

# Laying the Foundation of an Infection Prevention Program

Overview of the role of the IP and  
required skills

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# Disclosure of Conflicts of Interest

Beverly Burt, RN, BSN, CIC has  
nothing to disclose.

# Objectives

- Discuss the primary functions of an Infection Prevention and Control (IPC) Program
- List the core competencies of the Infection Preventionist (IP)

# Background

## Infection Prevention and Control Programs

- Began in the 1950s
- Further influenced by:
  - Accrediting agencies
  - Regulatory agencies
  - Professional and nonprofit organizations
  - State and local policy makers
- Affordable Care Act of 2009
  - Transparency & accountability

# Burden of HAIs in the United States

- CDC estimates:
  - On any given day, 1 in 31 hospital patients has an HAI
  - \$28.4 to \$33.8 billion in direct medical costs of HAIs annually
  - \$12.4 billion in additional cost to society from early deaths and lost productivity

[The Direct Medical Costs of Healthcare-Associated Infections in U.S. Hospitals and the Benefits of Prevention \(cdc.gov\)](#)

[Health Topics - HAI - POLARIS \(cdc.gov\)/](#)

# Goal of the IPC Program

- The principal goals of the IPC Program is to:
  - protect the patient,
  - healthcare personnel (HCP), visitors and others in the healthcare environment and
  - accomplish these goals cost-effectively whenever possible.



# Principles Functions of the IPC Program are to:

- Obtain and manage critical data, including surveillance of infections
- Develop and recommend policies and procedures
- Intervene directly to prevent infections
- Educate and train HCP, patients and caregivers



# Infection Prevention Team

- *Infection Preventionist*
- Chair of the IPC Committee
  - Committee Members
- Hospital Epidemiologist



