### USMLE® Content Outline – 2020

Changes in the 2020 Content Outline from the 2019 Outline are identified in yellow font.

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2020 USMLE Outline Updated to New Innovations 20200903
General Principles of Foundational Science (GP)

GP A Biochemistry and molecular biology
GP A1 Gene expression: DNA structure, replication, exchange, and epigenetics (eg, imprinting, X-activation, DNA methylation)
GP A2 Gene expression: transcription
GP A3 Gene expression: translation, post-translational processing, modifications, and disposition of proteins (degradation), including protein/glycoprotein synthesis, intra-extracellular sorting, and processes / functions related to Golgi complex and rough endoplasmic reticulum
GP A4 Structure and function of proteins and enzymes (eg, enzyme kinetics and structural/regulatory proteins)
GP A5 Energy metabolism (eg, ATP generation, transport chain)

GP B Biology of cells
GP B1 Adaptive cell responses and cellular homeostasis (eg, hypertrophy)
GP B2 Mechanisms of injury and necrosis, including pathologic processes (eg, liquefactive necrosis, free radical formation)
GP B3 Apoptosis
GP B4 Cell cycle and cell cycle regulation (eg, mitosis)
GP B5 Mechanisms of dysregulation
GP B5a cell biology of cancer (eg, role of p53, proto-oncogenes) general principles of invasion and metastasis, including cancer staging
GP B6 Cell/tissue structure, regulation, and function, including cytoskeleton, organelles, glycolipids, channels, gap junctions, extracellular matrix, and receptors

GP C Human development and genetics
GP C1 Principles of pedigree analysis
GP C1a inheritance patterns
GP C1b occurrence and recurrence risk determination
GP C2 Population genetics: Hardy-Weinberg law, founder effects, mutation-selection equilibrium
GP C3 Principles of gene therapy
GP C4 Genetic testing and counseling
GP C5 Genetic mechanisms (eg, penetrance, genetic heterogeneity)

GP D Biology of tissue response to disease
GP D1 Acute inflammatory responses (patterns of response)
GP D1a acute inflammation and mediator systems (eg, histamine, prostaglan bradykinins, eosinophilic basic protein, nitric oxide)
GP D1b vascular response to injury, including mediators
GP D1c principles of cell adherence and migration (eg, ECAMs, selectins, leukocytic, diapedesis, and rolling)
GP D1d microbicidal mechanisms and tissue injury (eg, defensins)
GP D1e clinical manifestations (eg, pain, fever, leukocytosis, leukemoid reaction, chills)
GP D2 Chronic inflammatory responses (eg, tumor necrosis factor)
GP D3 Reparative processes
GP D3a wound healing, repair: thrombosis, granulation tissue, angiogenesis, fibrosis,
GP D3b scar/keloid formation
GP D3c regenerative process

GP E Pharmacodynamic and pharmacokinetic processes: general principles
GP E1 Pharmacokinetics: absorption, distribution, metabolism, excretion, dosage intervals
GP E2 Mechanisms of drug action, structure-activity relationships (eg, anticancer drugs)
GP E3 Concentration and dose-effect relationships (eg, efficacy, potency), types of agonists (eg, full, partial, inverse) and antagonists and their actions
GP E4 Individual factors altering pharmacokinetics and pharmacodynamics (eg, age, gender, disease, tolerance, compliance, body weight, metabolic proficiency, pharmacogenetics)
GP E5 Mechanisms of drug adverse effects, overdosage, toxicology
GP E6 Mechanisms of drug interact
GP E7 Signal transduction, including structure/function of all components of signal transduction pathways such as receptors, ligands (eg, general principles of nitric oxide, autocrine and paracrine signaling)

