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Practice forum

# Identifying changes in the role of the infection preventionist through the 2014 practice analysis study conducted by the Certification Board of Infection Control and Epidemiology, Inc

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The Certification Board of Infection Control and Epidemiology, Inc (CBIC) is a voluntary autonomous multidisciplinary board that provides direction and administers the certification process for professionals who are responsible for the infection prevention and control program in a health care facility. The CBIC performs a practice analysis approximately every 4-5 years. The practice analysis is an integral part of the certification examination development process and serves as the backbone of the test content outline. In 2013, the CBIC determined that a practice analysis was required and contracted with Prometric to facilitate the process. The practice analysis was carried out in 2014 by a diverse group of subject matter experts from the United States and Canada. The practice analysis results showed a significant change in the number of tasks and associated knowledge required for the competent practice of infection prevention. As authorized by the CBIC, the test committee is currently reclassifying the bank of examination questions as required and is writing and reviewing questions based on the updated test specifications and content outline. The new content outline will be reflected in examinations that are taken beginning in July 2015. This iterative process of assessing and updating the certification examination ensures not only a valid competency tool but a true reflection of current practices.



Protecting the patient is the foundation of all health care practice. The Institute of Medicine brought to light many challenges in patient safety and systems performance in the landmark publications of *To Err is Human: Building a Safer Health System*[1] and *Crossing the Quality Chasm: A New Health System for the 21st Century*.[2] Those responsible for preventing infection have long recognized the risks associated with infection and its transmission, with the importance of organized infection prevention practice first highlighted in the Study on the Efficacy of Nosocomial Infection Control report.[3] In response to the call for demonstration of competent practice, the Association for Professionals in Infection Control (APIC) structured the APIC Certification Association and subsequently launched the first certification examination in 1982. This provided the first structured opportunity for infection control professionals to demonstrate their competence in preventing infection and its outcomes. Since that first examination, there have been many changes in the profession and therefore the certification process. Today, there are >5,600 infection preventionists (IPs) with certifications in infection control (CICs) with broad and varied responsibilities in the realm of infection prevention and control.

The Certification Board of Infection Control and Epidemiology, Inc (CBIC) is a voluntary autonomous multidisciplinary board that provides direction and administers the certification process for professionals who are responsible for the infection prevention and control program in a health care facility. The mission of the CBIC is to "protect the public through the development, administration, and promotion of an accredited certification" process that focuses on current infection prevention and control practice.[4] The CBIC

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currently works with Prometric (Baltimore, MD), a test development and delivery provider, in developing a certification examination that is psychometrically sound and able to be administered to infection prevention professionals worldwide. All elements of examination development, delivery, and assessment are performed within standards set by the National Commission for Certifying Agencies (http://www.credentialingexcellence.org/ncca).

The examination contents are driven by the practice of infection prevention in all settings where care is delivered. As the practice of infection prevention and control continues to evolve, capturing that evolution and ensuring that the certification examination recognizes current practice and enables demonstration of competence are cornerstones to the certification examination. Competence is the ability to put knowledge into action. Measurement of competence is a complex process that requires sound and consistent methods that can be replicated and defended. Measuring competence in the field of infection prevention and control requires that there be a firm understanding of the elements of the practice; therefore, metrics can be established that align with those practice elements. Although some level of competence may be achieved through structured education and clinical experience, only through a defined and standardized certification process can competence be objectively and consistently evaluated.

The association between certification and improved clinical outcomes is becoming more evident and has been demonstrated in intensive care and medical-surgical units, surgical services, and oncology.[5-7] Certification has been linked with improved ability to manage patient symptoms, improved knowledge regarding established practice standards and guidelines,[6] and lower rates of adverse outcomes, including 30-day mortality in 1 study.[5,7,8]

To date, 3 published studies support the value of CIC and its relationship to improved patient outcomes. Pogorzelska et al[9] demonstrated that certification of IPs had significant impact on infection rates involving multidrug-resistant organisms, notably methicillin-resistant *Staphylococcus aureus* bloodstream infections. Saint et al[10] showed that certified (CIC) IPs were more likely to perceive the evidence as strong for certain preventive activities than were their noncertified colleagues, the implication being that certification may lead to greater use of evidence-based practice. Finally, Carrico et al[11] found that immunization programs managed by certified (CIC) IPs were more likely to adhere to recognized best practices than those managed by noncertified colleagues. These 3 studies serve to recognize the value of IP certification and are the first to demonstrate that certification in infection control can positively impact practice and outcomes.

