

## AHIMA KNOWLEDGE CLUSTERS for HEALTH INFORMATION MANAGEMENT

### Baccalaureate Degree Program

The knowledge clusters serve as the basis of curriculum development and learning objectives for academic programs in health information management. Bloom's Taxonomy is a classification system that provides a standard system of classifying the learning outcome level expected of a content area (knowledge cluster) within an educational experience and provides constructive help on building a curriculum. Bloom's Taxonomy helps to specify learning objectives so that it becomes easier to plan learning experiences and prepare evaluation devices.

Bloom's Taxonomy	Explanation
<b>1 = Knowledge: The remembering (or recalling) of appropriate, and previously learned information</b>	<ul style="list-style-type: none"> <li>• Observation &amp; recalling information</li> <li>• Classifications &amp; categories (of major ideas)</li> <li>• Knowledge of major principles and theories of subject matter</li> <li>• <i>Learning objectives phrasing:</i> list, define, describe, identify, match, select, label, reproduce, state</li> </ul>
<b>2 = Comprehension: Grasping the meaning of information</b>	<ul style="list-style-type: none"> <li>• Translate knowledge into a new context</li> <li>• Interpret facts, infer causes</li> <li>• Predict consequences</li> <li>• <i>Learning objectives phrasing:</i> convert, discuss, estimate, explain, generalize, give examples, restate in own words, summarize, distinguish, differentiate, interpret</li> </ul>
<b>3 = Application: Applying previously learned information to new situations to solve problems</b>	<ul style="list-style-type: none"> <li>• Identify the best answer</li> <li>• Solve problems using required skills or knowledge</li> <li>• Determine, discover, assess, articulate</li> <li>• <i>Learning objectives phrasing:</i> apply, demonstrate, calculate, solve, modify, change, classify, discover, solve, teach, utilize</li> </ul>
<b>4 = Analysis: Breaking down information and inferring (or finding evidence) to support divergent conclusions</b>	<ul style="list-style-type: none"> <li>• Break down, differentiate, discriminate</li> <li>• Recognize, infer, point out</li> <li>• Illustrate, outline, prioritize</li> <li>• <i>Learning objectives phrasing:</i> diagram, distinguish, organize parts, recognize hidden meanings, identify components, arrange, select, explain, infer, prioritize</li> </ul>
<b>5 = Synthesis: Applying prior knowledge and skills to create a new or original whole</b>	<ul style="list-style-type: none"> <li>• Use old ideas to create new ones</li> <li>• Predict and draw conclusions</li> <li>• Adapting divergent knowledge toward a new synthesis</li> <li>• <i>Learning objectives phrasing:</i> adapt, anticipate, collaborate, combine,</li> </ul>

	compare, compose, design, devise, facilitate, negotiate, reconstruct, reorganize, substitute, revise, design, invent
<b>6 = Evaluation: Judging the value of material based on personal values and opinions resulting in an end product</b>	<ul style="list-style-type: none"> <li>• Assess value of theories and presentations</li> <li>• Make choices based on reasoned argument</li> <li>• Verify the value of evidence presented</li> <li>• <i>Learning objectives phrasing:</i> Appraise, decide, recommend, convince, judge, support, conclude, critique, defend, reframe</li> </ul>

Knowledge Cluster Content
<b>Biomedical Sciences</b>
▪ Anatomy (3)
▪ Physiology (3)
▪ Medical Terminology (5)
▪ Pathophysiology (4)
▪ Pharmacotherapy (4)
<b>I.A. Health Data Structure, Content, and Standards</b>
1. Structure and use of health information (individual, comparative, aggregate) (5)
2. Health information media (paper, electronic/computer-based; e-health-personal, web-based) (5)
3. Type and content of health record (paper, electronic, computer-based, e-health-personal, web-based) (5)
4. Data quality assessment and integrity (5)
5. Secondary data sources (registries and indexes; databases – such as MEDPAR, NPDB, HCUP) (4)
6. Healthcare data sets (such as OASIS, HEDIS, DEEDS, UHDDS, UACDS, NEDSS, NMMFS) (4)
7. Health information archival systems (5)
8. National Healthcare Information Infrastructure (NHII) (5)
9. Data collection tools (such as forms; computer input screens; other health record documentation tools) (5)
<b>I.B. Healthcare Information Requirements and Standards</b>

