2021 CIC® Examination Content Outline

The CIC® certification exam is an objective, multiple-choice exam containing 150 questions, 135 of which are scored.

This content outline reflects the results of the Practice Analysis conducted in 2020. Starting August 1st, 2021, the CIC® examination will cover the topics listed in the outline below. This list is not exhaustive and is only meant to be used as an overall guide to help direct applicants' preparation.

1) Identification of Infectious Disease Processes (22 items)

a. Interpret the relevance of diagnostic, radiologic, procedural, and laboratory reports
b. Identify appropriate practices for specimen collection, transportation, handling, and storage
c. Correlate clinical signs, symptoms, and test results to identify possible infectious disease
d. Differentiate between colonization, infection, and pseudo infection (e.g., contamination)
e. Differentiate between prophylactic, empiric and therapeutic uses of antimicrobials
f. Assess risk factors for infectious diseases (e.g., travel, vaccination status, immunocompromising factors)
g. Monitor current and emerging local and global health threats (e.g., local, national, and international public health organizations)

2) Surveillance and Epidemiologic Investigation (22 items)

a. Design of Surveillance Systems

1. Conduct a risk assessment based on the following: geographic location, demographics of the population served, care, treatment, services provided, analysis of infection prevention data, evidence-based guidelines or recommendations, and regulatory or other requirements as applicable
2. Develop goals and objectives based upon the risk assessment
3. Develop a surveillance plan based on the goals identified from the risk assessment
4. Adopt or establish standardized surveillance definitions
5. Create a process to identify epidemiologically significant findings and notify relevant parties (e.g., nursing unit, health department, leadership)

6. Integrate surveillance activities across health care settings (e.g., ambulatory, home health, long term care, acute care, behavioral)
7. Establish process for identifying individuals with communicable diseases requiring transmission-based precautions and/or follow up (e.g., reporting to health department)
8. Periodically evaluate the ability of the surveillance plan to obtain relevant data and modify as necessary

b. Collection and Compilation of Surveillance Data

1. Collect data using standardized definitions
2. Utilize a systematic approach to obtain and record surveillance data
3. Organize and manage data in preparation for analysis
4. Calculate the incidence and/or prevalence of infections
5. Calculate specific infection rates/ratios (e.g., provider specific, unit specific, device specific, procedure specific, Standardized Infection Ratio)

c. Interpretation of Surveillance Data

1. Validate surveillance data
2. Use basic statistical techniques to describe, analyze, and interpret data (e.g., mean, standard deviation, rates, ratios, proportions)
3. Compare surveillance results to published data and/or other relevant benchmarks (e.g., prior surveillance data, national databases)
4. Monitor and interpret the relevance of surveillance data (e.g., antimicrobial susceptibility patterns)
5. Prepare and present findings in a format that is relevant to the audience/stakeholders (e.g., graph, tables, charts)

d. Outbreak Investigation

1. Verify existence of an outbreak or exposure
2. Notify appropriate internal and external stakeholders
3. Collaborate with appropriate persons to establish the case definition, period of investigation, and case finding methods
4. Define the problem using time, place, person, and risk factors
5. Formulate hypothesis on source and mode of transmission
6. Collect additional data (e.g., environmental samples, active surveillance cultures)
7. Design and implement control measures, including ongoing surveillance
8. Monitor and evaluate control measures for effectiveness
9. Prepare and disseminate reports

3) Preventing/Controlling the Transmission of Infectious Agents (22 items)

a. Develop infection prevention policies and procedures based on law and regulation, manufacturer's instructions for use, evidence based guidelines and national standards (as applicable)
b. Collaborate with relevant groups and agencies in planning community/facility responses to biologic threats and disasters (e.g., public health, anthrax, influenza, emerging pathogens)
c. Identify and implement infection prevention and control strategies related to:

    1. Hand hygiene
    2. Appropriate availability, selection, use, and disposal of Personal Protective Equipment
    3. Appropriate donning and doffing of Personal Protective Equipment
    4. Patient placement, transfer, and discharge
    5. Respiratory hygiene and cough etiquette
    6. Use of patient care products and medical equipment
    7. Principles of safe injection practices (e.g., parenteral medication administration, single use of syringes and needles, appropriate use of single and multi-dose vials)
    8. Compounding medications

d. Identify and implement strategies related to Transmission based Precautions (in addition to standard precautions)
e. Adapt transmission based precautions to the specific healthcare setting, the facility design characteristics, and the type of patient interaction
f. Collaborate with key stakeholders on antimicrobial stewardship programs (e.g., leadership, pharmacist, infectious disease specialist)

    1. Monitor and interpret the relevance of antimicrobial susceptibility patterns

g. Collaborate with key stakeholders on emergency preparedness and management

    1. Plan for the influx of patients with known/suspected communicable diseases (e.g., bioterrorism, emerging infectious diseases, syndromic surveillance)
    2. Identify infection preventions role in mass casualty incidents and emergency/disaster management
    3. Assess readiness of emergency management plans
    4. Establish infection prevention coverage in emergency situations
    5. Integrate infection prevention strategies into the four phases of emergency/disaster response in the emergency operations plan (e.g., mitigation, preparedness, response, recovery)

