

ASCP Board of Certification Practice Analysis Report Phlebotomy Technician (PBT)

For Development of
PBT(ASCP) & PBT(ASCPⁱ)
Content Guideline and Examination
for PBT Exam Publication January 1, 2024

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INTRODUCTION

The purpose of conducting a practice analysis (a.k.a. job analysis or job task analysis) is to provide the foundation of a certification examination by defining practice in a profession. The practice analysis provides evidence of content validation. It is required by psychometric standards and is considered best practice for high-stakes examination development. It also ensures the certification examination is fair, valid, job-related, and most importantly, legally defensible (Chinn and Hertz 2010)¹. The ASCP Board of Certification (BOC) conducts a practice analysis approximately every five years in accordance with ASCP BOC Policy and requirements of the accrediting body, ANAB (ANSI [American National Standards Institute] National Accreditation Board), under ISO/IEC 17024.

A practice analysis is a formal process for determining or verifying the responsibilities of individuals in the job/profession, the knowledge individuals must possess, and the skills and abilities necessary to perform the job at a minimally competent level. It provides a complete and modern understanding of the duties and functions of practicing laboratory professionals. The practice analysis process is carried out in the form of a survey that lists all the tasks thought to be completed by practicing laboratory professionals. The results of the practice analysis inform the specifications and content of the ASCP BOC certification examinations. This ensures that the examinations are reflective of current practices, and it helps guarantee that individuals who become certified are current and up-to-date on the state of practice and are competent to perform as certified laboratory professionals.

PRACTICE ANALYSIS PROCESS

The ASCP BOC conducted a practice analysis survey to inform the Phlebotomy Technician (PBT) certification examination category.

The process for conducting a practice analysis consists of the following steps:

1. Survey Development
2. Demographics
3. Task Inventory – Knowledge and Skill Questions
4. Rating Criteria
5. Survey Construction
6. Pilot Testing and Revision
7. Survey Distribution
8. Survey Analysis
9. Committee Review and Discussion
10. Examination Content Guideline, Standard Setting, and Exam Publication

SURVEY DEVELOPMENT

During the 2022 ASCP BOC examination committee meeting, the Phlebotomy Examination Committee provided the input and discussion to develop a practice analysis survey. The committee members (subject matter experts) collectively discussed all pertinent aspects of their profession to design a concise survey to extract useful feedback from field professionals while maximizing response rate. The survey had two main components: demographics and task inventory with appropriate rating scales for each.

¹Chinn, R.N., and N.R. Hertz. 2010. *Job Analysis: A Guide for Credentialing Organizations*. Lexington: Council on Licensure, Enforcement and Regulation (CLEAR).

DEMOGRAPHICS

The demographic questions asked respondents about their experience, education, job title, type of facility, gender, age, etc. The purpose of these questions was to aid the committee in deciding whether the sample of respondents obtained was representative of the profession in general. The demographic data also provided analytic categories that allowed refinement of the survey population to utilize only those responses from individuals at the targeted professional level.

TASK INVENTORY – KNOWLEDGE AND SKILL QUESTIONS

The survey was broken into two core areas: knowledge and skills. The committee developed a series of knowledge areas and job-related task questions that formed the body of the survey. The survey had six major sections:

- Circulatory System
- Blood Specimen Collection
- Blood Specimen Handling, Transport, and Processing
- Waived and Point-of-Care Testing (POCT)
- Non-Blood Specimens (Collection, Handling, Transport, and Processing)
- Laboratory Operations

RATING CRITERIA

Different rating scales were used to assess knowledge and skills on the surveys. One rating scale was used for the knowledge-only tasks and asked respondents to assess the significance of having that knowledge to effectively perform their jobs. The rating scale used for the job-related task questions asked respondents to indicate whether or not they currently performed specific tasks as part of their jobs. If the respondents noted that they did not perform a task, they were asked to indicate whether they were expected to have knowledge of the concept or protocol to perform their jobs.

SURVEY CONSTRUCTION

The practice analysis survey was created and delivered through Key Survey. Using an electronic tool allowed survey review and testing via the internet, email tracking of respondents using email addresses, and the ability to send email reminders for completion of the survey.

PILOT TESTING AND REVISION

The Phlebotomy Examination Committee tested a pilot version of the survey. They reviewed and revised different aspects of the survey (e.g., information correctness, grammar/spelling, survey branching, etc.). The pilot testing comments and edits informed the final version of the survey.