**GP F Microbial biology**
GP F1 Microbial identification and classification, including principles, microorganism identification, and non-immunologic laboratory diagnosis
GP F2 Bacteria
GP F2a structure (eg, cell walls, composition, appendages, virulence factors, extracellular products, toxins, mechanism of action of toxins)
GP F2b processes, replication, and genetics (eg, metabolism, growth, and regulation)
GP F2c oncogenesis
GP F2d antibacterial agents (eg, mechanisms of action on organism, toxicity to humans, and mechanisms of resistance)
GP F3 Viruses
GP F3a structure (eg, physical and chemical properties, virulence factors)
GP F3b processes, replication, and genetics (eg, life cycles, location of virus in latent infection)
GP F3c oncogenesis
GP F3d antiviral agents (eg, mechanisms of action on virus, toxicity to humans, and mechanisms of resistance)
GP F4 Fungi
GP F4a structure (eg, cell wall, composition, appendages, virulence factors, extracellular products, toxins, mechanisms of action of toxins)
GP F4b processes, replication, and genetics (eg, asexual vs. sexual, metabolism, growth)
GP F4c antifungal agents (eg, mechanisms of action on fungus, toxicity to humans, and mechanisms of resistance)
GP F5 Parasites
GP F5a structure (eg, appendages, macroscopic features, and virulence factors)
GP F5b processes, replication, and genetics (eg, life cycles, metabolism, and growth)
GP F5c oncogenesis
GP F5d antiparasitic agents (eg, mechanisms of action on parasite, toxicity to humans, and mechanisms of resistance)
GP F56 Prions

**GP G Normal age-related findings and care of the well patient**
GP G1 Infancy and childhood (0-12 years)
GP G1a Normal physical changes
GP G1a1 linear growth, variations in linear growth, including constitutional delay
GP G1a2 weight
GP G1a3 head circumference
GP G1a4 micturition, defecation, primary incontinence/bedwetting;
GP G1a5 normal physical examination
GP G1a6 screening
GP G1a7 Sleep
GP G1a8 Teething syndrome
GP G1b Developmental stages
GP G1b1 motor
GP G1b2 speech
GP G1b3 cognitive
GP G1b4 psychosocial
GP G1b5 anticipatory guidance
GP G1c Lifestyle and routine preventive health care
GP G1c1 nutrition
GP G1c2 exercise (eg, benefits of exercise)
GP G1c3 preventive/travel medicine
GP G1c4 risk factors and prevention (eg, guns, swimming, motor vehicles, car seats)
GP G1c5 routine vaccinations
GP G2 Adolescence (13-17 years)
GP G2a Normal physical changes
GP G2a1 linear growth, variations in linear growth including constitutional delay
GP G2a2 weight
GP G2a3 puberty
GP G2a4 normal physical examination
GP G2a5 gynecomastia
GP G2a6 autonomy/self-identity
GP G2a7 sleep
GP G2b Developmental stages
GP G2b1 cognitive (eg, abstract thought)
GP G2b2 psychosocial (eg, autonomy, role confusion, sexual identity)
GP G2b3 anticipatory guidance
GP G2c Lifestyle and routine preventive health care
GP G2c1 nutrition
GP G2c2 exercise (eg, benefits of exercise)
GP G2c3 preventive/travel medicine;
GP G2c4 risk factors and prevention (eg, risk-taking behavior, helmets, safe sex, motor vehicles, seat belts, distractions)
GP G2c5 routine vaccinations
GP G3 Adulthood (18-64 years)
GP G3a Normal physical changes
GP G3a1 weight
GP G3a2 normal physical examination
GP G3a3 screening
GP G3a4 sleep
GP G3b Developmental stages
GP G3b1 cognitive
GP G3b2 intimacy vs isolation
GP G3b3 anticipatory guidance
GP G3c Lifestyle and routine preventive health care
GP G3c1 nutrition
GP G3c2 exercise (eg, benefits of exercise)
GP G3c3 preventive/travel medicine
GP G3c4 risk factors and prevention
GP G3c5 routine vaccinations
GP G4 Senescence (65 years and older)
GP G4a Normal physical changes, including normal physical exam for age
GP G4a1 weight, height (spinal compression), skin, bruising
GP G4a2 normal physical examination
GP G4a3 response to temperature
GP G4a4 micturition, defecation
GP G4a5 sleep
GP G4b Developmental stages
GP G4b1 motor;
GP G4b2 cognitive (eg, benign senescent forgetfulness)
GP G4b3 psychosocial
GP G4b4 integrity vs despair
GP G4b5 retrospection
GP G4b6 anticipatory guidance
GP G4c Lifestyle and routine preventive health care
GP G4c1 nutrition
GP G4c2 exercise (eg, benefits of exercise)
GP G4c3 preventive/travel medicine
GP G4c4 risk factors and prevention (eg, falls, general medical condition; polypharmacy, driving, caregiver stress)
GP G4c5 routine vaccinations

