affecting practitioners. As the industry continues to experience technological innovation, the responsibilities of the HIM professional are in flux, affecting the required skill set of the changing environment. This research used the American Health Information Management Association salary survey and current job postings to determine whether the workforce has experienced deskilling and whether a theory-practice-gap exists. It also assesses if industry competencies align with the Health Information Management Reimagined perspectives. The results indicate that the workforce has not experienced deskilling, that a theory-practice gap does exist, and that Health Information Management Reimagined is aligned with industry needs.

Keywords: Health information management, HIMR, HIM, skills, workforce, competencies

Introduction

Health information management (HIM) continues its transformation toward health informatics, big data, and analytics while traditional competencies such as coding are waning as computer-assisted coding moves to the forefront of healthcare information systems.¹ Compounding this skill shift is the adoption of the electronic health record, allowing data to be digitally and globally collected on cheaper, more efficient computers, and software capable of handling big data and predictive analytics.² The demand for HIM professionals capable of modeling and performing predictive analytics is growing exponentially, forcing many organizations to scramble to find suitably skilled personnel.³ This skills shortage provides insight into the changing “supply-side” of the Health Information Management Reimagined equation, but offers little understanding of the “demand-side” of the equation.^{4,5} This research assesses the HIM career skill set, examining current industry needs to evaluate the alignment of skills, knowledge, and abilities with Health Information Management Reimagined (HIMR).

Background

Transitioning from paper medical records to electronic medical records has had a remarkable impact on Health Information Management departments, causing organizations to downsize and eliminate positions based on needed skills.⁶ The dominance of paper medical records has declined

as healthcare organizations adopt electronic healthcare records mandated in the Health Information Technology for Economic and Clinical Health Act (HITECH).⁷ Federal meaningful use requirements have also caused coding and transcription positions to be outsourced while creating new roles and competencies related to informatics, data analytics, information governance, clinical documentation improvement, and big data.^{8,9} Technological change continues to be fueled by new system development and organizational consolidations.¹⁰ While traditional jobs related to billing and coding are still available, less popular careers are evolving, which require skills, knowledge, and abilities such as interface analyst, business intelligence analyst, informatics specialist, data architect, and clinical taxonomy roles.

According to Adler-Milstein and Jha⁷, the HITECH Act mandated hospitals to adopt EHR systems. It also included provisions to ensure workforce training in the use of EHR systems, but the implementation of this training remains in question. The Commission on Certification for Health Informatics and Information Management (CCHIM) surveyed 834 HIM respondents, finding that 86 percent recognized the need for education in health data analytics, demonstrating the need for education and redefinition of HIM professional duties.¹¹ Predictive analytics education is important in helping healthcare professionals make better decisions in both financial and clinical outcomes.³ With these opportunities come additional challenges, such as incomplete data and insufficient technology, as seen in [Figure 1](#).¹²

HIM professionals are aware of the challenges of incomplete records, as evidenced by the prevalence of clinical documentation improvement programs. The healthcare industry has been slow to implement predictive analytics, but as more organizations adopt analytical tools to support decision making, the need for individuals with these skills becomes apparent. Savage¹³ suggests that analytical workers are needed in clinical, financial, and operational areas, as shown in [Figure 2](#).

To be successful, an HIM professional will have to acquire new skills, continue their education, and obtain necessary new credentials to meet the modern technological changes occurring in healthcare organizations. The need for HIM professionals in traditional roles will decrease as more professionals will be needed in leadership, teaching, and informatics roles. The American Health Information Management Association (AHIMA) has recognized the need to create pathways that support its members preparing for roles in informatics, analytics, and consumer engagement. Thus, a shift to more technical careers and advancements in education is necessary to meet the industry's changing demands.¹¹ HIMR provides a pathway to successfully update workforce skills, but are those skills demanded by industry today?

The HIM professional's roles and skill set must align with industry needs.⁴ Traditional HIM roles will evolve from director, privacy officers, coding staff, and release of information professionals to more modern roles involving big data, statistical analysis, project management, and data analytics.⁸ Moreover, these roles will support revenue cycle management, information technology, electronic health records data management and user support, quality, compliance, health information exchange, and clinical documentation integrity.¹⁴ The AHIMA Salary Snapshot,¹⁵ shows the effects of changing skill sets in terms of salary outcomes, as seen below in **Figure 3**.

