

ABPath CertLink®

Item Writing Guide



American Board of Pathology

The mission of the American Board of Pathology, a member of the American Board of Medical Specialties, is to serve the public and advance the profession of pathology by setting certification standards and promoting lifelong competency of pathologists.

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Overview

This guide will provide ABPath CertLink (ABPCL) Item Writers and Reviewers with general instructions for writing and editing high-quality exam questions that measure a pathologist's knowledge and judgment about specific topics and content, and for writing informative Critiques that provide feedback and promote learning.

Reminder

When submitting exam questions, Item Writers and Reviewers should keep in mind that participants have 5 minutes to answer each question. For example, if an author submits an item with images, they should be aware of this time limit.

Item Quality Principles

Item Writers and Reviewers should always strive to achieve these important item quality principles:

- **Principle One:** Questions Are Designed to Test and Teach Important Topics and Concepts in Pathology Using Meaningful Critiques; Critiques and References Must Be Provided in the Appropriate Format.
- **Principle Two:** Items Test the Application of Knowledge Based on Cases/Scenarios Encountered in Practice, Not Simple Recall of Facts; Items Avoid Subjective or Controversial Topics.
- **Principle Three:** Each Item and Its Answer Choices Are Homogeneous, Testing a Single Dimension.
- **Principle Four:** The Stems, Lead-ins, and Answer Choices Are Properly Formatted.
- **Principle Five:** There Are No Technical Flaws in Test Items and/or Clues Benefitting Test-Wise Diplomates for Answering Items.
- **Principle Six:** The Stems, Lead-ins, and Answer Choices Must Be Clearly Interpretable.
- **Principle Seven:** Each Test Item Has a Single Most Correct Answer.
- **Principle Eight:** The Key Learning Objectives (KLOs) Add Value for Diplomates' Learning and Mastery of Content.

Guidelines to Achieve Item Quality Principles

This section provides comprehensive guidelines to achieve the eight item quality principles. The Appendix has an example test question with several flaws and provides an explanation of how it can be improved to achieve each principle of item quality.

All items submitted must be multiple-choice questions with a single most correct answer. Each item must include the following:

- Stem, Lead-in, and Answer Choices
- Up to 6 image files, if applicable (keep in mind the 5-minute time limit to answer each question)
- Critique (the comprehensive explanation of why the Key is the correct answer **and** why each incorrect answer, or Distractor, is incorrect)
- Key Learning Objective (KLO)
- Reference(s) [URLs/links are preferred, but the Document Object Identifier (DOI), ISBN (for textbooks), NLM call number, and the PubMed ID (PMID) are also acceptable.]
- Practice Areas and Category Codes

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- ***Principle One: Questions Are Designed to Test and Teach Important Topics and Concepts in Pathology Using Meaningful Critiques; Critiques and References Must Be Provided in the Appropriate Format.***

The Critique:

- provides an instructional narrative about a single topic addressed by the question;
- provides clear and comprehensive explanations as to why the Key is correct, and why each Distractor is incorrect;
- offers useful feedback and enhances learning; and
- should be concisely written and not include long, detailed explanations of basic science concepts or topics, unless it is important for pathologists to know.

ABPCL Item Writers are strongly encouraged to modify Critiques to produce additional Critiques and write additional questions associated with these modified Critiques.

References should be a URL/link when possible, but the DOI or PMID for articles, ISBN for textbooks, or NLM call number are also acceptable. If these are unavailable, references must include the name of the author(s), the title of the publication, published sources such as a journal or book, volume or edition number, year of publication, and page numbers. (See Appendix for a formatting example.)

- ***Principle Two: Items Test the Application of Knowledge Based on Cases/Scenarios Encountered in Practice, Not Simple Recall of Facts; Items Avoid Subjective or Controversial Topics.***

- Questions test important, practical, or critical topics or concepts relevant to day-to-day practice. Coverage of timely topics is also desirable.
- Ideally, questions should be of a problem-solving nature.

