National Job Analysis of the Hospital-based Certified Coding Specialist

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This article describes a job analysis performed to serve as the basis for documenting the content validity of the hospital-based certified coding specialist (CCS) examination for AHIMA. The purpose of this study was to determine and comprehensively describe the job of the hospital-based certified coding specialist and to evaluate this description through the ratings of job experts to define areas that should be assessed in a certification examination.

A job analysis committee was formed, and it prepared a comprehensive list of activities describing the job. These activities had been used in the development of previous CCS examinations. The survey was completed by a representative sample of individuals who hold the CCS credential throughout the US, and the rating results were reviewed by the advisory committee. These results were used to develop test specifications directly related to the significant activities that practitioners perform. These test specifications, empirically derived from a national job analysis study, represent a plan for development of a criterion-referenced examination. Each form of the exam is to contain the specified number of items, with representative sampling of tasks within each domain. Each test form developed to match these job-related specifications will have strong evidence of content validity.

Candidates who sit for the CCS examination can be assured the test is developed objectively through a peer review process and reflects relevant coding-related competencies.

Background

AHIMA's Council on Certification (COC) commissioned a national job analysis of the hospital-based certified coding specialist in 1997. The study was performed and summarized by Applied Measurement Professionals, Inc. (AMP), of Lenexa, KS.[1] The study involved the development of a job analysis survey, distribution of the survey to people involved in hospital-based coding, and an analysis of the responses. Information from the AMP final report accepted by the COC in December 1997 was condensed for this article.

AHIMA has offered the CCS exam since 1992. For the past five years, the examination was based on competencies developed by HIM professionals in collaboration with COC members and AHIMA staff. The purpose of conducting the job analysis at this time was to describe the CCS's job in sufficient detail to provide a sound basis for future CCS examinations.

Job Analysis Advisory Committee

A job analysis advisory committee, appointed by the COC, ensured that expert judgment was available to the AMP staff at every stage of the project. The committee included five HIM and clinical coding professionals.[2]

The Advisory Committee provided AMP with current information about the job of the CCS; assisted in the development of the inventory of activities; assisted in defining the criteria for selecting the sample of job experts who would complete the inventory; reviewed the final form of the inventory for completeness, relevance to the profession, appropriateness of language, and clarity of instructions; and reviewed the results of the survey and established job-related test specifications.

Definition of a Certified Coding Specialist

For the purpose of the survey, the advisory committee defined the hospital-based certified coding specialist:

The CCS is a professional whose coding expertise is focused towards a hospital environment. This individual demonstrates significant expertise with the ICD-9-CM coding system and the surgery section within the CPT coding system. The CCS is also an expert in health information documentation, data integrity and quality, anatomy, physiology, and pharmacology.

CCS Examination Competency Statements

The advisory committee reviewed the existing CCS examination competency statements. The committee found these statements, with some modifications, to be reasonable descriptions of the knowledge and skills of the CCS. An inventory of 27 job activities was organized into five major content categories. (See Table 1.)

table 1

Five major categories of CCS competency statements:
1. Data identification
2. Coding guidelines
3. Regulatory guidelines
4. Coding
5. Data quality

table 2

Considering both importance and frequency, how "significant" is this task to the effective performance of a hospital-based CCS?
4 = extremely significant
3 = quite significant
2 = moderately significant
1 = minimally significant
0 = not significant

Rating Scale

The committee selected the rating scale of "significance" to be used with the inventory. This scale is designed to allow the respondents to identify the tasks that are more significant to the achievement of the objectives of the hospital-based certified coding specialist job. AMP recommended the scale of "significance" as it had been used in previous national and state job analysis studies. (See Table 2.)

Pilot Survey

Prior to mailing the survey to the full sample of professionals, a draft survey was distributed. The purpose of the pilot survey was to determine if any significant activities were missing from the survey, if the directions were clear, and if the rating scale was easy to use and understand. Comments from the pilot study participants were reviewed, and minor changes were made prior to printing. Response Rate In an effort to obtain information from representative groups of respondents, 1000 surveys were mailed throughout the US. All 1000 of the respondents were identified by AHIMA as current holders of the CCS credential. The survey had an excellent rate of response. (See Table 3.)

Reliability of Responses

The respondents' rating displayed a high level of reliability. The interclass correlation statistical measure was used to estimate the reliability with which the respondents rated the CCS job activities. Separate reliability estimates were calculated for tasks grouped according to the major content categories.