Some roles that could become obsolete or change due to technological change include file clerks, coders, transcriptionists, and clerical staff. Clerical positions could likely transition into a more electronic data analyst position requiring more education and information literacy. While some positions will disappear, other positions will become more important or evolve into more technologically demanding roles.

Competing for the new evolving HIM professional roles will require a bachelor's and master's degree with robust statistics, quality, and electronic data management. Big data, analytics, and informatics competencies will be among the strongest industry demands for HIM professionals in the coming years.¹⁶ AHIMA's Salary Snapshot collected salary data over several years from 2002 to 2017, using both qualitative and quantitative measures to identify expected competencies. The results of the 2016 AHIMA survey are available on the organization's website at http://www.ahima.org/downloads/2016_salary_snapshot_final_2.pdf. The findings from the survey demonstrate that role changes are occurring for HIM professionals. For example, data scientists who can use Python or develop an algorithm in Hadoop are needed to analyze data and communicate the results.¹⁷

Competencies represent skills used in jobs and for HIM professionals, these competencies are required and verified via the Commission on Accreditation for Health Informatics and Information Management (CAHIIM). Because these skills can be aggregated around job families, AHIMA has organized the groupings based on its most current survey that includes job family, average salary, and example job titles. Table 1 shows the job families, as described in the AHIMA salary survey.

Table 1

The HIMR initiative was developed to help transform HIM and position professionals to be aware of future job skills, competencies, and role specialties. The initiative recommends three categories, including advanced education, specialized education, and evidence-based practice. HIMR success depends on how the profession responds to the required changes in the delivery of healthcare and the competencies needed to support those changes. The focus is on educational aspects of skills, abilities, and leadership, streamlining education pathways and advancement at the entry level.⁹

The HIMR framework supports transformation of the HIM field into a strong and vibrant profession. AHIMA tasked the Council for Excellence in Education (CEE) with developing a new educational strategy to reexamine current roles, identify future roles, and embrace the opportunities in a rapidly changing profession by instilling processes that build on the strong foundation of skills and knowledge. This venture will introduce new career pathways and academic curriculum to meet future workforce needs, including informatics, big data, analytics, and information governance.

Employers in the HIMR era will look for reputable certifications to guarantee those they are hiring are capable of meeting industry demand.¹⁸ Both public and private facilities are faced with the dilemma of identifying competent knowledge and skills regardless of whether those knowledge and skills were learned at an institute of higher education or on the job.

The HIMR initiative produced recommendations for four main areas:

1. AHIMA proposes to increase the number of members with graduate degrees by 20 percent within the next 10 years.
2. Ensure research is available in both the public and private health organizations to support health informatics and information management skills.
3. Revise HIM curricula to add specialized skills across the degree levels of HIM education, including associate's, bachelor's, and master's degrees to meet the needs of the workforce.
4. Registered Health Information Administrator (RHIA) will be recognized as the standard for HIM generalist practice, and the Registered Health Information Technician (RHIT) (+ specialty) will be the technical level of practice.¹⁸

The HIMR recommendations provide a road map for future HIM professional success. Moreover, the educational competencies are inherent in data analytics, entrepreneurship, patient advocacy, and information governance to address evolving industry demand.

Research Questions

"HIMR is an AHIMA initiative to transform Health Information Management and position professionals for the future".⁹ While limited, reliable data representing workforce competency requirements exists, the development of the internet and job posting websites provides data on industry demands.¹⁹ Since AHIMA introduced the HIMR initiative almost three years ago, HIM professionals might benefit from an analysis of career transition data regarding skill sets necessary in today's changing environment.¹⁵ Therefore, to investigate the alignment of HIM skills, knowledge, and abilities with industry needs, the following research questions were considered.

RQ1 – Has there been a decline in skills of HIM professionals over time?

RQ2 – Does a theory-practice gap exist between workforce skills and industry competency

demands?

RQ3 – How are the required skills changing about technological change, innovation, competitiveness, and education?