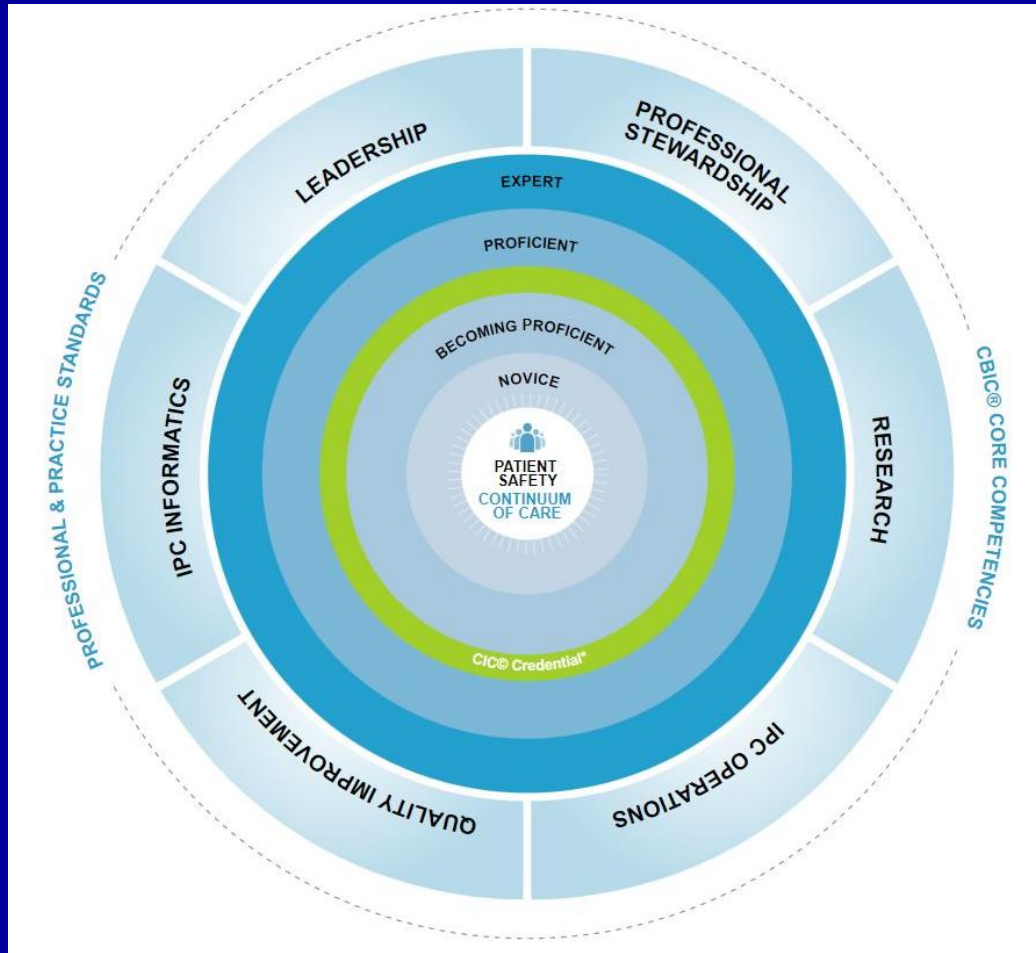


# The Infection Preventionist

- Infection preventionist (IP) are subject matter experts on the prevention of healthcare-associated infections (HAIs).
- IPs review and monitor the scientific literature related to HAI prevention and apply the evidence-based recommendations by CDCs Healthcare Infection Control Practices Advisory Committee.

# APIC Competency Model for the IP

Updated  
2019



# IP Core Competencies (CIC)

Identification of Infectious Disease Processes

Surveillance and Epidemiologic Investigations

Preventing/Controlling the Transmission of Infectious Agents

Employee/Occupational Health

Management and Communication

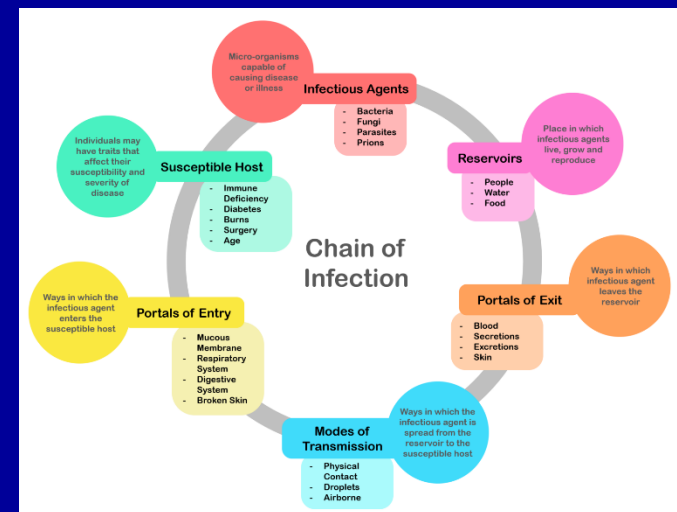
Education and Research

Environment of Care

Cleaning, Disinfection, Sterilization of Medical Devices & Equipment

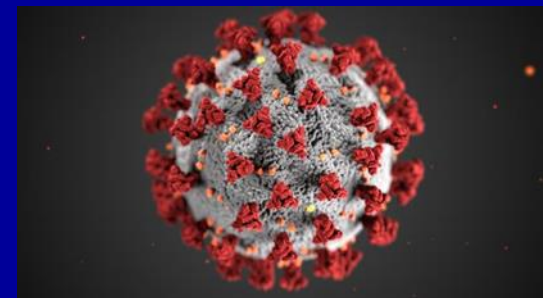
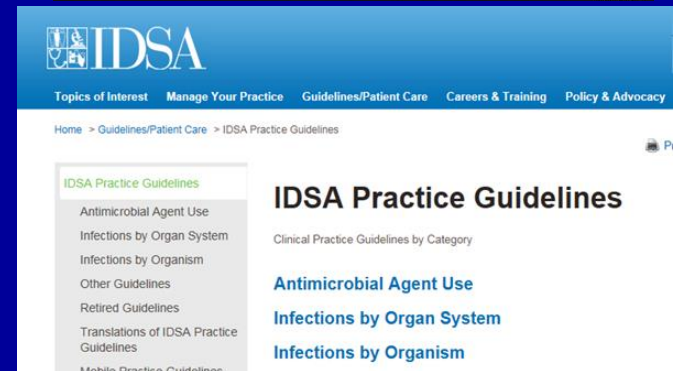
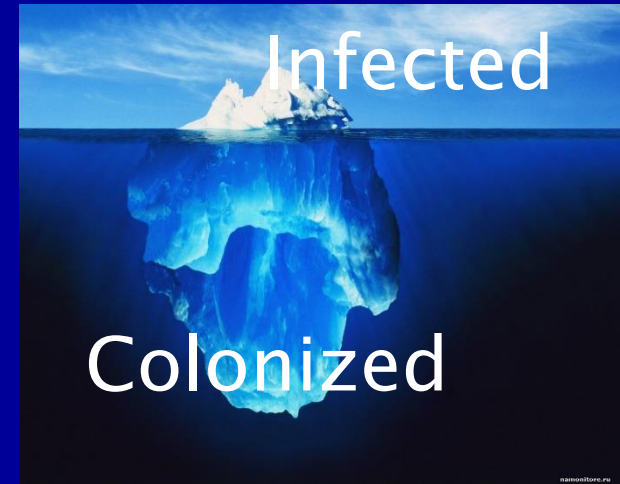
# I. Identification of Infectious Disease Processes

