

# Gap Analysis for 2014 Curriculum Competencies

*by Jennifer Peterson, MS, RHIA, CTR*

## Abstract

The newly approved and released health information management (HIM) curriculum competencies defined by the AHIMA Foundation provide requirements needed for today's emerging professionals to be successful in the HIM field. However, these competencies provide a challenge for those in HIM education in terms of implementation due to the number of significant changes and the lead time required for curricular changes at the university level. Illinois State University undertook a gap analysis to assess current status and future needs as a first step in implementation of the new competencies. The analysis showed that 34 percent of the new competencies were not met in the current curriculum. These findings indicated the need for a change in course curriculum and the addition of at least one new course. In addition, the findings allowed for an in-depth analysis of current curriculum and development of a stronger curriculum throughout the program.

**Keywords:** curriculum competencies, gap analysis, curriculum, accreditation, health information management, medical informatics, evaluation, competency-based education

## Introduction

Health information management (HIM) baccalaureate degree programs must be accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) in order for their graduates to be eligible to sit for the registered health information administrator (RHIA) certification examination. To be CAHIIM accredited, HIM programs must meet the curriculum requirements specified in the HIM curriculum competencies developed and approved by the AHIMA Foundation's Council for Excellence in Education (CEE). Specifically, according to the CAHIIM HIM 2012 baccalaureate degree standards:

The curriculum syllabi and course content must ensure concise and adequate coverage of the AHIMA HIM entry-level curriculum competencies and knowledge clusters for baccalaureate degree programs. Each course syllabus must be evaluated against the required knowledge clusters, and demonstrate learning progression to achieve the stated entry-level curriculum competencies.<sup>1</sup>

To meet the changing needs of the HIM field and healthcare in general, the CEE periodically updates the curriculum competencies and knowledge clusters. Current CAHIIM accreditation is based on the curriculum competencies that were released in 2011. However, the CEE recently released the 2014 version of new curriculum competencies and curricular considerations,<sup>2</sup> which CAHIIM requires that programs implement by 2017. With all the changes in the HIM field, these competencies understandably include significant changes from the 2011 competencies. While these changes are needed to adequately

prepare students for work in the industry, they present challenges to those in academia. Implementation of such changes can include changes in course material or assessments, revision of program curricula, or even development of new courses.

## **Background**

One way many college and university programs have assessed compliance with curriculum standards or requirements is through the use of gap analysis. The CEE provides HIM educators with the basic tools to complete a gap analysis through the competency-based curriculum requirements. These competencies allow a natural progression of review and assessment through curriculum mapping and gap analysis. Gap analysis can be used in education, as well as other settings, to determine the difference between “what is” and “what should be.” Gap analysis is a familiar concept in performance improvement, and many have used it in the professional setting. The literature points to the value of gap analysis in education through the assessment of curriculum alignment with standards or requirements. Published reports have documented the use of gap analysis in assessing curricula in a variety of educational settings, ranging from curriculum review in a single undergraduate nursing program, to student or alumni surveys, to a national gap analysis review assessing more than 200 graduate programs’ curricula in biomedical informatics. Fater, who completed a single program gap analysis, points out that “gap analysis is [particularly] useful when the desired outcomes or objectives are known,”<sup>3</sup> as in the case of nursing core competencies or required HIM curriculum competencies. Gap analysis allows an objective measurement of the gaps between the “specified level of service and the service actually delivered.”<sup>4</sup> In addition, “gap analysis has many benefits . . . [such as] providing a basis for comparison or improvement . . . a systematic process of evaluation . . . [and] a quantitative basis for analysis.”<sup>5</sup>

Gap analysis frequently starts with standard curricular or educational requirements. The CEE provides HIM educators with competency-based curriculum requirements. Competency-based curriculum has many advantages in educational programs that require specialized skills or knowledge as well as skills or knowledge that will be assessed through certification or licensing processes. Specialties such as nursing, pharmacy, information technology (IT), nuclear technology, biomedical informatics, and HIM fall into this category. Competency-based curriculum requirements in these areas allow for “standardizing education within the profession. To advance the field, a common ground has to be established among all [educational] programs.”<sup>6</sup> This common ground, these requirements, identify the skills and knowledge, as well as the level of skills or knowledge, that graduates of such programs need in order to be successful new professionals. The use of these required competencies also lends itself well to curriculum mapping and gap analysis.

