

# Practice Analysis: What is it and Why is it Crucial to the Test

Craig Gilliam and Lita Jo Henman, Certification Board for Infection Control  
Teleclass Broadcast Sponsored by Sealed Air [www.sealedair.com](http://www.sealedair.com)

## Practice Analysis

### What is it and why is it critical to the test?

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## Objectives

- Explain how to use the content outline as part of exam preparations
- Understand the role of the practice analysis in determining exam content and eligibility
- Describe the three types of exam questions and apply practical strategies for each category.



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## Use of content outline

- Current outline from 2010
- Questions are developed based upon weighted average of each of six areas
- Found on CBIC website under [www.CBIC.org](http://www.CBIC.org)  
Preparing for the Examination



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## Use of content outline

- Surveillance and Epidemiologic Investigation - 25% of questions
  - Design, collection and interpretation of data
- Preventing/Controlling the Transmission of Infectious Agents – 25% of questions
  - Policy and procedures – hand hygiene; cleaning, disinfection & sterilization; isolation



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## Eligibility for Initial Certification

1. Must have **primary responsibility** for the infection prevention and control program for their employing organization.
2. Must meet **practice requirements** for “current clinical practice of infection prevention and control”
3. Must meet **educational requirements**



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## Definition of Infection Prevention Practice

The clinical practice of infection control occurs in a variety of settings and includes **both**:

1. analysis and interpretation of collected infection prevention and control data; and
2. the investigation and surveillance of suspected outbreaks of infection.

**AND**



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### Definition of Infection Control Practice

Includes at least **three** of the following activities:

1. Planning, implementation and evaluation of infection prevention and control measures;
2. Education of individuals about infection risk, prevention and control;
3. Development and revision of infection control policies and procedures;
4. Management of infection prevention and control activities;
5. Provision of consultation on infection risk assessment, prevention and control strategies.



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### Eligibility for Certification (Education)

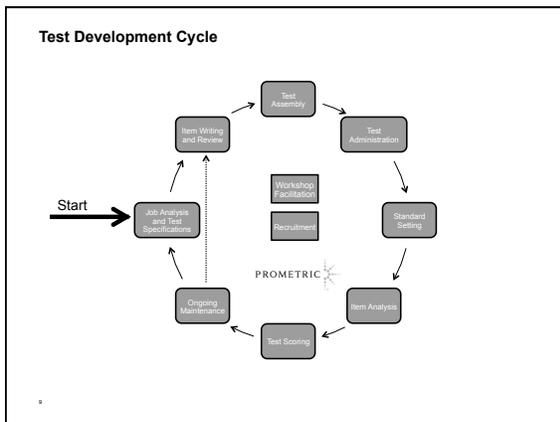
- A current license or registration as a medical technologist, physician, or registered nurse;

**OR**

- A minimum of a baccalaureate degree



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### Practice analysis (PA)

- Done every 4 to 5 years
- Surveys infection prevention professionals to determine:
  - Tasks that are part of current practice
  - Knowledge that is required to competently perform those tasks



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### Practice Analysis Purpose

- Identify and re-evaluate the role definition of the Infection Preventionist/Infection Control Practitioners (IP/ICP)
- Validate and update the list of tasks the knowledge statements related to work performed by (IP/ICP)
- Develop the test specification for the Certification in Infection Control (CIC) examination



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### PA Steps

- Create comprehensive list of tasks and knowledge used in current practice
- Create draft survey tool
- Pilot survey tool
- Revise tool based on feedback
- Send out survey tool to all IP/ICP
- Analyze results
- Revise Test Specification



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## Create comprehensive list of tasks and knowledge used in current practice

- Diverse group of IP/ICP from a wide variety of practice settings and geographic locations throughout the US and Canada
- Group came to consensus around a comprehensive list of tasks and knowledge required for competent IP/ICP practice



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## Create draft PA

- Worked with Prometric to turn list of items into survey using standardized scale.

Importance	Frequency
0 = Of no importance	0 = Never
1 = Of little importance	1 = Seldom
2 = Of moderate importance	2 = Occasionally
3 = Important	3 = Often
4 = Very important	4 = Very Often



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## Another important part of PA

- Collection of demographic and practice setting data
- Allows comparison during analysis to determine any differences between groups



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## Pilot Survey Tool

- Separate group of IP/ICP took survey and provided comments on each section
- Original team then reviewed each comment and revised survey tool to further clarify questions



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## Send out Survey

- Sent to a wide variety of avenues to reach as many IP/ICP as possible
  - IPAC Canada
  - CBIC
  - APIC
  - Purchased mailing lists



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## Analyze Results

- Analysis completed by Prometric using statistical and psychometric methods
- Subgroup analysis done based on answers to demographic and practice setting questions