Hypotheses

Several theories exist that are related to 1) workers' skills and the level of education including Deskilling Theory,²⁰ 2) the difficulties of training workers in theory and moving them to practice known as Theory-Practice Gap,^{21, 22} and 3) workers motivations to obtain education and training as an economic driver in Human Capital Theory.²³

According to Braverman²⁰, new technologies often negatively impact a profession by causing the "deskilling of workers." With the increased reliance on technology in healthcare²⁴, the healthcare industry is experiencing a demand for skill-based employees, which runs counter to deskilling theory. Attewell²⁵ argues a "countertendency to deskilling" occurs when technology is adopted as observed in an insurance company where skilled workers assessed the validity of claims and unskilled workers performed data entry.

To test the deskilling theory, this study considers educational attainment to measure how new technologies are affecting HIM skills. While Handel²⁶ noted that using educational attainment to test deskilling was imperfect and other measures may perform better, educational attainment is readily available, as it is captured regularly in the AHIMA salary survey. To test if deskilling occurred, the following hypothesis is proposed.

Hypothesis 1: Deskilling will not occur in HIM professions from 2002 to 2016.

In addition to deskilling, Greenway, Butt and Walthall²⁷ suggested that theoretical knowledge does not meet practice needs as proposed in the Theory-Practice Gap. This theory has recently been studied in dental education,²⁸ nursing education,²⁹ professional sales,³⁰ teacher education,³¹ physical therapy,³² and other professions. Theory-Practice Gap is routinely mentioned in literature often associated with "bridging the gap," "closing the gap," or "avoiding the gap."

In this work, Theory-Practice Gap will be used to examine differences between existing workforce skills (theory) and industry demands (practice) and provide insight into the formation of this gap with regards to HIM professionals. Given the HIMR initiative, gaps may exist between education in HIM and industry demand. This study compares HIMR prescribed competencies with current industry needs to determine if a Theory-Practice Gap is present as proposed in Hypothesis 2.

Hypothesis 2: A Theory-Practice Gap exists between workforce skills and industry needs.

Another influential theory related to education and workplace skills is the Human Capital Theory.³³ Economic depictions of workforce transformation have included terms such as technological change, innovation, competitiveness, and education.³⁴ Earlier economic descriptions failed to consider education in the skilled worker equation.³⁵ In modern Human Capital Theory, education increases earnings and adds to a person's quality of life as investments in human capital.³⁴ In addition, professional certifications can also indicate specialty training and education obtained by workers.³⁶

HIMR suggested traditional roles in coding and record processing will decline while technological improvements will drive new roles in data analytics, information governance, and auditing, requiring additional human capital investment.⁴ By comparing skill sets, this study will consider whether HIMR human capital investment is needed to meet current industry needs that are shifting from coding and records administration to compliance, analytics, and informatics. The following hypothesis was created to examine human capital comparisons.

Hypothesis 3: Industry competencies will align with HIMR perspectives on technology, innovation, competitiveness, and education affecting traditional HIM roles.

Methodology

This research uses several approaches to evaluate the research questions and hypotheses. To examine the question regarding "deskilling", AHIMA annual salary surveys from 2002 to 2016 were obtained to compare salaries over time.¹⁵ Historically, the most frequently used measure of worker skill is education level. To evaluate the research question considering the theory-practice skill gap, a granular review and analysis of job board posts identified the current practice skills required by the healthcare industry, which were then compared to the current Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) educational competencies as adopted by AHIMA.¹⁵ To evaluate aspects of Human Capital Theory, the researchers compared differences between prescribed education and current practice needs identified from job postings on the major online job boards.

Procedures

To test hypothesis one concerning the deskilling of workers, salaries over time were compared based on educational attainment level between 2002 to 2016 using a salary snapshot survey from AHIMA.¹⁵ The level of education included high school, associate's, bachelor's, and master's degrees obtained.