These competency-based curriculum requirements can be used in curriculum mapping, or matching the requirements to specific courses within the educational program. Curriculum mapping “documents what is taught (learning objectives and course content), how it is taught (teaching methods and learning opportunities), when it is taught (timetabling and sequencing), and what is learned (learning outcomes and student assessment).”<sup>7</sup> Such mapping can be used to assess alignment with required standards, and “gaps, redundancies, or inconsistencies”<sup>8</sup> in the curriculum can then be identified. Curriculum mapping, while a complex process, can be invaluable in the “deconstructing and analyzing of the intended [or current] curriculum relative to the national [or required] educational outcomes . . . and competencies.”<sup>9</sup>

Competency-based curriculum requirements and curriculum mapping can easily lead to identification of gaps or differences between “what is” and “what should be,” or gap analysis. This process is “an effective method to determine deficiencies in knowledge and practice.”<sup>10</sup> Determination of such deficiencies can, in turn, lead to identification of needed areas of improvement. In addition, gap analysis can identify strengths and redundancies in the existing curriculum. “It essentially reveals areas of underpreparedness and overpreparedness.”<sup>11</sup> A review of these deficiencies, strengths, and redundancies can lead to a clear understanding of where curriculum revisions should be made and where courses or material should be changed, added, or deleted. “The gap analysis provide[s] clear direction for curriculum revision.”<sup>12</sup>

Curriculum mapping and gap analysis are commonly used methods of addressing compliance with new curriculum competencies. Mammi and Ithnin used curriculum mapping of required competencies in an IT program to ensure a relevant program that met the curriculum requirements. They found that curriculum mapping allowed for addressing “any training needed for the faculty [and] . . . recommendation for curriculum enhancement. . . . [This resulted in] teaching materials and evaluation methods that will support the learning objectives and student performance of the competencies.”<sup>13</sup> Howard and Warwick support the use of gap analysis in a curriculum review of management accounting education. They state that gap analysis “is a method of curriculum evaluation and curriculum maintenance which is very supportive of the Decision-making model”<sup>14</sup> of curriculum development. This model of curriculum development allows for a “feedback and adjustment loop”<sup>15</sup> that leads to a curriculum that meets all requirements. As seen in the literature, the combination of curriculum mapping and gap analysis has been highly touted as an effective method of assessing curricular alignment with required existing or new competencies.

At Illinois State University, a gap analysis was completed as the first step in the process of implementation of the 2014 competencies by 2017. Illinois State University offers two baccalaureate degree sequences, a traditional on-campus sequence and a RHIT-to-RHIA online sequence. Both programs are a part of the CAHIM accreditation process at the university, and both must meet the required competencies. Currently, different faculty members teach in the on-campus sequence and the online sequence. Therefore, ongoing close collaboration is required to ensure consistency and standardization of course curricula, evaluations, and assessments. Faculty use the same books for similar courses, use shared course materials, and work together to ensure that both programs meet the required competencies. While the formats differ, in many cases the two sequences use identical learning tools and assessments. Both the on-campus and online sequences were included in this analysis. This evaluation enabled an examination of both the current status of the two sequences and the changes that will need to be put into place prior to 2017.

An analysis of the current curriculum against the 2014 version of the competencies was completed by the HIM faculty during the summer of 2014. This analysis included a review of all evaluations, including exams, assignments, case studies, and projects, against the competency content areas and the associated Bloom’s Taxonomy level of learning and evaluation. Both the on-campus and online sequences were reviewed. As expected, since many of the competencies were new, a number of gaps were found in the analysis. This formal gap analysis enabled the faculty to assess current status and the need for changes prior to 2017. Completing this analysis three years early provided ample time for the curricular or course changes needed to meet the new competencies.

## Gap Analysis Methodology

A formal gap analysis was completed by the Illinois State University HIM faculty during June 2014. In an in-depth review, the syllabi and course assessments and evaluations were compared to the 2014 competencies. Each faculty member reviewed his or her own course materials against the competencies as listed in the baccalaureate-level HIM curriculum map.<sup>16</sup> The AHIMA Curriculum Crosswalk,<sup>17</sup> which included the 2014 competencies with crosswalks to the 2011 map, was also used to aid in the analysis of the new competencies and existing curricular evaluations that would serve to meet these competencies. An Excel spreadsheet was used to track each competency, the associated Bloom’s Taxonomy level required, and the course activities that were used to support student learning of the specific competencies and the Bloom’s Taxonomy level at which these were evaluated. Following the individual review, a group review was completed in which overlapping areas and gaps were discussed to more fully ascertain current status and future needs. After this group review, a final spreadsheet was developed showing the competencies that were met under the existing curriculum and the competencies that were not. The resulting spreadsheet provided easy visualization of existing gaps. Color coding was used to indicate competencies that were met (green) and competencies that were not met (red) (see Figure 1). Removal of the competencies that were met in the existing curriculum (green) from the spreadsheet resulted in a list of the unmet competencies or gaps (see Figure 2).

