

ACCP Toolkit

The 2016 ACCP Pharmacotherapy Didactic Curriculum Toolkit

2016 Educational Affairs Committee, American College of Clinical Pharmacy

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The purpose of the 2009 and 2016 ACCP Pharmacotherapy Didactic Curriculum Toolkits is to provide guidance to schools and colleges of pharmacy in developing, maintaining, and modifying their curricula.^{1,2} The 2016 ACCP Educational Affairs Committee reviewed recent medical literature and other documents to identify disease states that are responsive to drug therapy. Disease frequency, socioeconomic burden to society, and impact of pharmacist involvement in medication therapy were considered in determining which topics to include in the updated pharmacotherapy toolkit. This updated toolkit is intended to provide valuable guidance to schools and colleges of pharmacy as they develop, maintain, and modify their curricula to keep pace with major scientific advances and practice changes.

In the 2016 toolkit, diseases and content topics are organized by organ system, when feasible, and grouped into tiers defined by practice competency. Within each organ system, topics are listed by tier level and then alphabetically within tiers. The tier levels assigned by the 2016 Educational Affairs Committee differ from those of the 2009 toolkit. Tier assignments are intended for use only as a guide within the context of individual college or school priorities.

Competency-Based Tier Definitions:

1. Students receive education and training on this topic to prepare them to provide collaborative, patient-centered care on graduation and licensure.
2. Students receive education and training on this topic, but additional knowledge or skills may be required after graduation (e.g., residency training) to prepare them to provide collaborative, direct patient care.
3. Students and residents may not receive education and training on this topic; rather, they will be expected to obtain the required knowledge and skills on their own to provide collaborative, direct patient care if required in their practice.

ORGAN SYSTEMS AND DISEASE STATE TOPICS

Cardiovascular Disorders

- 1 Acute coronary syndromes (STEMI, NSTEMI, unstable angina)
- 1 Atherosclerotic cardiovascular disease, primary prevention
- 1 Atherosclerotic cardiovascular disease, secondary prevention
- 1 Arrhythmias, atrial (e.g., atrial fibrillation)
- 1 Basic life support (BLS)
- 1 Dyslipidemia
- 1 Heart failure, chronic
- 1 Hypertension
- 1 Ischemic heart disease, stable
- 1 Venous thromboembolism
- 2 Advanced cardiac life support (ACLS)
- 2 Arrhythmias, ventricular
- 2 Drug-induced cardiac disease
- 2 Heart failure, acute decompensated
- 2 Hypertensive crises
- 2 Peripheral arterial disease
- 2 Pulmonary arterial hypertension
- 2 Stroke (ischemic, hemorrhagic, and transient ischemic attack)
- 2 Valvular heart diseases
- 3 Aneurysm
- 3 Aortic dissection
- 3 Cardiomyopathies
- 3 Pericarditis

Dermatologic Disorders

- 1 Acne vulgaris
- 1 Burn injuries, minor (e.g., sunburn, self-treated burns)
- 1 Dermatitis (e.g., atopic, contact, diaper)

Dermatologic Disorders (continued)

- 1 Drug-induced dermatologic disorders (e.g., drug reaction with eosinophilia and systemic symptoms [DRESS], Stevens-Johnson syndrome, toxic epidermal necrolysis)
- 1 Wounds, minor (e.g., lacerations, punctures, bites, incisions, abrasions, avulsions)
- 2 Alopecia
- 2 Photoaging (e.g., actinic keratosis, solar lentigines)
- 2 Psoriasis
- 2 Wounds, major (e.g., pressure ulcers)
- 3 Burn injuries, major

Ear, Nose, and Throat Disorders

- 1 Allergic rhinitis
- 1 Cerumen impaction
- 1 Cough
- 1 Otitis externa (swimmer's ear)
- 1 Rhinorrhea
- 1 Sore throat
- 3 Ménière disease