To test hypothesis two and evaluate the practice side of Theory-Practice Gap, the researchers

searched major occupational job boards, including careerbuilder.com, monster.com, glassdoor.com, LinkedIn, indeed.com, AHIMA.org, and AAPC.com for job listings that included the term "health information management," in the job title between August and November of 2018. A total of 200 active job listings were included in the analysis. The data was reviewed to eliminate duplicate job announcements prior to analysis. The attributes in the analysis included job title, experience and skills, software skills, salary, and other job requirements. To measure the "Theory" portion of TPG, the AHIMA surveys of salaries and job skills were analyzed for the years 2003-2016.

To analyze data related to hypothesis three, the active job postings were coded to identify the different skills, certifications, competencies, and education. This data was aggregated to test alignment with HIMR perspectives on technological change, innovation, competitiveness, and education. AHIMA recently updated the educational requirements in 2018 to meet current and future workforce needs as described in the HIMR;³⁷ hence, the review used the standards from 2016.

Results

To test the deskilling hypothesis, educational attainment was analyzed over time to see if HIM professionals' level of degree increased or decreased. Using the AHIMA annual salary snapshot for selected years, the percentage of professionals with only a high school diploma, associate's degree, bachelor's degree, and master's degree, by year, were calculated as shown in Table 2.

Table 2

The results indicate a decrease in the professionals whose highest level of education was a high school diploma, stable for those at the Associates and the bachelor's levels, and an increase in those with a master's degree or higher. Compared to 2002, when 14 percent of HIM professionals had only attained a high school education, this number steadily decreased to only 2 percent in 2016. The percentage of HIM professionals holding an associate's or bachelor's degree dropped less than 1 percent over this 14-year period, indicating no significant deskilling occurred at the associate's or bachelor's degree level. At the master's level, a steady increase was observed over the fourteen years, from roughly 10 percent in 2002 to 14 percent in 2010 and 15 percent in 2016, as shown in

Figure 4.

A t-test was performed to determine whether the percent of people holding a high school diploma and associate's degree changed over time. The t-statistic was significant at the .05 level with $t_{(78)} = 3.073$, $p = .0015$. The result indicated the change between high school and the associate's degree was significant and that deskilling did not occur. **Figure 5** shows the percentage of high school versus associate degrees for comparative purposes.

A similar t-test was performed to determine whether there was a difference between the percent of people holding a bachelor's degree or a master's degree over time. The t-statistic comparing deskilling between the bachelor and master's degree was not significant at the .05 level with $t_{(97)} =$

0.093, $p=0.0176$. The result indicates that deskilling did not occur, and the level of educational attainment remained relatively constant for bachelor's degrees while increasing slightly for master's degrees. **Figure 6** shows the results in a comparison of the bachelor's degree to the master's degree.

We then compared industry demand to HIMR skills to determine if a Theory-Practice gap existed. First, a compilation of industry needs data was extracted from major occupational job boards between August and November 2018. The most popular job listings were coding and billing related (35 percent of all job listings), indicating that Coding and Billing remain important to organizations hiring HIM professionals today. Other predominant job listings included Medical Record Administration at 26 percent, Informatics/Data Analytics at 22 percent, and 6 percent each for Compliance/Risk Management, IT/Infrastructure, and Education/Communications, as shown in **Figure 7**.

Following the industry needs analysis, a similar analysis of the 2016 AHIMA job survey data was used to identify positions that HIM professionals currently hold. According to the AHIMA survey, more than half (53 percent) of the professionals work in Coding and Billing followed, by Operations/Medical Records Administration at 25 percent, Compliance/Risk Management and Education/Communications at 7 percent each, and Informatics/Data Analytics and IT/Infrastructure at 5 percent and 3 percent, respectively. Categorical examples can be viewed using the interactive AHIMA career map (25). **Figure 8** shows these results.

Comparing the 2016 AHIMA job survey to the current industry needs jobs listings indicates similarity across four job families: Education/Communication, IT/Infrastructure, Compliance/Risk Management, and Medical Records Administration. Major differences exist in the Coding/Billing and Informatics/Data Analytics job families. One finding is that an 18 percent difference exists between practitioners with Coding/Billing competencies than industry demands. Thus, a decrease in demand for these skills is occurring. In the case of Informatics/Data Analytics, the data suggests an undersupply with 5 percent of professionals currently holding these skills and the industry demanding a 22 percent or a 17 percent increase in demand for Informatics/Data Analytics capabilities. These job family differences suggest a Theory-Practice gap does exist.