4) Employee/Occupational Health (11 items)

a. Assess and/or develop screening and immunization programs
b. Collaborate with employee/occupational health regarding counseling, follow up, and work restriction recommendations related to communicable diseases and/or exposures
c. Collaborate with employee/occupational health to evaluate data related to infection prevention and provide recommendations (e.g., needle stick injuries, splashes)
d. Collaborate with employee/occupational health to identify healthcare personnel who may represent a transmission risk to patients, coworkers, and communities
e. Consult on use of alternative infection prevention options (e.g., allergies to products)
f. Assess risk of occupational exposure to infectious diseases (e.g., Mycobacterium tuberculosis, bloodborne pathogens)
g. Educate on safe work practices (e.g., PPE, safe injection practices, hand hygiene)

5) Management and Communication (14 items)

a. Planning the Infection Prevention Program

1. Develop, evaluate, and revise goals, measurable objectives, and plan for the Infection Prevention Program
2. Assess needs then recommend specific equipment, personnel, information technology, and resources to support the Infection Prevention Program
3. Participate in cost benefit assessments, efficacy studies, evaluations, and standardization of products and processes
4. Recommend changes in practice based on regulation, critically appraised literature, clinical outcomes, and financial implications
5. Assign value to prevention of and/or presence of healthcare associated infection prevention (e.g., cost/benefit analysis, return on investment)

b. Communication

1. Provide infection prevention findings, recommendations, and reports to appropriate stakeholders
2. Facilitate and monitor implementation of policies, procedures, and recommendations
3. Establish a process to communicate notifiable diseases to internal and external stakeholders (e.g., health authority, receiving facility, transitions of care)
4. Collaborate with internal and external stakeholders in the identification and review of adverse and sentinel events

5. Evaluate and facilitate compliance with accreditation standards/regulatory requirements
6. Identify chain of command (e.g., media inquiry)

c. Quality Performance Improvement and Patient Safety

1. Participate in quality/performance improvement and patient safety activities related to infection prevention (e.g., failure mode and effects analysis, plan do study act)
2. Develop, monitor, measure, and evaluate infection prevention performance indicators to drive quality improvement initiatives
3. Select and apply appropriate quality/performance improvement tools (e.g., “fishbone” diagram, Pareto charts, flow charts, Strengths Weaknesses Opportunities Threats, Gap Analysis)

6) Education and Research (12 items)

a. Education

1. Assess needs, develop goals and measurable objectives for preparing educational offerings
2. Prepare, present, coordinate, and/or disseminate educational content that is appropriate for the audience
3. Identify the differences between the concepts of knowledge, training, and competency
4. Provide immediate feedback, education, and/or training to healthcare workers when lapses in practice are observed
5. Facilitate education of patients, families, and others regarding prevention and control measures
6. Assess the effectiveness of education and learner outcomes (e.g., observation of practice, process measures)
7. Implement strategies that engage the patient, family, and others in activities aimed at preventing infection

b. Research

1. Conduct a literature review
2. Critically appraise the literature (e.g., p value, peer reviewed)
3. Facilitate incorporation of applicable research findings into practice
4. Identify opportunities for research related to performance improvement (e.g., effectiveness studies, product trials)

7) Environment of Care (14 items)

a. Environmental Safety

1. Recognize and collaborate on processes for a safe care environment (e.g., Heating Ventilation Air Conditioning management, water pathogen management, laundry, waste management, environmental cleaning)
2. Collaborate on the evaluation and monitoring of environmental cleaning and disinfection practices and technologies
3. Collaborate with others to select and evaluate environmental cleaning and disinfectant products
4. Identify infection prevention processes related to recall of potentially contaminated equipment, food, medications, and supplies
5. Monitor for environmental pathogens (e.g., Legionella, Aspergillus)

b. Recognize and monitor elements important for a safe care environment (e.g., Heating-Ventilation-Air Conditioning, water standards, construction)

1. Evaluate infection risks and make recommendations during the planning, design, and commissioning phases of construction (e.g., surface choice, number of isolation rooms, type and placement of sinks)
2. Assess infection risks and provide recommendations for risk mitigation during construction, renovation, and maintenance (e.g., establishment of negative pressure, type of barriers)
3. Establish through collaboration, the monitoring of risk mitigation during construction, renovation, and maintenance through commissioning

8) Cleaning, Disinfection, Sterilization of Medical Devices and Equipment (18 items)

a. Identify and evaluate appropriate cleaning, disinfection, and sterilization practices based on intended use (e.g., Spaulding classification)
b. Collaborate with stakeholders to determine if products are single use, able to be reprocessed internally, or require an external reprocessing facility
c. Identify and evaluate through direct observations critical steps of cleaning/low level disinfection, high level disinfection, and/or sterilization
d. Audit the documentation of the process to ensure regulatory and policy requirements are met