**Immune System (IS)**

**IS A Normal processes**
IS A1 Development of cells of the adaptive immune response, including positive and negative selection during immune development
IS A2 Structure, production, and function
IS A2a granulocytes, natural killer cells, macrophages, mast cells, dendritic cells, cell receptors (eg, complement receptors and toll-like receptors), cytokines, chemokines
IS A2b T lymphocytes, including T-lymphocyte receptors, accessory molecules (eg, CD3, CD4, CD8, B7), cell activation and proliferation, cytotoxic T lymphocytes, and memory T lymphocytes
IS A2c B lymphocytes and plasma cells, including B-lymphocyte receptors, immunoglobulins, cell activation and proliferation, including development of antibodies and memory B lymphocytes
IS A2d host defense mechanisms, host barriers to infection, mucosal immunity (eg, gut associated lymphoid tissue and bronchus-associated lymphoid tissue), anatomical locations of T and B lymphocytes
IS A3 Cellular basis of the immune response and immunologic mediators
IS A3a antigen processing and presentation in the context of MHC I and MHC II molecules (eg, TAP, beta-2 microglobulin), intracellular pathways, mechanisms by which MHC is expressed on the surface; including distribution of MHC I and MHC II on different cells, mechanisms of MHC I and MHC II deficiencies, and the genetics of MHC
IS A3b regulation of the adaptive immune response (eg, peripheral tolerance, anergy, regulatory T lymphocytes, termination of immune response, and B-T lymphocyte interactions)
IS A3c activation, function, and molecular biology of complement (eg, anaphylatoxins)
IS A3d functional and molecular biology of cytokines (eg, IL 1-15)
IS A4 Basis of immunologic diagnostics (eg, antigen-antibody reactions used for diagnostic purposes, ELISA, immunoblotting, antigen-antibody changes over time, ABO typing)
IS A5 Principles of immunologic protection
IS A5a vaccine production and mechanisms of vaccine action, biologically active antibodies (eg, monoclonal antibodies, polyclonal antibodies including IVIG, VZIG, rabies immunoglobulin)
IS A6 Effect of age on the function of components of the immune system

**IS B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis**
IS B1 Disorders associated with immunodeficiency
IS B1a deficiency primarily of humoral immunity
IS B1a1 common variable immunodeficiency
IS B1a2 hyper IgM syndrome
IS B1a3 hypogammaglobulinemia/agammaglobulinemia, X-linked (Bruton)
IS B1a4 selective immunodeficiency (eg, IgA, IgM, IgE)
IS B1b deficiency/dysfunction primarily of cell-mediated immunity
IS B1b1 adenosine deaminase deficiency
IS B1b2 DiGeorge syndrome
IS B1b3 severe combined immunodeficiency disease (SCID)
IS B1b4 Wiskott-Aldrich syndrome;
IS B1b5 granulomatosis
IS B1b6 allergic reactions/skin
IS B1c complement deficiency
IS B1c1 alternative pathway component deficiency (C2, C3b, C3bB, C36B6)
IS B1c2 classical pathway component deficiency (C1q, C1r, C1-C5)
IS B1c3 terminal component deficiency (C5b-C9
IS B1c4 terminal complement complex);
IS B1c5 C1 esterase inhibitor deficiency, hereditary angioedema
IS B1c6 mannose-binding lectin (MBL) deficiency
IS B1c7 membrane attack complex deficiency
IS B1d deficiency of phagocytic cells and natural killer cells
IS B1d1 Chediak-Higashi disease
IS B1d2 chronic granulomatous disease and other disorders of phagocytosis
IS B1d3 leukocyte adhesion deficiency
IS B2 HIV/AIDS: HIV1 and HIV2;
IS B2a AIDS; AIDS complications (eg, neuropathy, dementia, renalinsufficiency)
IS B2b immunology of AIDS
IS B2c immune reconstitution syndrome (IRS)
IS B2d secondary infections
IS B2e noninfectious complications
IS B3 Immunologically mediated disorders
IS B3a hypersensitivity reactions
IS B3a1 type 1, 2, 3, including anaphylaxis
IS B3a2 type 4; drug reactions
IS B3a3 serum sickness
IS B3b transplantation:
IS B3b1 rejection
IS B3b2 graft-vs-host disease
IS B4 Adverse effects of drugs on the immune system
IS B4a Jarisch-Herxheimer reaction
IS B4b drugs affecting the immune system (eg, prednisone, azathioprine, cyclosporine, methotrexate, monoclonal antibody drugs [eg, abciximab, adalimumab; bevacizumab, infliximab, omalizumab, rituximab])
IS B4c vaccine adverse effects