- Interpret relevance of diagnostic, radiologic, procedural and laboratory reports
- Identify appropriate practices for specimen collection, transportation, handling and storage
- Correlate clinical signs, symptoms, and test results to identify possible infectious disease



# I. Identification of Infectious Disease Processes (Cont.)

- Differentiate among colonization, infection, and pseudo infection
- Differentiate between prophylactic, empiric, and therapeutic use of antimicrobials.
- Assess risk factors for infectious diseases
- Monitor current and emerging local and global health threats



# II. Surveillance and epidemiologic investigations

- Design surveillance systems
  - Conduct a risk assessment
  - Develop goals & objectives
  - Develop a surveillance plan
  - Establish standardized surveillance definitions
  - Create a process to identify epidemiologically significant findings and notify relevant parties
  - Integrate surveillance activity across healthcare settings
  - Establish process to identify individuals with communicable diseases requiring TBP and/or f/u
  - Periodically evaluate the surveillance plan

## II. Surveillance and epidemiologic investigations (Cont.)

- Collect and compile surveillance data
  - Collect data using standardized definitions
  - Utilize a systematic approach to obtain and record data
  - Organize and manage data
  - Calculate the incidence and prevalence of infections
  - Calculate specific infection rates/ratios

## II. Surveillance and epidemiologic investigations (Cont.)

- Interpretation of Surveillance Data
  - Validate surveillance data
  - Use basic statistical techniques to describe, analyze and interpret data
  - Compare surveillance results to published data/benchmarks
  - Monitor and interpret the relevance of surveillance data
  - Prepare and present findings



# III. Preventing/Controlling Transmission of Infectious Agents

- Develop infection prevention and control policies and procedures
- Collaborate with relevant groups and agencies in planning community/facility responses to biologic threats (e.g., anthrax, influenza)



# III. Preventing/Controlling Transmission of Infectious Agents (Cont.)

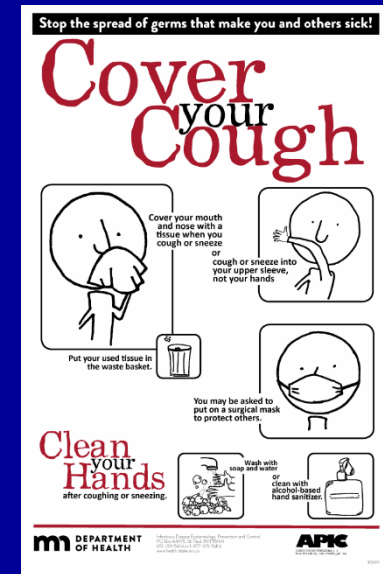
➤ Identify and implement infection prevention and control strategies related to:

- Hand hygiene
- Appropriate availability, selection, use and disposal of PPE
- Appropriate donning/doffing of PPE
- Patient placement, transfer, and discharge



# III. Preventing/Controlling Transmission of Infectious Agents (Cont.)

- Identify and implement infection prevention and control strategies related to (Cont.):
  - Respiratory hygiene/cough etiquette
  - Use of patient care products/medical equipment
  - Safe injection practices
  - Compounding medications