## **Gap Analysis Results**

A number of gaps were found in the analysis, which was expected because significant changes were made in the new version of the competencies. While many of the new content areas were expected, the higher level of Bloom's Taxonomy required in some areas was somewhat of a surprise. The current curriculum evaluations and assessments did not meet the required Bloom's Taxonomy level for 35 of the 102 total 2014 competencies (34 percent). Of the 35 competencies that were not met, 18 (51 percent) were taught and evaluated at some level but did not meet the new 2014 Bloom's Taxonomy level required. The remaining 17 competencies were not taught or evaluated. Of these 17 competencies, 15 (88 percent) were completely new competencies that did not have an associated 2011 competency per the AHIMA Curriculum Crosswalk. Many of the areas where gaps were found were in health information technology, strategic planning, and project management. This finding was also expected because competencies were added in these areas.

## **Discussion**

The gap analysis and the completed spreadsheet provided a considerable amount of information for the faculty. Not only did the review emphasize the gaps that existed, but the analysis process allowed for fine-tuning of curriculum throughout the HIM program. Discovery of existing gaps also provided clear direction for moving forward.

The individual and group analysis process allowed for each faculty member to review his or her own courses, syllabi, and evaluations and assessments. This process allowed faculty to review exactly what competencies were being taught and at what level students were being evaluated, allowing for reflection on potential curricular changes to improve teaching and learning. The group analysis allowed faculty to work together to clearly see curricular overlaps and progressions both within and between courses. This cooperation helped enable faculty to reduce overlapping curriculum and at the same time tighten curricular progressions between courses so that students could learn pertinent topics in an appropriately progressive manner. These changes created a stronger curriculum throughout the program and also created a tighter correlation between the curriculum in the RHIA on-campus sequence and the RHIT-to-RHIA online sequence.

Identification of existing gaps allowed for an initial review of what broad changes might be needed to close those gaps. Because curricular changes at the university level require significant lead time, this early analysis provided the opportunity to evaluate the need for new or revised courses. The faculty determined overall changes they felt were needed, including a deletion in the courses required through the College of Business and the addition of courses within the HIM sequence. The added courses increased the emphasis on IT and strategic planning/project management. The faculty also noted that more technology will need to be added to courses throughout the curriculum through more extensive use of the student electronic health record system, the cancer registry abstracting system, Access database software, and other information systems.

These initial suggestions were taken to the HIM Advisory Committee for their suggestions and approval. The Advisory Committee agreed with the faculty recommendations and further emphasized the need they see in the field for these skills in new graduates. These initial suggestions faced no disagreement, as all committee members felt that new graduates will need these skills. The Advisory Committee's support further emphasized the need for the suggested changes to the program curriculum.

## **Conclusion**

The 2014 HIM competencies provide a new challenge to those in academia. However, the HIM profession must train students to be prepared for the workplaces they will enter. To accomplish these needed changes, faculty members have been called on to evaluate and modify courses and curricula in addition to training and teaching future HIM professionals. While three years are allotted for

implementation of these new competencies, many academic institutions require significant lead time for curricular changes, so identification of needed changes must be completed as soon as possible.

Gap analyses have been found to be an efficient and effective tool in the evaluation and assessment of curriculum against educational standards or requirements. The gap analysis completed in Illinois State University's HIM program provided an excellent opportunity to assess the current curriculum and curricular alignment with the new competencies. In addition, it allowed for fine-tuning of curriculum throughout the program and between the on-campus and online sequences. With the gap analysis completed, faculty at Illinois State University are now ready to move forward in implementing the needed changes to meet the competency requirements in 2017.

Jennifer Peterson, MS, RHIA, CTR, is an assistant professor in the Department of Health Sciences at Illinois State University in Normal, IL.