SURVEY DISTRIBUTION

The Phlebotomy Examination Committee determined that the survey should be sent to all current PBT certificants in the ASCP BOC Personify database. The survey was open for a 3-week period between October 18 – November 9, 2022. ASCP BOC staff also directly emailed the survey to the Phlebotomy Examination Committee and encouraged the committee membership to disseminate the survey to their colleagues. Additionally, the survey link was posted on ASCP social media sites (i.e., Facebook, Instagram, and LinkedIn).

SURVEY ANALYSIS

The respondents were asked to answer all questions and rate all tasks in the survey. Responses from individuals currently working as a supervisor or manager were not appropriate for the entry-level PBT certification exam category and were therefore excluded from the analysis. Any individuals not currently practicing (e.g., retired, unemployed, or simply not working in phlebotomy) were removed from the practice analysis survey.

COMMITTEE REVIEW AND DISCUSSION

During the 2023 examination committee meeting, the Phlebotomy Examination Committee reviewed the practice analysis results. They agreed that the demographic results accurately reflected the PBT population (**Appendix A**).

In general, tasks performed by at least 40% of the respondents were retained on the task lists and considered valid to be included on the examination. The committee reviewed all tasks performed by less than 40% of the respondents. If the committee determined that these tasks were critical to patient care and/or were up-and-coming in practice, then the task was retained on the task list and considered valid for the examination. If the task was considered outdated or too esoteric, then it was removed from the task list and not included on the exam. The committee decisions were compiled into the Final Task List for PBT (**Appendix B**) which was used to inform the exam content guideline and the content for the certification exam.

EXAMINATION CONTENT GUIDELINE, STANDARD SETTING, AND EXAM PUBLICATION

The Phlebotomy Examination Committee revised the PBT exam content guideline based on the Final Task List for PBT (**Appendix B**). They reviewed the content area percentages on the content guideline and determined no changes were needed. The committee reviewed the exam database according to the updated content guideline and deleted or revised questions accordingly. They wrote new questions to fulfill the content guideline, and reclassified questions according to the updated guideline. After this work was completed, the committee performed standard setting to determine the pass point of the exam, and the new exam was published.

Appendix A

PHLEBOTOMY TECHNICIAN (PBT)

Demographic Analysis

Total usable survey respondents: 622

Usable individual respondents met the following criteria:

- Currently working in phlebotomy.
- Primary role is not supervisor or manager (phlebotomy).

Summary of demographic results:

- ASCP BOC credentials: individuals may have multiple credentials. The most common credentials include:
 - 94% are PBT certified.
 - 3% are MLT certified.
 - 2% are MLA certified.
- Highest level of education completed:
 - 40% have an associate degree or higher.
 - 34% have a non-degree program certificate.
 - 20% have some college credits but no degree.
 - 6% have a high school degree/GED.
- Years of experience:
 - Mean: 14 years
 - Minimum: 1 year
 - Maximum: 40 years
- Geographic Distribution: there are respondents from across the United States. The states with the highest response rate include:
 - 9% from Texas.
 - 8% from North Carolina.
 - 7% from Illinois.
 - 5% each from Pennsylvania and Wisconsin.
- Facility:
 - 48% work in hospitals.
 - 18% work in physician office/clinic laboratories.
 - 15% work in outpatient draw stations.
 - 6% work in independent (reference/commercial/private) laboratories.
 - 13% work in other types of facilities.
- Age:
 - Mean: 45 years of age
 - Minimum: 20 years of age
 - Maximum: 65 years of age
- Gender:
 - 90% are female.
 - 8% are male.
 - 2% chose not to answer.