Endocrine Disorders

- 1 Diabetes, type 1
- 1 Diabetes, type 2
- 1 Hypothyroidism
- 2 Adrenal gland disorders (e.g., adrenal insufficiency, hypercortisolism)
- 2 Drug-induced endocrine disorders
- 2 Hyperglycemic crises (diabetic ketoacidosis [DKA], hyperosmolar hyperglycemic state [HHS])
- 2 Hyperthyroidism
- 2 Male hypogonadism
- 3 Pituitary gland disorders (e.g., growth hormone deficiency, acromegaly, hyperprolactinemia)
- 3 Transgender health

Gastrointestinal Disorders

- 1 Constipation
- 1 Diarrhea (including traveler's diarrhea)
- 1 Drug-induced hepatic disorders
- 1 Gastroesophageal reflux disease
- 1 Nausea & vomiting, simple (e.g., acute viral gastroenteritis, overindulgence, motion sickness)
- 2 Cirrhosis, end-stage liver disease, and complications (e.g., portal hypertension, ascites, varices, hepatic encephalopathy, hepatorenal syndrome)
- 2 Inflammatory bowel disease (Crohn disease, ulcerative colitis)
- 2 Irritable bowel syndrome
- 2 Nausea & vomiting, complex (e.g., postoperative, chemotherapy-induced)
- 2 Nonalcoholic steatohepatitis

Gastrointestinal Disorders (continued)

- 2 Peptic ulcer disease (including stress-related mucosal injury, gastrointestinal bleeding)
- 2 Pancreatitis (acute, chronic, and drug-induced)
- 3 Celiac disease
- 3 Liver diseases, metabolic (e.g., hemochromatosis, Wilson disease)

Gynecologic and Obstetrical Disorders

- 1 Contraception
- 1 Lactation (e.g., drugs and breastfeeding)
- 1 Menopausal symptoms (e.g., hot flashes, vaginal dryness, vulvovaginal atrophy)
- 1 Pregnancy (e.g., pregnancy testing, nutrition & supplementation, drug dosing, teratogenicity, nausea/vomiting)
- 2 Diabetes mellitus, gestational
- 2 Endometriosis and uterine fibroids
- 2 Female sexual dysfunction
- 2 Infertility
- 2 Labor and delivery (e.g., labor induction, preterm labor)
- 2 Menstrual cycle disorders (e.g., dysmenorrhea, menorrhagia)
- 2 Pregnancy-induced hypertension, preeclampsia, eclampsia
- 3 Polycystic ovary syndrome
- 3 Pregnancy termination

Hematologic Disorders

- 1 Anemias (e.g., iron deficiency, vitamin B12 deficiency, folic acid deficiency, chronic disease/inflammation)
- 1 Drug-induced hematologic disorders
- 2 Aplastic anemia
- 2 Coagulation disorders (e.g., hemophilia, von Willebrand disease, antiphospholipid syndrome, clotting factor deficiencies)
- 2 Sickle cell disease
- 3 Disseminated intravascular coagulation
- 3 Platelet disorders (e.g., idiopathic thrombocytopenic purpura, thrombotic thrombocytopenic purpura)
- 3 Porphyrias

Immunologic Disorders

- 1 Allergies/drug hypersensitivities (e.g., anaphylaxis, desensitization)
- 2 Solid organ transplantation (e.g., heart, liver, lung, kidney; including immunosuppressive therapy)
- 2 Systemic lupus erythematosus
- 3 Immunodeficiency

Infectious Diseases

- 1 Antimicrobial regimen selection
- 1 *Clostridium difficile* infection

Infectious Diseases (continued)