<b>Knowledge Cluster Content</b>	
1.	Standards and regulations for documentation (such as JCAHO, CARF, COP, AAAHC, AOA) (5)
2.	Health information standards (such as HIPAA, ANSI, ASTM, LOINC, UMLS, MESH, Arden Syntax, HL-7) (5)
<b>I.C. Clinical Classification Systems</b>	
1.	Healthcare taxonomies, clinical vocabularies, terminologies/nomenclatures (such as ICD-9-CM, ICD-10, CPT, SNOMED-CT, DSM-IV) (4)
2.	Medicare Severity Diagnosis Related Groups (MS-DRGs) (4)
<b>I.D. Reimbursement Methodologies</b>	
1.	Clinical data and reimbursement management (5)
2.	Compliance strategies and reporting (e.g. National Correct Coding Initiative) (4)
3.	Chargemaster management (4)
4.	Casemix management (4)
5.	Audit process (such as compliance and reimbursement) (5)
6.	Payment systems (such as PPS, DRGs, APCs, RBRVS, RUGs) (4)
7.	Commercial, managed care and federal insurance plans (4)
<b>II.A. Healthcare Statistics, Biomedical Research and Quality Management – Healthcare Statistics and Research</b>	
1.	Statistical analysis on healthcare data (5)
2.	Descriptive statistics (such as means, standard deviations, frequencies, ranges, percentiles) (5)
3.	Inferential statistics (such as <i>t</i> -tests, ANOVAs, regression analysis, statistical process control, reliability, validity) (5)
4.	Vital statistics (5)
5.	Epidemiology (4)
6.	Data reporting and presentation techniques (5)
7.	Computerized statistical packages (5)
8.	Research design/methods (such as quantitative, qualitative, evaluative, outcomes) (5)
9.	Knowledge-based research techniques (such as Medline, CMS, libraries, web sites) (5)
10.	National guidelines regarding human subjects' research (4)
11.	Institutional review board process (IRB) (5)
12.	Research protocol data management (4)
<b>II.B. Quality Management and Performance Improvement</b>	

<b>Knowledge Cluster Content</b>	
1.	Quality assessment and management tools (such as benchmarking, ORYX, SQC) (5)
2.	Utilization and resource management (4)
3.	Risk Management (4)
4.	Disease management process (such as case management, critical paths) (4)
5.	Outcomes measurement (such as patient, customer satisfaction, disease-specific) (5)
<b>III.A. Health Services Organization and Delivery</b>	
1.	Organization of healthcare systems (5)
2.	Components and operation of healthcare organizations including e-health delivery (5)
3.	Accreditation standards (such as JCAHO, AOA, NCQA, CARF, CHAP, URAC) (5)
4.	Regulatory and licensure requirements (such as COP, state health departments) (5)
<b>III.B. Healthcare Privacy, Confidentiality, Legal and Ethical Issues</b>	
1.	Legislative and legal system (4)
2.	Privacy, confidentiality, security principles, policies and procedures (5)
3.	Health information laws, regulations, and standards (such as HIPAA, e-health, JCAHO, state laws) (5)
4.	Elements of compliance programs (5)
5.	Professional and practice related ethical issues (5)
<b>IV.A. Information Technology and Systems</b>	
1.	Computer concepts (hardware components, systems architectures, operating systems and languages, and software packages and tools) (4)
2.	Communications technologies (networks-LANS, WANS, VPNs; data interchange standards – NIST, HL-7) (4)
3.	Internet technologies (Intranet, web-based systems, standards – SGML, XML) (4)
4.	Data, information and file structures (data administration, data definitions, data dictionary, data modeling, data structures, data warehousing, database management systems) (5)
5.	Data storage and retrieval (storage media, query tools/applications, data mining, report design, search engines) (5)
6.	Data security (protection methods – physical, technical, managerial, risk assessment, audit and control program, contingency planning, data recovery, Internet, web-based, and e-Health security) (5)
<b>IV.B. Applied Health Informatics</b>	
1.	Leading development of health information resources and systems (4)

<b>Knowledge Cluster Content</b>	
2.	Brokering of information services (5)
3.	Clinical, business and specialty systems applications (administrative, clinical decision support systems, electronic health record and computer-based health record systems, nursing, ancillary service systems, patient numbering systems at master and enterprise levels) (5)
4.	Systems development (planning, analysis and design, customization, selection/procurement, implementation, integration, support, testing and evaluation, auditing and monitoring) (5)
5.	Human factors and user interface design (4)
6.	Systems Life Cycle (systems analysis, design, implementation, evaluation, and maintenance) (5)
<b>V.A. Organization and Management</b>	
1.	Principles of management (5)
2.	Negotiation techniques (4)
3.	Communication and interpersonal skills (5)
4.	Team/consensus building (5)
5.	Professional development for self and staff (4)
6.	Problem solving and decision making processes (5)
<b>VI.A. Human Resources Management</b>	
1.	Employment laws (4)
2.	Principles of human resources management (recruitment, supervision, retention, counseling, disciplinary action) (5)
3.	Workforce education and training (4)
4.	Performance standards (5)
<b>VI.B. Financial and Resource Management</b>	
1.	Healthcare finance (payer mix, bond rating, investment, capitalization) (3)
2.	Accounting principles (4)
3.	Budget process (capital and operating) (5)
4.	Cost/benefit analysis (5)
<b>VI.C. Strategic Planning and Organizational Development</b>	
1.	Strategic leadership, management and planning (4)
2.	Organizational behavior (4)
3.	Business building (entrepreneurialism – building your own business; entrepreneurialism – championing best practices, processes, services within your

<b>Knowledge Cluster Content</b>	
	organization) (3)
4.	Change management (4)
5.	Organizational assessment and benchmarking (4)
<b>VI.D. Project and Operations Management</b>	
1.	Process reengineering and work redesign (4)
2.	Project management (5)