The reliability coefficients for the significance rating scale were all above 0.99 across the five major content categories. Since the maximum reliability coefficient is represented by 1.00, and the mean coefficient for the significance scale was 0.99, this study can be considered to be highly reliable. That is, if a different sample was selected from the same population of respondents—that is, other CCS-credentialed individuals—the mean ratings would be essentially the same.

Survey Adequacy

After completing the survey, respondents were asked to indicate how well they thought the survey covered the significant tasks of the hospital-based certified coding specialist. Three choices were provided for response: "completely," "adequately," or "inadequately." 98.8 percent of the respondents who answered the question said the activity list in the survey instrument completely or adequately described the job of the hospital-based certified coding specialist.

Demographic Information

The demographic information section of the survey provided descriptive information about the 493 respondents who completed the survey. The data showed that the most typical respondent works in a hospital (90.7 percent), is located in the upper Midwest (22.5 percent), has more than 15 years experience (36.3 percent), holds the job title of coder (85.6 percent), holds an associate's degree (43.6 percent), obtained entry-level coding knowledge through an accredited HIT program, and holds an ART credential (72.4 percent).

table 3

Number of surveys mailed: 1000
Number of surveys returned by deadline: 493
Response rate: 49.3 percent
Number of surveys returned too late to be included in analysis: 42
Corrected return rate: 53.5 percent

table 4

What mental skills are necessary for you to properly perform this task?
1. **Recall**—ability to identify, remember, or recognize specific information
2. **Application**—ability to calculate, classify, interpret, or apply knowledge
3. **Analysis/evaluation**—ability to analyze information, put information together to arrive at a solution, or evaluate the usefulness of the solution

Test Specifications

In developing the test specifications or the test content outline, the advisory committee members examined the data gathered through the job analysis survey. A certification examination must reflect the responsibilities of all groups who will participate in that program. Therefore, it is important to ensure that the test specifications and the resulting examination sample tasks that are considered to be significant responsibilities of the individuals for whom the examination is intended.

All 27 of the task statements were determined to be eligible for inclusion in the test content outline based on the mean significance ratings made by the respondents. The ratings found that all 27 statements were significant to the practice of hospital-based coding regardless of primary work setting, geographic region, coder's years of experience, or where entry-level coding knowledge was obtained.

The advisory committee applied a complexity scale to determine at what cognitive level individual tasks are typically performed. The information provides a basis for matching the level of complexity of the assessment measure with the level of complexity that is usually required on the job. The complexity scale is based on Bloom's Taxonomy of Educational Objectives. (See Table 4.)

The committee, with direction from AMP project staff, developed the test specifications for the multiple-choice questions. The committee based the test specifications on the empirical results of the study as well as the members' coding experience. The test specifications outline what areas or activities are to be assessed, the cognitive level at which the questions will be written, and their representation on the examination. The specifications provide the rationale for test development and can be used in the demonstration of the content validity and job-relatedness of the examination. (See Table 5.)

table 5

Section/Domain/ Subcategory	No. of Tasks	Mean Complexity	No. of Multiple Choice Items	No. at Recall Level	No. at Application Level	No. at Analysis Level
CCS competency statements	27		60	19	29	12
Data identification	4	2.50	16	3	3	10
Coding guidelines	4	2.00	16	6	10	0
Regulatory guidelines	8	1.88	12	5	7	0
Coding	6	1.83	8	3	5	0
Data quality	5	2.20	8	2	4	2

The advisory committee decided to use 21 medical record cases for the second portion of the CCS examination. By consensus, the group decided to distribute these medical record cases in the same manner that had been used in previous CCS examinations. This distribution is shown in Table 6.

table 6

Type of Coding	Number of Cases
Inpatient ICD-9-CM	14 cases
Ambulatory care, ICD-9-CM and CPT	7 cases

The detailed content outline (see "CCS Coding Competencies--ICD-9-CM and CPT/CHPCS Procedural Coding", *Journal of AHIMA*, May 1998) will be used by CCS exam item writers and the exam construction committee in developing the hospital-based certified coding specialist examination.

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Notes

1. Nettles, Steven S., and Jeffrey A. Kelley. "A National Job Analysis of the Hospital-based Certified Coding Specialist." Report prepared by Applied Measurement Professionals, November 1997.

2. The Job Analysis Advisory Committee consisted of Lou Ann Schraffenberger, RRA, CCS, chair, Nancy Hirschl, CCS, Toula Nicholas, ART, CCS, Patricia Small, ART, CCS, and Lenore Whalen, ART, CCS.

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