Blood & Lymphoreticular System (BL)
BL A Normal Processes
BL A1 Embryonic development, fetal maturation, and perinatal changes
BL A2 Organ structure and function
BL A3 Cell/tissue structure and function
BL A3a production and function of erythrocytes, including heme and hemoglobin synthesis;
BL A3b hemoglobin O2 and CO2 transport, transport proteins, erythropoietin production and function of platelets production and function of coagulation and fibrinolytic factors
BL A3c hemostasis
BL A4 Repair, regeneration, and changes associated with stage of life
BL B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis

BL B1 Infectious and immunologic
BL B1a infectious disorders
BL B1a1 bacteria BL B1a2 viral
BL B1a2a hemorrhagic fever (Ebola virus, Marburg virus)
BL B1a2b chikungunya
BL B1a2c dengue fever, Zika virus disease
BL B1a3 parasitic
BL B1a3a malaria (Plasmodium spp)
BL B1a3b babesiosis (Babesia species)
BL B1a4 primary infections of lymphoid tissue
BL B1a4a lymphadenitis (viral, bacterial, fungal, parasitic)
BL B1a4b lymphangitis
BL B1a4c buboes, bubonic plague (Yersinia pestis)
BL B1a4d cat scratch disease (Bartonella henselae)
BL B1a5 immunologic and inflammatory disorders
BL B1a5a cryoglobulinemia, essential mixed cryoglobulinemia
BL B1a5b autoimmune hemolytic anemia
BL B1a5c paroxysmal nocturnal hemoglobinuria
BL B1a5d thrombotic thrombocytopenic purpura
BL B1a5e hemolytic uremic syndrome
BL B2 Neoplasms
BL B2a leukemia, acute (ALL, AML)
BL B2b leukemia, chronic (CML, CLL)
BL B2c lymphomas, Hodgkin disease, non-Hodgkin lymphoma, Burkitt lymphoma, T-cell lymphoma
BL B2d multiple myeloma, dysproteinemias, monoclonal gammopathy of unknown significance (MGUS)
BL B2e myelofibrosis
BL B2f myelodysplastic syndrome, myelodysplasias; other immunoproliferative neoplasms (eg, Waldenstrom macroglobulinemia)
BL B3 Anemia, cytopenias, and polycythemia anemias
BL B3a decreased production: anemia of chronic disease
BL B3b hemolysis
BL B3b1 glucose-6-phosphate dehydrogenase deficiency
BL B3b2 pyruvate kinase deficiency
BL B3c disorders of hemoglobin, heme, or membrane
BL B3c1 disorders of red cell membranes
BL B3c2 hereditary spherocytosis, elliptocytosis
BL B3c3 methemoglobinemia, congenital
BL B3c4 sickle cell disease
BL B3c5 sideroblastic anemia
BL B3c6 thalassemias
BL B3d other causes of anemia
BL B3d1 blood loss, acute and chronic as a cause of anemia
BL B3e cytopenias
BL B3e1 aplastic anemia
BL B3e2 leukopenia
BL B3e3 neutropenia, cyclic neutropenia, agranulocytosis
BL B3e4 pancytopenia
BL B3e5 thrombocytopenia, quantitative
BL B3e6 immune thrombocytopenic purpura (ITP)
BL B3f cythemias
BL B3f1 leukocytosis
BL B3f2 polycythemia vera
BL B3f3 secondary polycythemia
BL B4 Coagulation disorders (hypocoagulable and hypercoagulable conditions)
BL B4a hypocoagulable
BL B4a1 disseminated intravascular coagulation
BL B4a2 hemophilia, congenital factor VIII [hemophilia A] and IX [hemophilia]
BL B4a3 hypofibrinogenemia
BL B4a4 von Willebrand disease
BL B4a5 platelet dysfunction, qualitative
BL B4b hypercoagulable
BL B4b1 heparin-induced thrombocytopenia
BL B4b2 other coagulopathies (eg, homocysteinemia, hypoplasminogenemia, antithrombin III, protein C/protein S deficiency, Factor V Leiden, anticardiolipin antibodies, lupus anticoagulant, prothrombin G20210A mutation)
BL B4c reactions to blood components
BL B4c1 ABO incompatibility/anaphylaxis
BL B4c2 Rh incompatibility/anaphylaxis
BL B4c3 hemolysis, delayed
BL B4c4 transfusion reaction
BL B4c5 transfusion contaminated with bacteria
BL B4c6 transfusion-related acute lung injury (TRALI)
BL B4c7 anaphylactoid reaction (IgA deficiency)
BL B5 Traumatic, mechanical, and vascular disorders
BL B5a mechanical injury to erythrocytes (eg, cardiac valve hemolysis)
BL B5b disorders of the spleen
BL B5c splenic rupture/laceration
BL B5d splenic infarct
BL B5e splenic abscess
BL B5f effects/complications of splenectomy (eg, sepsis due to encapsulated bacteria)
BL B5g hypersplenism
BL B6 Congenital disorders
BL B7 Adverse effects of drugs on the hematologic and lymphoreticular systems
BL B7a antiplatelet drugs, antithrombin drugs (eg, dabigatran)
BL B7b chemotherapeutic agents
BL B7c inhibitors of coagulation factors
BL B7d methemoglobinemia, acquired
BL B7e propylthiouracil
BL B7f tumor lysis syndrome
BL B7g warfarin