- ***Principle Three: Each Item and Its Answer Choices Are Homogeneous, Testing a Single Dimension.***

- Each question addresses a single topic.
- Answer Choices must be logical and homogeneous (eg, all diagnoses, all IHC stains, all laboratory test results, all clinical associations).

- ***Principle Four: The Stems, Lead-ins, and Answer Choices Are Properly Formatted.***

- Test items have longer Stems and shorter Answer Choices.
- Answer Choices should be organized logically, in alphabetical or numerical order, approximately the same length when possible, and grammatically similar.
- Answer Choices must flow from the Lead-in in content and grammar, independent of the other options.
- The Lead-in must be a complete sentence ending in a question mark (?) that clearly indicates how a diplomate should respond (eg, “What is the most likely diagnosis?”).
- Questions should be written in the past tense.
- True/False test questions are not permitted (eg, “Which statement regarding X is true?”).

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- Do not use personal phrases or pronouns within Stems/Lead-ins (eg, “You are asked...” or “In your lab...”).
- The inclusion of age and gender in the Stem is at the Item Writer’s discretion. If gender is included, it should be written as male/female, not man/woman. A patient’s race should be included only if medically necessary; otherwise, it should be excluded.
- Place terms or phrases common to all Answer Choices in the Lead-in when applicable (eg, if options A through E all have “the” as the first word, place “the” in the Lead-in instead of at the beginning of each Answer Choice).
- Do not use “All of the above” or “None of the above” as an Answer Choice.
- Each item should have three to five choices with one correct answer (the Key) and two to four incorrect options (Distractors).
- Begin each Answer Choice using lowercase unless the option is an independent sentence or begins with a proper noun.
- An Answer Choice should end with a period only when it is a complete sentence.
- An excellent question is one in which the answers can be covered up and the question can still be answered.
- Tables including information necessary to answer the question should be included in the Stem, such as laboratory values (eg, glucose, CBC, IHC panels).

➤ ***Principle Five: There Are No Technical Flaws in Test Items and/or Clues Benefitting Test-Wise Diplomates for Answering Items.***

- Stems should not teach or include information that can clue a correct answer for another test item.
- Ensure that grammatical rules required for the Stem or Lead-in do not inadvertently function as a clue for the Key.
- Answer Choices should not be easily groupable (eg, four benign diagnoses and one malignant diagnosis).

➤ ***Principle Six: The Stems, Lead-ins, and Answer Choices Must be Clearly Interpretable.***

- The Stems, Lead-ins, and Answer Choices should be positive statements. Do not use “no,” “not,” “least,” “incorrect,” etc. (eg, “Which laboratory test would **not** be affected by rivaroxaban therapy?”).
- Do not use “All of the following except...”. The use of “except” in a question and negative Lead-ins are not permitted.
- Do not use absolutes (eg, “All,” “None,” “Always,” “Never”).
- Stems, Lead-ins, and Answer Choices should be succinct and should not contain unnecessary information.
- Short Stems, Lead-ins, and Answer Choices with basic information are best.
- Each Stem should express a complete thought.
- State a single, clearly formulated problem as a question (eg, “What most likely is the best treatment for a patient with mild von Willebrand disease undergoing minor surgery?”).
- Avoid the use of imprecise terms (eg, “may,” “often,” “frequently”).
- An ideal question is one that diplomates can answer correctly without looking at the Answer Choices.
- Always provide reference ranges when units of measure or laboratory values are used. Present data in a table if it makes a question easier to read.

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- Titers should be expressed as the reciprocal without the 1: - that is, 32, not 1:32. Dilutions and ratios, however, are expressed as 1: ___.
- Only use well-known abbreviations and acronyms that have been accepted by the TDACs. A list of acceptable abbreviations and acronyms can be found [here](#). Otherwise, place abbreviations and acronyms in parentheses after the spelled-out term. Thereafter, the abbreviation or acronym may be used to substitute for the spelled-out word in the text.
- Do not use the possessive case with eponymic terms (eg, Down syndrome; Hodgkin lymphoma). Use generic terms instead of eponymic terms whenever possible.
- Do not use drug or product trade names when a generic is available (eg, Lovenox, Coumadin, Rituxan).