# III. Preventing/Controlling Transmission of Infectious Agents (Cont.)

- Identify and implement strategies related to TBPs
- Adapt TBP to the specific healthcare setting
- Collaborate with key stakeholders on antimicrobial stewardship
  - Monitor & interpret antimicrobial susceptibility patterns



# III. Preventing/Controlling Transmission of Infectious Agents (Cont.)

- Collaborate with key stakeholders on emergency preparedness
  - Plan for influx of patients with communicable diseases
  - IP role in mass casualty/disaster mgmt.
  - Assess readiness of emergency mgmt. plans
  - IP coverage in emergency situations
  - Integrate IP strategies in the four phases of emergency response in the emergency operations plan



-Mitigation  
-Preparedness  
-Response  
-Recovery

# IV. Employee/Occupational Health

- Assess and/or develop screening and immunization programs
- Collaborate with EH regarding:
  - Counseling, follow-up, and work restriction related to communicable diseases and/or exposures
  - Evaluating data related to IPC and provide recommendations (e.g., needle stick injuries, splashes)
  - Identifying HCW who may represent a transmission risk
  - Use of alternative infection prevention options (e. g., allergies to product)
- Assess risk of occupational exposure to infectious diseases (e.g. MTB, BBPs)
- Educate on safe work practices (e.g. PPE, injection safety, HH)



# V. Management and Communication

## ➤ Planning the IP Program

- Develop, evaluate, and revise goals, measurable objectives, and action plans for the IPC Program
- Recommend specific equipment, personnel, information technology and resources for the IPC Program
- Participate in cost benefit assessments, efficacy studies, evaluations and standardization of products and processes
- Recommend changes in practice based on regulation, critically appraised literature, clinical outcomes and financial implications
- Assign value to prevention of and/or presence of HAI prevention

# V. Management and Communication (Cont.)

## ➤ Communication

- Provide IP&C findings, recommendations, and reports to appropriate stakeholders
- Facilitate and monitor implementation of P&Ps and recommendations
- Establish a process to communicate notifiable diseases to internal and external stakeholders
- Collaborate internal and external stakeholders in the identification and review of adverse and sentinel events
- Evaluate and facilitate compliance with accreditation/regulatory requirements
- Identify chain of command



# V. Management and Communication (Cont.)

## ➤ Quality/performance improvement and patient safety

- Participate in quality/performance improvement and patient safety activities related to infection prevention and control
- Develop, monitor, measure, and evaluate performance indicators to drive quality improvement initiatives
- Select and apply appropriate quality/performance improvement tools



# VI. Education and Research

## ➤ Education:

- Assess needs, develop goals and measurable objectives, and prepare educational offerings
- Prepare, present, or coordinate educational content that is appropriate for the audience
- Identify the differences between the concepts of knowledge, training, and competency
- Provide immediate feedback, education when lapses observed
- Facilitate education of patients, families, and others
- Assess effectiveness of education and learner outcomes
- Implement strategies that engage patient and family.

# VI. Education and Research (Cont.)

## ➤ Research:

- Conduct a literature review
- Critically appraise the literature
- Incorporate research findings into practice
- Identify opportunities for research

# VII. Environment of Care

## ➤ Environmental Safety

- Recognize and collaborate on processes for a safe environment
- Collaborate on evaluation and monitoring of environmental cleaning and disinfection practices and technologies
- Collaborate to select and evaluate cleaning and disinfectant products
- Identify infection prevention processes related to recall of potentially contaminated equipment, food, meds and supplies
- Monitor for environmental pathogens (e.g. Legionella, Aspergillus)

# VII. Environment of Care (Cont.)

- Construction and renovation
  - Evaluate infection risks and make recommendations during the planning, design, and phases of construction
  - Assess infection risks and provide recommendations for risk mitigation during construction, renovation, and maintenance
  - Establish through collaboration, the monitoring of risk mitigation during construction, renovation, and maintenance through commissioning