Appendix B

PHLEBOTOMY TECHNICIAN (PBT)

Final Task List (topics kept on exam based on practice analysis results)

Circulatory System	
Structure and Function of the Circulatory System	
1. Heart	
2. Arteries	
3. Capillaries	
4. Veins	
Composition/Function of Blood	
5. Plasma/serum	
6. Cellular elements (RBCs, WBCs, platelets)	
Blood Specimen Collection	
7. Review, clarify, and verify orders	
8. Identify patients	
9. Communicate with patients (e.g., pre- and post-collection instructions)	
10. Assess/prepare patients for specimen collection	
11. Assess patients for special considerations (e.g., IV, mastectomy, amputees)	
12. Select appropriate evacuated tubes	
13. Select appropriate skin-cleansing agents	
14. Perform venipunctures using vacuum collection (from tourniquet application to bandaging site)	
15. Perform venipunctures using syringes	
16. Perform venipunctures using winged infusions (i.e., butterfly)	
17. Apply the correct order of draw	
18. Collect adequate specimen volume for testing	
19. Invert tubes	
20. Recognize and follow-up with adverse reactions to blood collections (e.g., fainting, hematoma)	
21. Utilize blood transfer devices	
22. Activate needle safety devices	
23. Adhere to safety protocols (e.g., PPE, hand hygiene)	
24. Troubleshoot equipment issues (e.g., examine needle for burrs, evaluate device failure)	
25. Perform heel punctures	
26. Perform skin punctures (e.g., fingerstick)	
27. Collect specimens for newborn screening (e.g., filter paper)	
28. Perform timed blood collections (e.g., glucose tolerance test, therapeutic drug monitoring)	
29. Collect blood culture specimens	
30. Use vein viewers (e.g., Venoscope)	

Blood Specimen Handling, Transport, and Processing

31. Accession specimens (i.e., document specimen receipt in laboratory)
32. Evaluate specimen suitability for testing (e.g., correct labeling, hemolysis, quantity not sufficient [QNS], clotting, correct specimen type)
33. Centrifuge specimens
34. Aliquot specimens (e.g., pour-off, pipetting)
35. Transport specimens appropriately (e.g., protect from light, chilled, warmed, time)
36. Store specimens appropriately (e.g., room temperature, refrigerated, frozen)
37. Follow chain-of-custody procedures
38. Evaluate suitability of specimens for add-on orders
39. Send specimens through the pneumatic tube system
40. Prepare and ship specimens to reference laboratories (send outs)

Waived and Point-of-Care Testing (POCT)

Perform the following waived and POCT:

41. Urinalysis (e.g., dipstick)
42. Hemoglobin
43. Hematocrit
44. Coagulation (e.g., ACT, PT/INR)
45. Glucose
46. Strep screens
47. Rapid flu tests (i.e., influenza A/B)
48. COVID tests
49. Pregnancy tests
50. Fecal occult blood (FOBT)
51. Electrolytes
52. Blood gases (venous or arterial)
53. Lipids (e.g., total cholesterol)
54. Breathalyzer tests
55. Electrocardiograms (e.g., ECGs or EKGs)
56. Maintain POC testing equipment
57. Perform POC testing quality control (i.e., internal and external controls)

Non-Blood Specimens (Collection, Handling, Transport, and Processing)

58. Collect throat cultures
59. Collect nasal/nasopharyngeal swabs
60. Collect specimens for breath testing (e.g., *H. pylori*, lactose)

61. Collect sweat chloride specimens
62. Prepare/instruct patients prior to specimen collection (e.g., urine collection, stool collection)
63. Process specimens (e.g., add preservatives, transfer to appropriate containers)
64. Ensure appropriate specimen transport (e.g., delivery to appropriate department)
65. Ensure correct specimen handling (e.g., temperature, timeliness)
Laboratory Operations
66. Perform quality assurance (e.g., check refrigerator temperatures, check for expired tubes)
67. Communicate with patients (e.g., identification, age-specific needs, special needs, ADA, HIPAA)
68. Perform quality assessment activities (e.g., incident report/investigation, specimen errors, turnaround time)
69. Resolve issues with registration and billing (e.g., ABN, consent, insurance)
70. Verify diagnoses (e.g., ICD coding)
71. Perform interpersonal communication (e.g., staff, other healthcare professionals)
72. Train staff and students
73. Perform LIS functions (e.g., data entry, specimen accessioning, label generation, specimen tracking)
74. Comply with regulatory safety practices (e.g., OSHA, standard precautions, infection control)
75. Comply with chemical safety practices (e.g., SDS, dry ice, urine preservatives)
76. Comply with laboratory regulations (e.g., HIPAA, ADA, CDC, DOT, TJC, CMS)
77. Maintain basic laboratory equipment (e.g., centrifuges, microscopes)
78. Use handheld phlebotomy devices with barcoding