- 1 Fungal infections, superficial (e.g., vulvovaginal and esophageal candidiasis, dermatophytoses)
- 1 Immunization (including vaccines, toxoids, and other immunobiologics)
- 1 Influenza virus infection
- 1 Lower respiratory tract infections
- 1 Skin and soft tissue infections
- 1 Upper respiratory tract infections (e.g., otitis media, sinusitis, pharyngitis, bronchitis)
- 1 Urinary tract infections, uncomplicated
- 2 Antimicrobial prophylaxis in surgery and other procedures
- 2 Antimicrobial stewardship
- 2 Bacterial resistance
- 2 Bloodstream and catheter infections
- 2 Bone and joint infections (e.g., osteomyelitis, prosthetic joint infections)
- 2 Central nervous system (CNS) infections (e.g., meningitis, encephalitis, brain abscess)
- 2 Fungal infections, invasive (e.g., histoplasmosis, coccidioidomycosis, cryptococcosis, blastomycosis, hematogenous candidiasis, aspergillosis)
- 2 Gastrointestinal infections (e.g., infectious diarrhea, enterotoxigenic poisonings)
- 2 Health care–acquired infections: preventive measures
- 2 Hepatitis, viral
- 2 Human immunodeficiency virus (HIV) infection
- 2 Infections in immunocompromised patients (e.g., febrile neutropenia, opportunistic infections in AIDS)
- 2 Infective endocarditis
- 2 Intra-abdominal infections (e.g., peritonitis, abscess)
- 2 Microbiologic testing (including rapid diagnostic tests)
- 2 Parasitic diseases (e.g., protozoans [giardiasis, amebiasis, malaria, trypanosomiasis], helminths [nematodes, schistosomiasis, trematodes, trichinellosis, cestodes], ectoparasites [head and body lice, scabies])
- 2 Prostatitis
- 2 Sepsis and septic shock
- 2 Sexually transmitted infections (e.g., syphilis, gonorrhea, chlamydia, trichomoniasis, human papilloma virus, pelvic inflammatory disease; see CDC guidelines)
- 2 Spirochetal diseases (e.g., treponematoses, leptospirosis)
- 2 Tickborne illnesses (e.g., Lyme borreliosis, ehrlichiosis, Rocky Mountain spotted fever, relapsing fever)
- 2 Travel medicine
- 2 Tuberculosis
- 2 Urinary tract infections, complicated
- 2 Viral infections (e.g., varicella, cytomegalovirus, herpes simplex, measles [rubeola], mumps, rabies)

Infectious Diseases (continued)

- 3 Bacterial infections, miscellaneous (e.g., nocardiosis, actinomycosis, *Tropheryma whipplei* [Whipple disease])
- 3 Mycobacterial infections, other (leprosy, nontuberculous mycobacterial infections)
- 3 Viral infections, miscellaneous (West Nile, Ebola, dengue fever)

Musculoskeletal and Connective Tissue Disorders

- 1 Gout and hyperuricemia
- 1 Osteoarthritis
- 1 Osteoporosis
- 1 Soft tissue injuries (e.g., strains, sprains, tendinitis, bursitis, acute low back pain)
- 2 Rheumatoid arthritis
- 3 Familial Mediterranean fever and other hereditary autoinflammatory diseases
- 3 Mixed connective tissue disease
- 3 Myopathies (e.g., dermatomyositis, polymyositis)
- 3 Reiter syndrome
- 3 Rhabdomyolysis
- 3 Sjögren syndrome
- 3 Spondyloarthritides (e.g., ankylosing spondylitis)
- 3 Systemic sclerosis
- 3 Vasculitides (e.g., polymyalgia rheumatica, temporal arteritis, granulomatosis with polyangiitis [Wegener granulomatosis])

Neurologic Disorders

- 1 Headache (e.g., tension-type, migraine, cluster)
- 1 Pain, neuropathic (e.g., diabetic, postherpetic)
- 1 Pain, nociceptive (acute and chronic)
- 2 Epilepsy
- 2 Fibromyalgia
- 2 Multiple sclerosis
- 2 Neurocognitive disorders (e.g., Alzheimer disease, vascular and frontotemporal dementia)
- 2 Parkinson disease
- 2 Sleep-wake disorders (e.g., narcolepsy, restless legs syndrome, circadian rhythm disorders; see also “Insomnia” in the Psychiatric and Behavioral Disorders section)
- 2 Status epilepticus
- 3 Amyotrophic lateral sclerosis
- 3 Autoimmune neurologic disorders, other (e.g., Guillain-Barré, autoimmune encephalopathy)
- 3 Cerebral palsy
- 3 Huntington disease
- 3 Myasthenia gravis
- 3 Tic disorders (including Tourette disorder)

