UNDERSTANDING ASCP BOC CERTIFICATIONS

Purpose of a Certification Program
The purpose of a certification program is to ensure minimum competency of an individual to perform their job safely and thereby protect the public. A certification provides a determination that an acceptable level of competence has been achieved by an individual who possesses the minimum qualifications to be eligible to sit for the certification examination.

ASCP BOC Certification Examination Committees
ASCP BOC certification examination committees and their members provide subject matter expertise for our certification examinations. The members are selected to represent diversity in job type (i.e. educator, bench technologist/technician, and management), geographic location, facility type and experience. The diversity provides a broad spectrum of current practice in the profession across the country. Anyone wishing to volunteer for an exam committee can go to Volunteer. When vacancies occur, the committee reviews C.V.’s for volunteers fitting the requirements needed (i.e., educator from the east coast, technologist from a reference lab on the west coast, supervisor at an academic facility).

An ASCP BOC certification examination committee’s primary responsibility is to validate the content of the certification examination. They do so by periodically administering practice analysis surveys, writing and reviewing items, performing exam database maintenance, periodic standard setting and review of psychometric and statistical analysis of the exam items/database. The committees meet annually to review and perform maintenance on the certification exam database(s).

Practice Analysis and Certification Examination Development
The purpose of conducting a practice analysis is to define practice in a profession. Practice analysis surveys define the actual tasks that practitioners must be able to perform at the time of certification. The practice analysis provides the foundation for the certification examination. It also ensures the certification is fair, job related and most importantly, legally defensible. The practice analysis provides evidence of content validation and is required by psychometric research (i.e., AERA) and is considered best practices for high stakes examination development. In addition, professional standards used by accreditation (i.e., ANSI) as well as legal statutes and guidelines utilize the practice analysis to evaluate the validity of certification programs.

The practice analysis process begins with the development of a comprehensive list of tasks needed for current practice in the field by subject matter experts. This list is placed into survey format along with a rating scale and demographic questions. The practice analysis survey is then distributed to practitioners. The data is analyzed and the exam committee reviews the data to determine which tasks will be included when developing the content guideline and subsequently the examination database. All exam items are linked to a content area on the content guideline.

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Current ASCP BOC Practice Analysis Reports are available online.

**Standard Setting Study (Cut-Score Determination or Benchmarking)**
The purpose of a standard setting study is to determine the minimum standard for passing the examination. A standard setting study is performed for new certification examinations, after analysis of a practice analysis survey or to benchmark an existing certification program. Dr. Gregory Stone, Professor of Research and Measurement at the University of Toledo noted, “Criterion-referenced standards, used in high-stakes testing, are designed to represent both a specific set of knowledge, skills, and abilities deemed critical for success and a level of test-taker performance within that set of abilities.”

ASCP BOC uses the subject matter expertise of our exam committee members to define minimal competence on each exam and determine the core knowledge essential to competently perform the job. The experts are asked to make an inference about a minimally competent individual’s ability to answer exam items correctly on an exam. This information is analyzed and used to determine a new standard or a cut-score. **Implementation of a new standard will impact population and individual examination statistics (i.e., increasing or decreasing pass rates, raising or lowering mean scores, raising or lowering program scores).** As mentioned earlier, standard setting studies are periodically implemented to validate the standard for minimum competency and thus validate test scores.

**Computer Adaptive Testing (CAT)**
The ASCP BOC uses criterion-referenced computer adaptive testing (CAT). We have been using this testing algorithm for our certification examinations since 1993. Some other examinations which utilize CAT include the Graduate Record Examination (GRE), Graduate Management Admission Test (GMAT) and the Nursing Licensure Examinations (NCLEX). Measures of Academic Progress® (MAP) is a standardized test being used at the elementary education level to assess curriculum and student’s academic level.

Each ASCP BOC certification examination administers questions according to the examination content guideline. For MLS, as of January 1, 2019, an examinee will have the following proportion of questions on their exam (i.e., 17 – 22% for Blood Bank, Chemistry, Hematology, etc.) Please note, the questions are not administered in groups (i.e., all of the blood bank items administered sequentially) but are administered based on item difficulty, could be from any of the content areas, and follow the exam content percentages. In other words, an examinee could start with a microbiology question, followed by a chemistry question, followed by a hematology question, and so on until the end of the exam.

All of the certification examinations contain experimental or field test questions. These questions do not “count” and are not used to calculate the examinee’s examination score. This is a common practice in national examination programs and is necessary to test new questions and also to ensure the validity of the examinations. The time allotted for testing includes adequate time to complete the field test questions and the examination questions. Because this is a CAT exam, the items administered to an individual from a particular content area (i.e., microbiology) is dependent on the examinee’s ability level. It is very possible for an individual to get a disproportionate number of mycology questions as opposed to general/routine microbiology questions or vice versa. If an
individual is doing well on the exam, they could get a number of mycology questions because these tend to be the more difficult questions in the microbiology content area. For example, a question about the coagulase reaction of a *Staphylococcus aureus* is a very easy question and would not be helpful in determining an individual’s ability level if given to an individual who has answered questions of higher difficulty. In this case, a question about *tinea capitis* might be the better question to challenge this individual. The premise of CAT is to more quickly assess an individual’s ability by giving them well-targeted items.

**BOC Certification Examination Scores and Ranking**
The goal of a certification program is to identify individuals who achieve the predetermined level of competency. Our only concern is whether a candidate has exhibited a proficiency level at or above the minimum competency level. *Simply put, did the candidate achieve a pass or fail on the certification examination or even simpler, is the candidate certified.*

Properly designed and developed certification examinations identify and classify candidates into either a classification of competent or not competent. Certification bodies are not concerned with how candidates perform relative to one another but rather how the candidates perform relative to the minimum passing score. Examination scores should not be used for alternative purposes other than determining minimum competency. Examples of alternative purposes can include using passing scores to compare candidates for hiring or promotion purposes or to rank candidates in a particular exam category over a specific time period. It is not valid to use candidate scores for these alternative purposes. In order to use certification scores for these alternative purposes, one would have to do a validation study using external variables, demonstrate reliability of external criteria and thus support the validity argument. These studies are rarely if ever performed and if done, have not supported the validity argument.