Infectious Diseases Pharmacy
Content Outline
FINALIZED SEPTEMBER 2020/FOR USE ON FALL 2021 EXAMINATION AND FORWARD

Definition and Target Audience

The BPS Board Certified Infectious Diseases Pharmacist (BCIDP) program is a credential for pharmacists who have met the eligibility criteria and who in their unique practice specialize in the use of microbiology and pharmacology to develop, implement and monitor drug regimens that incorporate the pharmacodynamics and pharmacokinetics of antimicrobials to optimize therapy for patients.

The purpose of the BPS Board Certified Infectious Diseases Pharmacist (BCIDP) program is to validate that the pharmacist has the advanced knowledge and experience to:

- Use clinical and evidence-driven knowledge to develop appropriate antimicrobial therapies to manage infections while decreasing adverse events, complications, and resistance;
- Provide direct patient care through interprofessional health care teams, collaborative leadership of antimicrobial stewardship programs, education of health care providers, and preventive services including immunizations;
- Advocate for appropriate antimicrobial utilization;
- Optimize antimicrobial use in individual practice settings, and individual patients, in an effort to minimize the progression of antimicrobial resistance, and to improve public health.

Domains

1. Patient Care and Therapeutics (70% of examination)
2. Education, Public Health, and Translation of Evidence to Practice (15% of examination)
3. Antimicrobial Stewardship and Practice Management (15% of examination)

Domain 1: Patient Care and Therapeutics (70% of examination)

Related to comprehensive Infectious Diseases pharmacotherapy management for a patient including designing/modifying, implementing, optimizing, and monitoring patient specific plans across the continuum of care.

Tasks

1.1 Design an appropriate empiric infectious diseases pharmacotherapeutic and/or monitoring plan based on patient-specific data, laboratory data, antimicrobial pharmacology, and best available evidence.

1.2 Modify an infectious diseases pharmacotherapeutic and/or monitoring plan based on patient-specific data, laboratory data, antimicrobial pharmacology, and best available evidence.

1.3 Optimize an infectious diseases pharmacotherapeutic and/or monitoring plan for patients during transitions of care, such as outpatient parenteral antimicrobial therapy, institutional discharge, and transfer to other facilities.

1.4 Identify and recommend appropriate tests/procedures which need to be performed in order to design an infectious diseases pharmacotherapeutic plan.

1.5 Develop a preventative, prophylactic, or post-exposure therapy plan for appropriate patients.

1.6 Educate and provide counseling to patients/caregivers regarding the safe and effective use of antimicrobials and preventative therapies, monitoring for therapeutic and adverse outcomes, and the importance of adherence to the infectious diseases pharmacotherapeutic plan.
Knowledge of:
k1.1 Pathophysiology and epidemiology of infections including:
  k 1.1.1 Bloodstream infections
  k 1.1.2 Bone and joint infections
  k 1.1.3 Cardiovascular infections
  k 1.1.4 Central nervous system infections
  k 1.1.5 Fungal infections
  k 1.1.6 Gastrointestinal infections
  k 1.1.7 Gynecologic infections
  k 1.1.8 HIV-infection and AIDS (including opportunistic infections)
  k 1.1.9 Infective endocarditis
  k 1.1.10 Intra-abdominal infections
  k 1.1.11 Malaria and other parasitic infections
  k 1.1.12 Mycobacterial infections
  k 1.1.13 Respiratory tract infections
  k 1.1.14 Sepsis
  k 1.1.15 Sexually transmitted diseases
  k 1.1.16 Skin and soft tissue infections
  k 1.1.17 Urinary tract infections and prostatitis
  k 1.1.18 Viral hepatitis
  k 1.1.19 Viral infections, misc.