➤ **Principle Seven: Each Test Item Has a Single Most Correct Answer.**

- All questions must include three to five Answer Choices, with a single most correct answer.

➤ **Principle Eight: The Key Learning Objectives (KLOs) Add Value for Diplomates' Learning and Mastery of Content.**

- Each question's KLO is generally a brief phrase or sentence that summarizes the "take-away knowledge" diplomates should possess after answering the question and reading the Critique (eg, "Diagnosis of pancreatic adenocarcinoma."). A period should follow every KLO.
- KLOs should reinforce the knowledge of diplomates who answer correctly and direct diplomates who incorrectly answer test questions to the topics that will improve their knowledge.

Item Quality Checklist and Review of Items

- Principle One:** The item is designed to test and teach important topics and concepts in pathology using a meaningful Critique; Critiques and References are provided in the appropriate format.
- Principle Two:** The item tests the application of knowledge based on cases/scenarios encountered in practice, not simple recall of facts; items avoid subjective or controversial topics.
- Principle Three:** The item and its Answer Choices are homogeneous and test a single dimension.
- Principle Four:** The Stems and Answer Choices are properly formatted.
- Principle Five:** There are no technical flaws and/or clues benefitting test-wise diplomates for answering items.
- Principle Six:** The Stems, Lead-ins, and Answer Choices are clearly interpretable.
- Principle Seven:** Each item has a single most correct answer.
- Principle Eight:** The Key Learning Objectives add value for diplomates' learning and mastery of content.

Requirements for Images

Each image associated with a test question should be saved and uploaded as a JPG file. Images should be high-resolution and no more than 5000 pixels wide. A maximum of 6 images may be attached per item. Attribute the source of an image if it's not created by you. Please refer to the [Acquisition and Use of Web Images for ABPath Exams](#) on the ABPath website for more information on images.

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Appendix

This Appendix demonstrates a test question with several flaws. First, read the flawed item and try to identify the errors. Then read how to achieve the Eight Principles of Item Quality by correcting each flaw.

Example of a Flawed Test Question

Question

An unconscious girl of an overly strict religious family had a ruptured spleen after a motor vehicle crash. Her hemoglobin was 5 g/dL and she was in hemorrhagic shock. Considering adherence to their religion as more important, unfortunately, her parents refused consent to the use of blood products on religious grounds. What is the most appropriate next step?

- A. Transfuse allogeneic blood products, strictly following all hospital protocols.**
- B. Wait for a court order that can be provided in three business days that approves transfusion.*
- C. Obtain an ethics service consultation.*
- D. Treat without the use of blood products.*
- E. Transfuse packed red blood cells.**

**Correct answer*

Critique

A child in hemorrhagic shock with high-volume blood loss is at high risk for death unless transfused emergently. The physician must consider the ethical principles of autonomy and beneficence, the patient's best interest standard, and the rights of parents and children in medical decision-making.

Key Learning Objective

Life-saving treatment of a critically injured or ill minor child vs parents' religious objection.

How to Improve the Example of the Flawed Test Question

- How to achieve **Principle One**: *Critiques Should Guide Item Writing, and Critiques and References Are Provided in the Appropriate Format.*

There are no concise explanations as to why the Distractors are incorrect answers in the flawed version of the item. Providing such explanations would improve the Critique. In addition, no reference is provided.

- How to achieve **Principle Two**: *Test Questions Test the Application of Knowledge Based on Cases/Scenarios Encountered in Practice, Not Simple Recall of Facts; Items Avoid Subjective or Controversial Topics.*

Item Writers should avoid controversial topics for test questions. The question Stem should be edited so that it has no content that could be construed as being judgmental or disparaging.

