

**SUMMARY of the**

**Board Certified in Hearing  
Instrument Sciences  
National Competency Exam**

**Job Task Analysis and Test  
Blueprint Report**

**Date:** December 12, 2017

## **EXECUTIVE SUMMARY**

National Board for Certification in Hearing Instrument Sciences (NBC-HIS) offers the Board Certified in Hearing Instrument Sciences (BC-HIS) National Competency Examination. A job task analysis study was conducted to provide updated content validity evidence and ensure that the certification exam is measuring content that is currently important for competent job performance in the occupation. Subject matter experts (SMEs) participated in a two-day panel meeting to review and update the test definition document and develop a job task analysis survey. Reviewing the test definition document ensures a common understanding and permits any necessary revisions of the exam purpose, target audience, exam eligibility requirements, geographic scope of certification, expectations of a minimally qualified candidate, etc. before beginning the job task analysis study. Following the completion of the test definition review and revision, SMEs reviewed and revised the job tasks from the previous job task analysis study and created background information questions for the job task analysis survey. The SMEs also began drafting the competency statements to identify the knowledge and skills related to the job tasks that should be measured in the certification exam.

The task statements and background information questions developed during the meeting were used to create an online survey that was distributed to all current certificants and other stakeholders on the NBC-HIS mailing list.

Following the survey data collection, the analyzed data were reviewed by SMEs to determine the final list of critical tasks for competent performance as a hearing health practitioner. The draft competency statements were also reviewed and revised to ensure that all knowledge and skills required to perform the critical tasks would be assessed in the certification exam, eligibility requirements for the program, or recertification requirements. The competency statements were linked to critical task statements by the SMEs during this process.

Finally, the test blueprint was revised based on the job task analysis data and SME input.

This report details the job task analysis study and test blueprint revision processes and outcomes.

## **JOB TASK ANALYSIS**

A job task analysis study is a systematic process for collecting information regarding a profession, occupation, or job role to identify the essential job duties and associated knowledge and/or skills required for competent performance. The results of the job task analysis describe the breadth and depth of knowledge and skills that must be covered by the certification exam for it to be deemed valid, reliable, and legally defensible. The results of the job task analysis are also used as the basis for the test blueprint and exam

development activities. Everything that is measured in the exam must to be linked to an important knowledge or skill from the job task analysis.

The following steps were performed as part of the job task analysis study:

- Review of the Test Definition Document
- SME panel meeting to develop the job task analysis survey
- Survey administration and data collection
- Data analysis
- SME meeting to review survey data results and review and revise draft competency statements related to critical tasks
- SME meeting to revise test blueprint

### ONLINE JOB TASK ANALYSIS SURVEY

The task statements and background information questions developed during the job task analysis SME panel meeting were used to create an online job task analysis survey. The survey initially contained three sections: 15-16 background information questions, 67 task statements (grouped into five domains), and competency domain weighting. Responses were required for most of the survey questions; a few demographic information questions in the background information section were the only exceptions (e.g., age, gender, ethnic background).

Respondents were asked to rate each of the task statements on Frequency and Importance. The ratings scales are provided below. The Frequency scale was included to identify job tasks that are performed by a majority of hearing aid specialists and identify job tasks that are performed most frequently.

#### Task Frequency Rating Scale

- 0 = Not part of my job
- 1 = Performed at least once
- 2 = Performed every few months to yearly
- 3 = Performed every few weeks to monthly
- 4 = Performed every few days to weekly
- 5 = Performed every few hours to daily

The Importance scale was included to identify the tasks that are most important to competent job performance. This information is essential for ensuring that content measured on the certification exam is relevant to competent job performance.

#### Task Importance Rating Scale

- 0 = Not Important
- 1 = Somewhat Important
- 2 = Important
- 3 = Very Important

A total of 434 respondents were included in the initial data set with 428 completing the survey and 6 that were near enough to completion to be included (i.e., had completed

the survey except for comments and/or last page of task ratings), which met the minimum statistical sampling requirements for a population of this size.

### Task Results

To identify the critical tasks required to competently perform the job of a hearing aid specialist, the following retention criteria were used to generate the preliminary data results.

1. At least 60% of the respondents had to indicate that the task is performed or is part of the job (i.e., assign a task Frequency rating of 1 or greater).
2. The mean Importance rating, for those respondents who provided a Frequency rating of 1 or greater, had to be at least 1.50, which is the mid-point of the rating scale.

### Relative Importance of Task Domains

Task Domains	Average Importance Rating	Importance Rating Std. Dev
1: Assess Patient Presenting Problem and Needs	2.70	0.52
2: Test and Analyze Patient Hearing	2.69	0.48
3: Prescribe and Analyze Hearing Instruments	2.72	0.51
4: Fit, Adjust, Program, and Service Hearing Instruments and Equipment	2.71	0.49
5: Counseling, Rehabilitation, and Professional Practice	2.85	0.39

The SMEs recommended retaining 44 task statements as critical to competent performance as a hearing aid specialist and capable or appropriate to measure in the certification examination.

## TEST BLUEPRINT

A test blueprint was developed for the BC-HIS examination using a two-step process. First, a draft test blueprint was calculated based on the mean task importance ratings and mean task frequency ratings from the job task analysis survey. Specifically, for each critical task statement, the mean task rating and the mean importance rating were multiplied. Then the cross products of each task statement was divided by the total of all cross products and multiplied by 100 to provide a percentage of items for each task statement and its associated competency. This test blueprint provided the percentage of the exam that should be covered by each competency domain.

**2017 Final Test Blueprint Weights**

<b>Competency Domains</b>	<b>Percent of Exam</b>
1: Assess Patient Presenting Problem and Needs	22%
2: Test and Analyze Patient Hearing	26%
3: Prescribe and Analyze Hearing Instruments	19%
4: Fit, Adjust, Program, and Service Hearing Instruments and Equipment	18%
5: Counseling, Rehabilitation, and Professional Practice	15%