Nutritional Disorders

- 1 Essential nutrients (including vitamin and trace mineral deficiency and excess)
- 1 Overweight and obesity
- 2 Enteral nutrition
- 2 Malabsorptive syndrome (including gastric bypass surgery)
- 2 Nutrition assessment (e.g., evaluating status, malnutrition, nutrition disorders, calculating requirements)
- 2 Parenteral nutrition

Oncologic Disorders

- 2 Breast cancer
- 2 Cervical cancer
- 2 Colon cancer
- 2 Kidney cancer
- 2 Leukemias, acute
- 2 Leukemias, chronic
- 2 Lung cancer
- 2 Lymphomas (Hodgkin disease, non-Hodgkin lymphoma)
- 2 Melanoma
- 2 Myelodysplastic syndromes
- 2 Oncologic emergencies (e.g., tumor lysis syndrome, hypercalcemia, coagulopathy)
- 2 Ovarian cancer
- 2 Plasma cell disorders (e.g., multiple myeloma)
- 2 Prostate cancer
- 2 Solid tumors, other (e.g., brain, bone, neuroblastoma)
- 2 Supportive care (e.g., myelosuppression, nausea/vomiting, pain, mucositis, secondary malignancies)

Ophthalmic Disorders

- 1 Conjunctivitis (e.g., bacterial, viral, allergic)
- 1 Drug-induced ophthalmic disorders
- 1 Xerosis (dry eye)
- 2 Glaucoma
- 2 Macular degeneration
- 2 Ophthalmic disorders, other (e.g., corneal abrasions, bacterial keratitis)

Psychiatric and Behavioral Disorders

- 1 Alcohol use disorder
- 1 Anxiety disorders (e.g., generalized anxiety, panic, social anxiety disorder)
- 1 Depressive disorders (e.g., major depressive disorder)
- 1 Insomnia (see other sleep-wake disorders in the Neurologic Disorders section)
- 1 Opioid use disorder
- 1 Tobacco/nicotine use disorder (including smoking cessation)

Psychiatric and Behavioral Disorders (continued)

- 2 Attention-deficit/hyperactivity disorder
- 2 Bipolar disorder (e.g., mania, bipolar depression, maintenance therapy)
- 2 Delirium/acute agitation (non-ICU)
- 2 Obsessive-compulsive disorder
- 2 Phobias
- 2 Schizophrenia
- 2 Substance use disorders (e.g., hallucinogens, stimulants, depressants, performance-enhancing drugs)
- 2 Trauma- and stressor-related disorders (e.g., posttraumatic stress disorder)
- 3 Autism spectrum disorders
- 3 Eating disorders (e.g., anorexia nervosa, bulimia nervosa, binge eating disorder)
- 3 Personality disorders

Renal, Fluid, and Electrolyte Disorders

- 1 Chronic kidney disease and complications (anemia, bone & mineral disorders)
- 1 Drug dosing in renal dysfunction and renal replacement therapy
- 1 Drug-induced renal disorders
- 1 Electrolyte disorders (sodium, potassium, calcium, phosphorus, magnesium)
- 1 Evaluation of renal function
- 2 Acid-base disturbances
- 2 Acute kidney injury (prerenal, intrinsic, and postrenal)
- 2 Diabetes insipidus
- 2 Dialysis and renal replacement therapies
- 2 Fluid balance
- 2 Syndrome of inappropriate antidiuretic hormone secretion (SIADH)
- 3 Glomerulonephritis
- 3 Nephrolithiasis
- 3 Nephrotic syndrome
- 3 Polycystic kidney disease

Respiratory Disorders

- 1 Asthma
- 1 Chronic obstructive pulmonary disease (COPD)
- 2 Cystic fibrosis
- 2 Drug-induced respiratory disorders
- 2 Obstructive sleep apnea
- 3 Extracorporeal membrane oxygenation (ECMO), pharmacologic considerations
- 3 Interstitial lung disease