To analyze if skills are changing regarding technological change, innovation, competitiveness, and education, 200 job postings were gathered, and data was coded to align with the AHIMA job survey categories. Percentages were calculated for each job family category based on four levels: Entry Level, Mid-Level, Advanced, and Master. Percentages were also calculated by category, providing insight into the relationship between technological change, innovation, competitiveness, and education. Greater skill level and education would be required to support more technical, innovative, and competitive categories as shown in the AHIMA Career Map.³⁸

Positions listed for Operations – Medical Records Administration and Revenue Cycle Management

aligned with lower level technical skills and required a high school diploma or associate's degree, as seen in Table 3. Most of the job listings for Informatics/Data Analytics and Education/Communication positions required advanced technical, innovative, or competitive skills with either a bachelor's or master's degree. Privacy and security roles were represented across multiple categories, including Compliance/Risk Management and IT/Infrastructure. Data from the AHIMA Salary Survey was analyzed using the same categories.¹⁵ Currently, 83 percent of those working are in positions that require low technical and less innovative skills such as Medical Records Administration or Coding and Billing. Only 6 percent of participants held skills related to higher technology and innovation work of Informatics/Data Analytics. Table 3 also shows the percentage by job category.

[Table 3](#)

A similar mapping was created for the job listings yielding a different perspective. As seen in Table 4, 74 percent of the job postings were for Medical Records Administration and Coding and Billing. There is a notable shift in the industry whereby fewer individuals with low tech/low innovation skills are needed than the AHIMA Survey.¹⁵ In addition, a higher level of technology and innovation is needed, with Informatics/Data Analytics at 13 percent, more than twice the percentage as those working in the industry, according to the AHIMA study.

[Table 4](#)

Discussion

This study compared current HIM skills and education to industry needs. Results show that HIM administrative jobs and information technology jobs are transforming to meet industry needs. More individuals will be needed to fill positions in leadership, governance, and informatics. Considering the identified industry demands, there will be a shift towards the more technical aspects of HIM, driving the need for more education.

Technology continues to introduce role changes. For example, many HIM professionals will enter coding related positions today, only to shift to an auditing role in the future. This transition does not mean that coding will no longer be necessary, but it will require higher skill levels focused on advances such as auditing, reimbursement, or case finding. With AHIMA focusing on educational changes, the future HIM professional will be in a better place. These study results align with the HIMR initiative.

In the past, having new employees with no training or certification function in an entry-level position might have been acceptable. AHIMA suggests increasing educational requirements so that the individual can function in more definitive roles such as auditing or billing. This research supports this assessment and the gap between workforce skills and what the industry requires. AHIMA provides opportunities to help fill gaps for those individuals that need additional training. Educated individuals

with no actual work experience may have to obtain additional credentials, such as Certified Coding Specialist (CCS) or Certified Professional Coder (CPC), depending on the needs of the facility. Conversely, individuals who have years of work experience and minimal education may have to consider obtaining additional certification.

Considering the abundant amount of data available from electronic health record systems, job announcements are starting to include more advanced departments that are relying heavily on data analytics and information technology. Many HIM professionals may have experience to help them get into these positions but may lack the educational background to support software use and analysis.

Professional organizations such as AHIMA must make changes to their educational requirements to help these professionals attain the skill set required by the industry. The educational levels noted in this study show that the associate's and bachelor's degrees are still the most sought-after degrees in terms of numbers. AHIMA's forward-looking proposal will have to provide competencies for this group to meet workforce needs. The changes AHIMA makes in certification requirements will be the standard for most of the HIM workforce for future jobs. It is noteworthy to add that other organizations such as AAPC offer similar certifications around coding and compliance.

Conclusion

In summary, the HIM profession is changing. Today, professionals operate not only in the HIM department of hospitals but also in many other health care settings. As healthcare and the industry evolve, skills and abilities must change as well. The shift towards higher-level skill sets to meet industry demand may require more education. Currently, many HIM professionals operate in record administration, coding, and billing positions. If job listings are any indication, individuals with lower levels of education and skills should be aware of the industry's expanding needs.