# VIII. Cleaning, Disinfection, Sterilization of Medical Devices/Equipment

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

# Association for Professionals in Infection Control and Epidemiology (APIC)

## Professional Practice

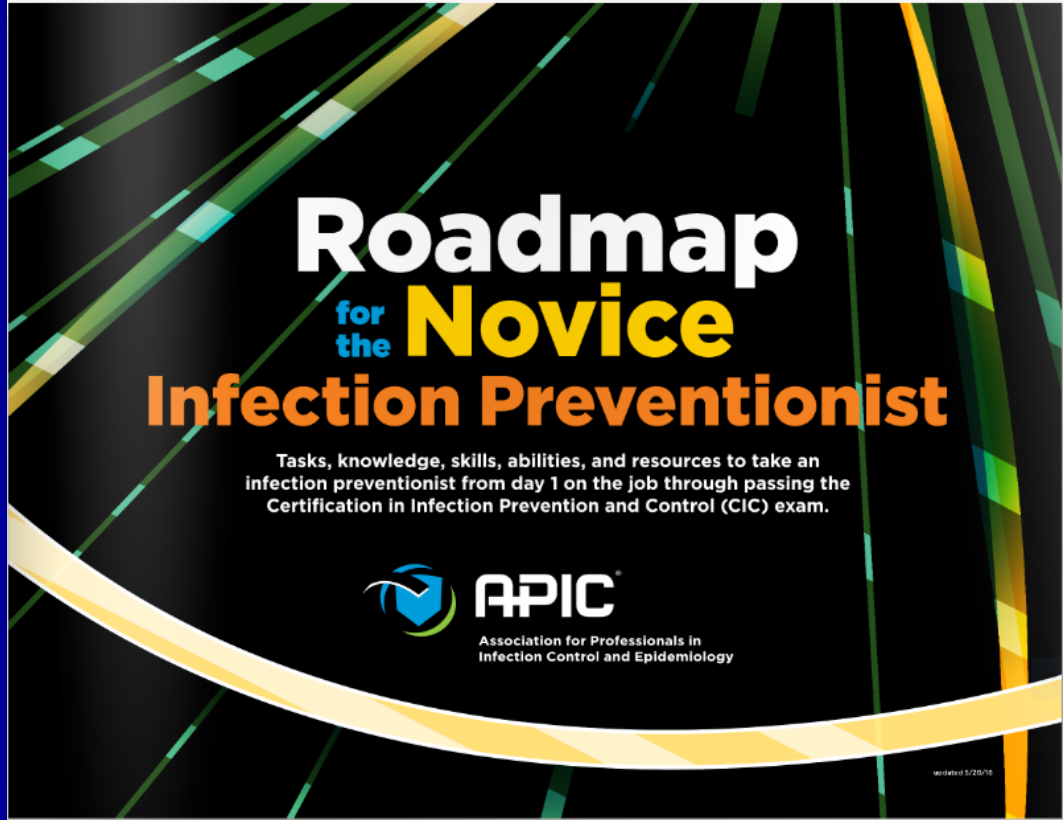
- Implementation Guides
- Scientific Guidelines
- Practice Resources
- Research
- IP Competency Model
- *Developmental Path of the IP*

## Education & Certification

- Annual APIC Conference
- In-Person & Virtual Learning
- Online Training
- EPI Intensive
- LTC IP Essentials
- ASC & Outpatient
- CIC® Preparation Course
- LTC-CIP Certification Course



Website: <http://www.apic.org/>



Stage 1

• Days 1–60

Stage 2

• Days 61–120

Stage 3

• Days 121–end of year 1

Stage 4

• Beginning of year 2 – passing the CIC exam



# Certification Board of Infection Prevention and Control (CBIC)

- Types of certification:
  - CIC®
  - LTC-CIP
  - a-IPC™
  - *AD-CIP (coming soon)*



- Three types of questions on exam:
  - Recall
  - Application
  - Analysis
  
- Recertification by:
  - Examination
  - OR
  - Continuing Education IPU

<https://www.cbic.org>

# CIC<sup>®</sup> Exam References

## Primary References: CIC & a-IPC

- APIC Text Online (ATO). Available at: <https://text.apic.org/>
- Meehan, AK, Campbell, EA, Dudeck, MA, Edwards, JR, & Herzig, C. *Fundamental Statistics & Epidemiology in Infection Prevention*, 1st ed., APIC, 2016.
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- Brooks, Kathy. *Ready Reference for Microbes*, 4th ed., APIC; 2018.