Urologic Disorders

- 1 Erectile dysfunction
- 1 Lower urinary tract symptoms (LUTS), including benign prostatic hyperplasia (BPH)

Urologic Disorders (continued)

- 1 Urinary incontinence
- 3 Interstitial cystitis
- 3 Neurogenic bladder

DISORDERS OF SPECIAL POPULATIONS**Pediatrics**

- 1 Dehydration assessment and oral replacement therapy
- 1 Dosage calculations
- 1 Dosage forms (pediatric-appropriate)
- 1 Nutrition in infants and children
- 1 Growth and development
- 1 Pharmacokinetic and pharmacodynamic considerations
- 2 Congenital heart disease
- 2 Kidney disorders and dialysis in neonates and children
- 2 Neonatal critical care (e.g., sepsis, respiratory distress syndrome, apnea of prematurity)
- 2 Patent ductus arteriosus
- 2 Pediatric advanced life support (PALS)
- 3 Enuresis
- 3 Kawasaki disease
- 3 Necrotizing enterocolitis

Geriatrics

- 1 Falls and fall-risk-increasing drugs (FRIDs)
- 1 Frailty
- 1 Medication use in older adults (e.g., polypharmacy, potentially inappropriate medications [PIMs], Beers criteria, dose de-escalation)
- 1 Pharmacokinetic and pharmacodynamic considerations
- 2 Geriatric syndromes (e.g., dizziness, falls, swallowing issues, gait problems)

Critically Ill Patients

- 2 Acute respiratory distress syndrome
- 2 Pain, agitation, and delirium in ICU patients
- 2 Central nervous system (CNS) trauma (e.g., traumatic brain injury, spinal cord injury)
- 2 Hemodynamic support
- 2 Pharmacokinetic and pharmacodynamic considerations
- 2 Respiratory support
- 2 Shock syndromes (including cardiogenic, hypovolemic, vasogenic)
- 3 Burns, major/severe

Terminally Ill Patients

- 2 End-of-life care and symptom management (e.g., pain, dyspnea, constipation, restlessness)
- 2 Palliative care
- 3 Organ procurement
- 3 Physician-assisted dying

TOXICOLOGIC DISORDERS

- 1 Acetaminophen toxicity
- 1 Opioid overdose
- 1 Pediatric incidental ingestions
- 1 Poison prevention
- 2 Animal exposures (e.g., snakes, scorpions, spiders)
- 2 Anticoagulation overdose and reversal
- 2 Antidepressant overdose (including serotonin syndrome)
- 2 Antihypertensive medication toxicity (e.g., calcium channel blockers, β -blockers, clonidine)
- 2 Aspirin poisoning
- 2 Cannabinoid toxicity
- 2 Digoxin toxicity
- 2 Sympathomimetic toxicity (e.g., cocaine, amphetamines, bath salts)
- 3 Anticholinergic toxicity (e.g., atropine, antimuscarinic chemical weapons)
- 3 Cholinergic toxicity (e.g., anticholinesterase insecticides, nerve agent chemical weapons)
- 3 Disaster/emergency preparedness (e.g., chemical warfare agents)
- 3 Heavy metal poisoning (e.g., iron, lead)
- 3 Plant exposures (e.g., hemlock, jimson weed, nightshade)

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Feedback

Visit <https://www.surveymonkey.com/r/PKKNPY7> to provide feedback or suggest changes to the 2016 Toolkit. ACCP plans to review the Toolkit periodically and make revisions as required.

References

1. Schwinghammer TL, Crannage AJ, Boyce EG, Bradley B, Christensen A, Dunnenberger HM, et al. The 2016 ACCP Pharmacotherapy Didactic Curriculum Toolkit. *Pharmacotherapy* 2016;36:e189-e194.
2. American College of Clinical Pharmacy, Slain D, Wong-Berringer A, Blake B, Bumgardner M, Rowen R, et al. Pharmacotherapy didactic curriculum toolkit 2009. American College of Clinical Pharmacy. Available from www.accp.com/docs/positions/misc/pharmacotherapytoolkit.pdf. Accessed June 14, 2016.