## Notes

1. Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). *HIM 2012 Baccalaureate Degree: Standards and Interpretations for Accreditation of Baccalaureate Degree Programs in Health Information Management*. CAHIIM, 2012, p. 9. Available at [http://www.cahiim.org/documents/2012\\_HIM\\_Bacc\\_Standrds.pdf](http://www.cahiim.org/documents/2012_HIM_Bacc_Standrds.pdf).
2. AHIMA Foundation. "Academic Competencies." Available at <http://www.ahimafoundation.org/education/curricula.aspx>.
3. Fater, Kerry H. "Gap Analysis: A Method to Assess Core Competency Development in the Curriculum." *Nursing Education Perspectives* 34, no. 2 (2013): 102.
4. Davis, Richard, Shekhar Misra, and Stuart van Auken. "A Gap Analysis Approach to Marketing Curriculum Assessment: A Study of Skills and Knowledge." *Journal of Marketing Education* 24, no. 3 (2002): 218.
5. Ibid., 219.
6. Bires, Angela Macci, et al. "Gap Analysis Survey: An Aid in Transitioning to Standardized Curricula for Nuclear Medicine Technology." *Journal of Nuclear Medicine Technology* 40, no. 3 (2012): 181.
7. Zelenitsky, Sheryl, et al. "Using Curriculum Mapping to Engage Faculty Members in the Analysis of a Pharmacy Program." *American Journal of Pharmaceutical Education* 78, no. 7 (2014): 1.
8. Ibid.
9. Ibid., 5.
10. Fater, Kerry H. "Gap Analysis: A Method to Assess Core Competency Development in the Curriculum." p. 102.
11. Davis, Richard, Shekhar Misra, and Stuart van Auken. "A Gap Analysis Approach to Marketing Curriculum Assessment: A Study of Skills and Knowledge." p. 223.
12. Fater, Kerry H. "Gap Analysis: A Method to Assess Core Competency Development in the Curriculum." p. 105.
13. Mammi, Hazinah K., and Norafida Ithnin. "Competency Based Education (CBE) for IT Security: Towards Bridging the Gap." *Proceedings of IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE) 2012*. Piscataway, NJ: Institute of Electrical and Electronics Engineers, 2012.
14. Howard, Anna, and Jon Warwick. "Exploring the Curriculum Gap: Some Thoughts on Management Accounting Education and Curriculum Design." *MSOR Connections* 13, no. 2 (2013): 57.
15. Ibid., p. 56.
16. Council for Excellence in Education. *Baccalaureate Level HIM Curriculum Map*. 2014. Available at [http://www.ahimafoundation.org/downloads/pdfs/2014%20Final%20Baccalaureate\\_Level1\\_Curriculum\\_Map.pdf](http://www.ahimafoundation.org/downloads/pdfs/2014%20Final%20Baccalaureate_Level1_Curriculum_Map.pdf).
17. Council for Excellence in Education. *Curriculum Crosswalk*. 2014. Available at <http://www.ahimafoundation.org/downloads/pdfs/2014%20Final%20Side-by-Side%20Crosswalk.pdf>.

**Figure 1**

Competencies and Bloom’s Taxonomy Levels Met in Existing Courses

Standard in I.A. Classification Systems Subdomain (Required Bloom’s Taxonomy Level)	Crosswalk	Courses	Bloom’s Level 1	Bloom’s Level 2	Bloom’s Level 3	Bloom’s Level 4	Bloom’s Level 5	Bloom’s Level 6
1. Evaluate, implement and manage electronic applications/systems for clinical classification and coding (5)	I.C.1, I.C.2	HSC 200, HSC 210, HSC 212, HSC 213, HSC 214, HSC 340, HSC 326		HSC 200 quizzes; HSC 210 scavenger hunts	HSC 213 coding	HSC 213 CDI coding; HSC 213 coding vs. analyzer		
2. Identify the functions and relationships between healthcare classification systems (3)	New	HSC 212, HSC 213, HSC 214			HSC 213, HSC 214 exams			
3. Map terminologies, vocabularies and classification systems (4)	New	HSC 212, HSC 213, HSC 214		HSC 213, HSC 214 exams				

*Note:* Yellow highlighting indicates a required Bloom’s Taxonomy level; green indicates that the competency is met with existing curriculum and evaluations; red indicates a competency not met. Course codes are as follows: HSC 200, Health Information Technology; HSC 210, Introduction to Health Information Management; HSC 212, Health Data Classification and Indexing Systems; HSC 213, Advanced Applications of Health Data Classifications and Indexing Systems; HSC 214, Healthcare Classification Systems and Reimbursement Processes; HSC 326, Healthcare Financial Management and Reimbursement Systems; and HSC 340, Trends in Health Care Delivery.

## Figure 2

### Removal of the Green (Met) Competencies Resulting in a List of Unmet Competencies or Gaps

Standard in I.A. Classification Systems Subdomain (Required Bloom's Taxonomy Level)	Crosswalk	Courses	Bloom's Level 1	Bloom's Level 2	Bloom's Level 3	Bloom's Level 4	Bloom's Level 5	Bloom's Level 6
1. Evaluate, implement and manage electronic applications/systems for clinical classification and coding (5)	I.C.1, I.C.2	HSC 200, HSC 210, HSC 212, HSC 213, HSC 214, HSC 340, HSC 326		HSC 200 quizzes; HSC 210 scavenger hunts	HSC 213 coding	HSC 213 CDI coding; HSC 213 coding vs. analyzer		
3. Map terminologies, vocabularies and classification systems (4)	New	HSC 212, HSC 213, HSC 214		HSC 213, HSC 214 exams				

*Note:* Course codes are as follows: HSC 200, Health Information Technology; HSC 210, Introduction to Health Information Management; HSC 212, Health Data Classification and Indexing Systems; HSC 213, Advanced Applications of Health Data Classifications and Indexing Systems; HSC 214, Healthcare Classification Systems and Reimbursement Processes; HSC 326, Healthcare Financial Management and Reimbursement Systems; and HSC 340, Trends in Health Care Delivery.