## Secondary References: CIC & a-IPC

- Current Recommendations of the Advisory Committee on Immunization Practices (ACIP).
- Current guidelines, standards, and recommendations from CDC, SHEA, HICPAC, and Public Health Agency of Canada.
- AORN guidelines for perioperative practice.
- *The Pink Book* - Epidemiology and Prevention of Vaccine Preventable Diseases.
- American Academy of Pediatrics "Red Book Online". Available at: <https://publications.aap.org/redbook?autologincheck=redirected>
- Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. Best practices for environmental cleaning for prevention and control of infections in all health care settings. 3rd ed. Toronto, ON: Queen's Printer for Ontario; 2018.
- Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. Interim guide for infection prevention and control of *Candida auris*. Toronto, ON: Queen's Printer for Ontario; 2019.

# CMS Hospital Infection Control Worksheet

- Infection Prevention Program & Resources
- Hospital QAPI Systems Related to IPC
- Prevent Transmission of MDROs & Antimicrobial Stewardship
- Infection Prevention Systems, and Training Related to HCP
- Hand Hygiene
- Injection Practices and Sharps Safety
- Personal Protective Equipment/Standard Precautions
- Environmental Services
- Reprocessing of Semi-Critical Equipment
- Reprocessing Critical Equipment, Instruments, Devices (Sterilization)
- Single-Use Devices
- Indwelling Urinary Catheters
- Central Venous Catheters
- Ventilator/Respiratory Therapy
- Spinal Injection Procedures
- *Point of Care Devices*
- Isolation: Contact, Droplet, Airborne Precautions
- Surgical Procedures

## Section 4.E. Point of Care Devices (e.g. Blood Glucose Meter, INR Monitor)

Elements to be assessed		Surveyor Notes		Surveyor Notes
Point of care devices are used in a manner consistent with hospital infection control policies and procedures to maximize the prevention of infection and communicable disease including the following:				
Note: One observation to be completed. If possible make a second observation in a different patient care area in the hospital.		<input type="checkbox"/> Second observation not available (If selected, questions 4.E.1 – 4.E.4 RIGHT column will be blocked)		
4.E.1 Hand hygiene is performed before and after the procedure.	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.E.2 Gloves are worn by healthcare personnel when performing the finger stick procedure to obtain the sample of blood, and are removed after the procedure (followed by hand hygiene).	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.E.3 Finger stick devices are not used for more than one patient.  Note: This includes both the lancet and the lancet holding device.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unable to observe		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unable to observe	
4.E.4 If used for more than one patient, the point-of-care testing device (e.g., blood glucose meter, INR monitor) is cleaned and disinfected after every use according to manufacturer's instructions.  Note: if manufacturer does not provide instructions for cleaning and disinfection, then the device should not be used for >1 patient.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

If no to any of 4.E.1 to 4.E.4, cite at 42 CFR 482.42(a) (Tag A-0749)

# Summary

- Goals of the IPC Program is to protect the patient, HCP, visitors and others in the healthcare environment cost-effectively when possible.
- The IP must be competent in multiple areas as noted in the Certification Test Content Outline.
- An important goal of the IP is to obtain certification in infection prevention and control (CIC®).

# Bibliography

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  - Developmental path of the infection preventionist – APIC
- The APIC Text– APIC
  - 1. Infection Prevention and Control Programs | Overview of Infection Prevention Programs
  - 2. Competency and Certification of Infection Preventionists | Overview of Infection Prevention Programs
  - 4. Accrediting and Regulatory Agencies | Overview of Infection Prevention Programs
- Certification Board of Infection Control and Epidemiology, Inc.
  - Content Outline & Sample Questions (cbic.org)
  - Get Started (cbic.org)
  - Exam Prep Resources | CBIC
- <https://www.cdc.gov/>
- CMS Hospital Infection Control Worksheet
- survey-and-cert-letter-15-43.pdf (cms.gov)

# Questions