k1.2 Pharmacotherapies related to specific infectious diseases (e.g., bacterial, fungal, viral)
k1.3 Pharmacokinetics and pharmacodynamics of antimicrobials (e.g., antifungals)
k1.4 Pharmacology of antimicrobials
k1.5 Pharmacology of vaccines
k1.6 Clinical immunology of biological response modifiers (e.g., TNF inhibitors, colony stimulating factors)
k1.7 Mechanisms of pathogen resistance
k1.8 Antimicrobial drug interactions
k1.9 Complications of antimicrobials
k1.10 Complications of vaccines
k1.11 Spectrum of activity of antimicrobials
k1.12 Structure and characteristics of pathogenic microorganisms
k1.13 Basic microbiology laboratory procedures
k1.14 Clinical laboratory tests in infectious diseases (e.g., rapid diagnostic testing, RPR, antibody concentrations)
k1.15 Diagnostic and therapeutic procedures in infectious diseases (e.g., lumbar puncture, paracentesis)
k1.16 Factors that alter the risk of infection
k1.17 Immunologic response to infection
k1.18 Outpatient parenteral antimicrobial therapy
k1.19 Therapeutic monitoring of antimicrobials
k1.20 Factors that may impact response to therapy (e.g., dose optimization, penetration of antimicrobials, source control, immune status)
k1.21 Antimicrobial de-escalation
k1.22 Measures to monitor response to antimicrobial therapy (e.g., resolution of signs and symptoms, laboratory data, readmission, development of drug resistance)
k1.23 Patient and caregiver education and counseling techniques
k1.24 Antimicrobial allergy and cross-reactivity
k1.25 Antimicrobial desensitization
k1.26 Preventive therapies (e.g., infection prophylaxis, vaccines, behavior modification)
k1.27 Factors to consider when differentiating infection from non-infection
k1.28 Considerations in special populations (e.g., geriatrics, pediatrics, obesity)
k1.29 Facilitation across transitions of care
k1.30 Considerations in drug delivery
k1.31 ACIP immunization recommendations and schedules
Domain 2: Education, Public Health, and Translation of Evidence to Practice (15% of examination)
Related to interpretation, and dissemination of knowledge related to infectious diseases pharmacy, and the education of current and future healthcare professionals, and the public.

Tasks:
2.1 Educate healthcare professionals and trainees regarding infectious diseases.

2.2 Provide public health information on infectious diseases, risk/benefits of antimicrobial therapy, and infection prevention.

2.3 Critically evaluate infectious diseases literature in both the basic and clinical sciences with regard to study design, statistical analysis, study results, and applicability to patient care and policy development.

Knowledge of:
- k2.1 Principles and methods of educating and communicating with healthcare professionals and trainees
- k2.2 Appropriate resources for infectious diseases information
- k2.3 Infectious diseases and pharmacologic therapy
- k2.4 Public health information resources and services related to infectious diseases
- k2.5 Populations at risk for infection
- k2.6 Screening guidelines for infectious diseases (e.g., HIV, STDs, tuberculosis)
- k2.7 Research study design and methodology, including those specific to infectious diseases and antimicrobial stewardship (e.g., Monte Carlo simulation, microbiologic surveillance, time-kill, interrupted time series)
- k2.8 Statistical methods and interpretation
- k2.9 Clinical application and limitations of published data and reports
- k2.10 Metrics for evaluating quality, safety, service, and cost
- k2.11 Process improvement tools (e.g., MUE, process mapping, failure mode effects analysis, plan-do-study-act, root cause analysis)
Domain 3: Antimicrobial Stewardship and Practice Management (15% of examination)

Related to advancing antimicrobial stewardship, managing infectious diseases policies and guidelines, and advocating for prudent antimicrobial use designed to optimize the care of patients in collaboration with the healthcare team.

Tasks:
3.1 Monitor and evaluate institutional antimicrobial usage.

3.2 Participate in the development of antibiogram(s) (e.g., institution-specific, unit-specific) and monitor and evaluate susceptibility trends.

3.3 Develop, modify and/or recommend optimal institutional policies, procedures, and interventions to promote appropriate use of antimicrobials and vaccines by incorporating guidelines, surveillance data, and best available evidence (e.g., formulary restrictions, criteria for use, prospective audit and feedback, rapid diagnostics).

3.4 Collaborate and participate in the development and compliance with infection prevention policies, including tracking of infection rates and monitoring of outbreaks.

Knowledge of:
- k3.1 Metrics for antimicrobial use (e.g., DDD, DOT, SAAR)
- k3.2 Clinical practice guidelines (e.g., IDSA, SHEA, CDC)
- k3.3 National, accreditation, and regulatory organizations and requirements (e.g., Joint Commission, CMS, NHSN)
- k3.4 Process improvement tools (e.g., MUE, process mapping, failure mode effects analysis, plan-do-study-act, root cause analysis)
- k3.5 Pharmacoeconomic assessment of antimicrobials
- k3.6 Antiibiogram design and development
- k3.7 Antimicrobial resistance trends
- k3.8 Methods for developing and evaluating institutional clinical practice guidelines
- k3.9 Antimicrobial stewardship strategies
- k3.10 Roles of infection control and prevention, microbiology and infectious diseases divisions/departments
- k3.11 Strategies for advocating vaccination and prudent antimicrobial use
- k3.12 Infection control and prevention strategies
- k3.13 Metrics for infection control
- k3.14 CDC notifiable infectious diseases