Author Biographies

Kim Beesley, MHIM, RHIA, (kbeesley2002@gmail.com) is an adjunct professor for the Health Information Management Department at Collin College and an Inpatient and Outpatient auditor.

Alexander McLeod, Ph.D. (am@txstate.edu) associate professor and department chair of the Health Information Management Department at Texas State University.

Barbara Hewitt, PhD (Bh05@txstate.edu) is an assistant professor of Health Information Management in the College of Health Professions at the Texas State University in San Marcos, TX.

Jackie Moczygamba, MBA, RHIA, CCS, FAHIMA (Jm38@txstate.edu) is an associate professor of Health Information Management in the College of Health Professions at the Texas State University in San Marcos, TX.

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Table 1. Health Information Management Job Families³⁹

HIM Professionals 2016 Survey Job Family

REVENUE CYCLE MANAGEMENT/CODING AND BILLING JOB FAMILY

Coding Professional, Revenue Cycle Manager, Clinical Documentation Improvement Specialist, HIM Revenue Cycle Auditor, Benefits Coordinator, Collections Clerk, and more

OPERATIONS/MEDICAL RECORD ADMINISTRATION JOB FAMILY

Health Information Technician, Meaningful Use Specialist, Patient or Cancer Registrar, Health Information Management Clerk or Manager, Director of HIM, and more

INFORMATICS/DATA ANALYTICS JOB FAMILY

Data Integrity Analyst, Clinical Informatics Coordinator, Project Manager, Research and Development Scientist, Director of Clinical Informatics, and more

EDUCATION/COMMUNICATION JOB FAMILY

HIM Professor, Health Sciences Information Librarian, ICD-10 Educator, Program Director, or Department Chair

COMPLIANCE/RISK ASSESSMENT JOB FAMILY

Credentialing Specialist, Quality Improvement Analyst, Compliance Auditor, Privacy Officer, Information Security Manager, Director of Risk Management, and more

IT/INFRASTRUCTURE JOB FAMILY

Implementation Support Specialist, Data Quality Manager, System Analyst, Data Architect, Chief Technology Officer, and more

Table 2. Educational Attainment *

Highest Degree	High School	Associates	Bachelors	Masters
2002	14%	38%	38%	10%
2003	13%	40%	38%	10%
2004	3%	33%	39%	11%
2006	4%	34%	35%	11%
2010	4%	42%	40%	14%
2016	2%	37%	37%	15%

Note: Data was captured for only the years shown.

Table 3. Percentage of Job Postings by Skill Level and Education

Job Category	Entry-level High School Degree	Mid-level Associate Degree	Advanced Bachelor Degree	Master Master Degree	Category Total
Operations Medical Records Administration	7.2%	51.8%	8.2%	8.2%	75.3%
Revenue Cycle Management Coding and Billing	0.0%	8.4	0.5%	0.0%	8.9%
IT/Infrastructure	0.0%	6.0%	0.2%	0.0%	6.2%
Informatics/Data Analytics	0.0%	1.9%	4.1%	0.0%	6.0%
Education/Communication	0.0%	0.0%	1.9%	0.5%	2.4%
Compliance/Risk Management	0.2%	0.2%	0.7%	0.0%	1.2%
Skill Level Total	7.4%	68.4%	15.6%	8.6%	100%

Table 4. Mappings to Job Listings

Job Category	Percent
Operations Medical Records Administration	41%
Revenue Cycle Management Coding and Billing	33%
Informatics / Data Analysis	13%
Compliance / Risk Management	5%
Education / Communication	5%
IT / Infrastructure	4%
Skill Level Total	100%

Figure 1. A Healthcare Organization's Biggest Obstacle is....³

Figure 2. Changing Roles of HIM Professionals³

Figure 3. AHIMA Salary Snapshot¹⁵

Figure 4. Educational Attainment ³⁷

Figure 5. Percent of High School to Associate Educational Attainment

Figure 6. Percent of Bachelor and Master Educational Attainment

Figure 7 - Industry Needs from Job Listings

Figure 8 - AHIMA Job Survey Results

There are no comments yet.