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## Analysis Methods

- Means, standard deviations and frequency (percentage) distributions for task statements and content coverage ratings
- Means, standard deviations and frequency (percentage) distributions for knowledge statements and content coverage ratings
- Medians and modes for task frequency ratings
- Means and standard deviations for test content recommendations
- Index of agreement values for designated subgroups



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## Review results and revise test specifications

- Second group of IP/ICP reviewed the results and determined which tasks and knowledge statements should be included in test
- Determined final weight of each of the domains and created new test specification template



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## From theory to reality

- Results of CBIC Practice Analysis done in 2014
  - Process started in Dec 2013.
  - Final review of PA and creation of new test specification completed July 2014
  - Integrated into test writing and review process in Oct 2014
  - New test specification will go into effect with tests given in July 2015



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## Results of Practice Analysis

- Almost 3,000 surveys were completed by IP/ICP from every US state and Canadian province. Also received results from several countries outside of North America
- Majority of respondents were between 40-59 years of age. Only 3% were under the age of 30



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## PA Results

- 65% worked in an acute care setting.
  - Significantly different from previous PA
- Half of those in an acute care setting worked in facility with less than 200 beds
- More than half were the only IP/ICP in their facility



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## How 2014 PA will change test in 2015

- Increase in task and knowledge statements to reflect increasing expectations of IP/ICP profession
- Two new domains in test specification:
  - Environment of Care
  - Cleaning, Sterilization, Disinfection and Aespsis



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Certification in Infection Control (CIC)  
Test Specifications  
135 Questions  
*Cognitive levels: 20% Recall, 60% Application, 20% Analysis*

Category	Number of Items (Questions)
Identification of Infectious Disease Processes	22 items
Surveillance and Epidemiologic Investigation	24 items
Preventing/Controlling the Transmission of Infectious Agents	25 items
Employee/Occupational Health	11 items
Management and Communication	13 items
Education and Research	11 items
Environment of Care	14 items
Cleaning, Sterilization, Disinfection, Asepsis	15 items

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What kind of questions will be on the exam?

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- ### Cognitive Levels of Questions
- Recall
    - Requires only the recognition of specific factual information. Memory alone is what is required
  - Application
    - Requires the comprehension, interpretation or manipulation of concepts or data in which the is situationally dependent. Examples include basic calculations, recognition of a pattern or finding relationships between concepts.
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- ### Cognitive Levels Cont.
- Analysis/Evaluation
    - Requires integration or synthesis of a variety of concepts or elements to solve a specific problem. Frequently requires several steps in logic to select the correct answer.
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### Recall

Serum that is positive for HBeAg indicates

- A. An increased likelihood of infectivity
- B. The presence of a delta agent
- C. Immunity to Hepatitis B
- D. Prior receipt of hepatitis B vaccine

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### Application

A 65 year-old patient presents with jaundice and elevated liver enzymes. Blood is drawn for a viral hepatitis screen with the following results:

Hepatitis A    Anti-HAV, IgG negative; IgM positive  
 Hepatitis B    HBsAg negative, anti-HBc negative, anti-HBs positive  
 Hepatitis C    Anti-HCV negative

**Which of the following is the MOST likely cause of the symptoms?**

- A. Hepatitis A
- B. Hepatitis B
- C. Hepatitis C
- D. Delta Hepatitis

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## Analysis

A previously healthy 70 year-old presents with dyspnea and a productive cough. Which of the following diagnostic test results would be consistent with a diagnosis of community-acquired pneumonia?

- A. Sputum Gram Stain: moderate white blood cells seen; moderate growth of *Pseudomonas aeruginosa*
- B. Sputum Gram Stain: few white blood cells seen; Light growth of *Staphylococcus aureus* and *Acinetobacter baumannii*
- C. Total white blood cell count = 12,000; *Streptococcus pneumoniae* isolated from 2 sets of blood cultures
- D. Chest radiograph: diffuse infiltrate in the left upper lobe; Sputum Gram Stain: no white blood cells seen; moderate growth of *Klebsiella pneumoniae*



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Thank you!

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- November 12 (Free WHO Teleclass - Europe)  
**GLOBAL APPLICATION OF BEHAVIOUR CHANGE MODELS AND INFECTION CONTROL STRATEGIES**  
Dr. Michael Borg, St. Luke's Hospital, Malta
- November 13 **EMERGING RESPIRATORY VIRUSES: ARE HEALTHCARE WORKERS PROTECTED?**  
Dr. Virginia Roth, The Ottawa Hospital, Canada
- November 17 (FREE Teleclass - Broadcast Live from Healthcare Infection Society Conference)  
**AIRBORNE TRANSMISSION AND PRECAUTION - FACTS AND MYTHS**  
Prof. WH Seto, The University of Hong Kong, China
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