- How to achieve **Principle Three**: *Each Item and Its Answer Choices Are Homogeneous, Testing a Single Dimension.*

The Answer Choices are not homogeneous.

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- How to achieve **Principle Four**: *Use Proper Formatting for Stems and Answer Choices.*

The test question incorrectly references gender by including the word “girl.” The item is a patient-based question that does not indicate the patient’s age. Properly referencing gender and indicating the patient’s age would improve the item.

- How to achieve **Principle Five**: *There Are No Technical Flaws in Test Items and/or Clues Benefitting Test-Wise Diplomates for Answering Items.*

Waiting for a court order to come in three business days could take too long in this emergent situation. Edit Distractor B to make it a more plausible correct answer for diplomates with less knowledge and skill.

- How to achieve **Principle Six**: *Stems and Answer Choices Must Be Clearly Interpretable.*

Stems and Answer Choices should be succinct and should not contain unnecessary information. Edit Distractor A to make it as succinct as possible. Add reference range for hemoglobin.

- How to achieve **Principle Seven**: *Each Test Item Has a Single Most Correct Answer.*

Among the Answer Choices, both options A and E are correct. Edit the question to include a single most correct option only. The edit can be made by either removing one of the correct Answer Choices, leaving only four options remaining, or editing one of the two correct Answer Choices so that it would become a Distractor.

- How to achieve **Principle Eight**: *Key Learning Objectives (KLOs) Add Value for Diplomates’ Learning and Mastery of Content.*

KLOs are specific, succinctly written, and generally consist of a single phrase or sentence. Edit the statement of the KLO so that it is a succinct sentence or phrase that adds value to the diplomates’ learning.

Improved Example Test Question

Making necessary improvements leads to higher-quality test questions that are fair. High-quality test questions lead to a better assessment of a diplomate’s knowledge, improve the validity of the test question for measuring a diplomate’s levels of knowledge and skill, and are not biased toward cultural and religious backgrounds. See the improved item below.

Question

An unconscious 6-year-old female had a ruptured spleen after a motor vehicle crash. Her hemoglobin was 5 g/dL (reference range: 11.2–14.5 g/dL), and she was in hemorrhagic shock. Her parents refused consent for the use of blood products on religious grounds. What is the most appropriate next step?

- A. *Transfuse allogeneic blood products.**
- B. *Wait for a court order to approve transfusion.*
- C. *Obtain an ethics service consultation.*
- D. *Treat without the use of blood products.*

**Correct answer*

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Critique

A child in hemorrhagic shock with high-volume blood loss is at high risk for death unless transfused emergently. Waiting for a court order or an ethics consultation would not be timely enough to save the child's life. The use of colloids or crystalloids would not correct the severe, life-threatening anemia. Because of the patient's age and condition, she cannot give autonomous consent; however, the child's welfare takes precedence over parental autonomy. The physician must consider the ethical principles of autonomy and beneficence, the patient's best interest standard, and the rights of parents and children in medical decision-making.

Key Learning Objective

A minor child's health and future autonomy should be protected over the parents' religious objections.

Reference

Doe J. J Med Ethics. 2015;89:21-29.

Practice Area(s)

Blood Banking/Transfusion Medicine

Category/Category Code

Quality, Legal and Regulatory Issues

Definitions of Item Components

Stem: the clinical scenario/vignette that gives background information; includes tables when applicable

Lead-in: the question to be answered

Key: the correct answer

Distractors: the incorrect answers

Answer Choices: all the possible answers (Key and Distractors)

Critique: the explanation as to why the Key is the correct answer and why each Distractor is incorrect

Key Learning Objective: a short sentence or phrase summarizing the intended "take-away knowledge"

Practice Area: the area of pathology to which a question is relevant

Category Code: dependent upon the Practice Area chosen, it is a more granular subtopic area