Approximately every 5 years, the CBIC performs a broad assessment of existing practice among certified IPs. The last practice analysis (PA) was conducted in 2009. Through the PA, IPs in all settings articulate current job responsibilities and the knowledge required for their performance. Because IPs have moved from traditional health care settings (eg, acute care hospitals) into nontraditional health care settings (eg, ambulatory surgery centers, boutique clinics) and into public health arenas (eg, health care–associated infection prevention programs), the information provided through the PA has become a rich collection of information regarding the evolution and transformation of IPs' practice. The PA is an integral part of the certification examination development process and serves as the backbone of the test content outline (Fig 1). Its purpose is to obtain information about the tasks performed for a particular role and the knowledge needed to competently perform those tasks. The specific intents of the CBIC PA are to (1) identify and re-evaluate the current role definition of the IP; (2) validate and update the list of tasks and knowledge statements related to work performed by IPs; (3) verify that the tasks and knowledge statements are consistent with the objective of certifying the IP; and (4) develop the test specifications for the CIC examination.

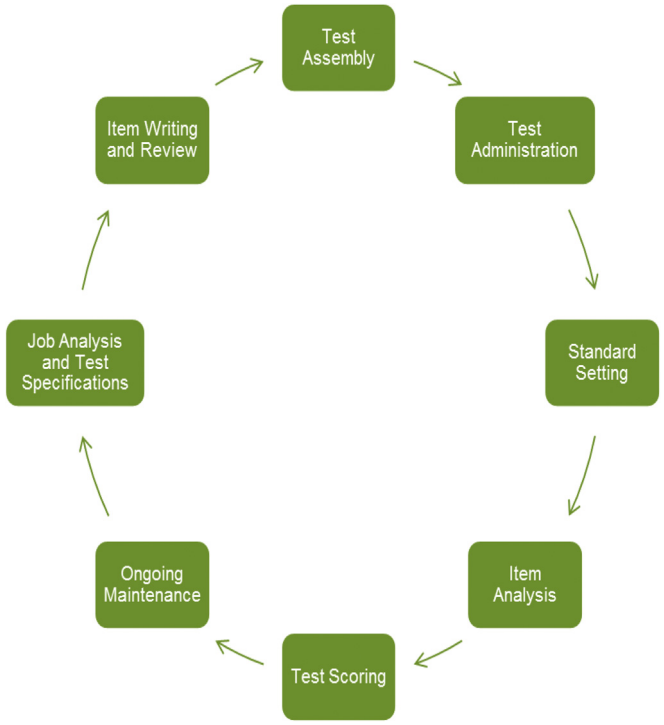


**Fig 1.** Examination development process. The job (practice) analysis is the first step in developing test specifications, which in turn direct the development of examination items (questions) and examination forms.

## METHODS

A subcommittee of the CBIC provided oversight of the PA process along with 2 distinct subject matter expert (SME) groups. Both SME groups were strategically created to represent a range of experiences, practice settings, facility sizes, and geographic locations throughout the United States and Canada, where most certificants practice. This professional diversity provided a wide perspective that took into account the ever-changing role of the IP/infection control practitioner (ICP). SMEs were provided with an overview of test development, a purpose statement for the PA, and the 2010 content outline. Prometric provided the technical and psychometric expertise to carry out the PA in a manner consistent with the *Standards for Educational and Psychological Testing*.[12]

For the purposes of this multinational survey, the phrase IP/ICP was used to facilitate common understanding of this role. The 2014 CBIC eligibility criteria for the CIC examination were used to define the IP/ICP. An IP/ICP was defined as having primary responsibility for the infection prevention program that included accountability for (1) collection, analysis, and interpretation of infection prevention outcome data; (2) investigation and surveillance of suspected outbreaks of infection; and (3) planning, implementation, and evaluation of infection prevention and control measures.

### *Survey development*

The PA survey development team consisted of 14 IPs/ICPs. The survey development meeting was conducted in Chicago, Illinois, on March 13-14, 2014. Brainstorming, consensus building, and the affinity process were used to list, categorize, and determine the importance of the various items deemed to be necessary to a competent IP/ICP. Facilitated group discussions and multivoting methods were used to categorize the items into either tasks or knowledge statements. The final list of 120 task and knowledge