Behavioral Health (BH)
BH A Normal Processes
BH A1 Psychodynamic and behavioral factors, related past experience (eg, transference, personality traits)
BH A2 Adaptive behavioral responses to stress and illness (eg, coping mechanisms)
BH A3 Maladaptive behavioral responses to stress and illness (eg, drug-seeking behavior, sleep deprivation)
BH A4 Patient adherence
BH A4a general adherence
BH A4b adolescent adherence
BH B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis

BH B1 Psychotic disorders
BH B1a brief psychotic disorder
BH B1b delusional disorder
BH B1c psychotic disorder due to another medical condition
BH B1d schizophrenia
BH B1e schizoaffective disorder
BH B1f substance-induced psychotic disorder
BH B2 Anxiety disorders
BH B2a acute stress disorder
BH B2b anxiety disorders (generalized anxiety disorder, anxiety due to another medical condition, social phobia)
BH B2d hyperventilation syndrome
BH B2e obsessive-compulsive disorder
BH B2f panic disorder with and without agoraphobia
BH B2g phobic disorders
BH B2i post-traumatic stress disorder
BH B2j separation anxiety disorder
BH B2k substance-induced anxiety disorder, trichotillomania
BH B3 Mood disorders
BH B3a major depressive disorder with and without psychotic features, with and without seasonal pattern
BH B3b major depressive disorder, postpartum, with and without psychotic features, including screening
BH B3c cyclothymic disorder
BH B3d persistent depressive disorder (dysthymic)
BH B3e bipolar disorder, manic/depressed/mixed
BH B3f premenstrual dysphoric disorder
BH B3g bipolar and related disorder or depressive disorder due to a general medical condition
BH B3h substance/medication induced bipolar and related disorder or depressive
BH B3i suicidal ideation/attempt
BH B4 Somatoform disorders
BH B4a body dysmorphic disorder
BH B4b conversion disorder, including psychogenic seizures
BH B4c dissociative disorders
BH B4d illness anxiety disorder (hypochondriasis)
BH B4e malingering
BH B4f pain disorder
BH B4g somatic symptom disorder
BH B5 factitious disorders
BH B5a factitious disorder imposed on self
BH B6 Eating disorders and impulse control disorders
BH B6a anorexia nervosa
BH B6b binge-eating disorder
BH B6c bulimia nervosa
BH B6d eating disorder
BH B63 disruptive, impulsive-control, and conduct disorders (e.g., gambling, kleptomania, pyromania)
BH B7 Disorders originating in infancy/childhood
BH B7a reactive attachment disorder
BH B7b attention-deficit/hyperactivity disorder
BH B7c speech sound disorder or language disorder
BH B7d learning disorder/dyslexia
BH B7e intellectual development disorder and developmental delay, undefined, including school problems, fetal alcohol syndrome
 BH B7f oppositional defiant disorder, conduct disorder
 BH B7g Asperger Spectrum syndrome, Rhett Syndrome
 BH B7h psychoses with origin specific to childhood
 BH B7i elimination disorders (incontinence, encopresis)
 BH B7j tic disorders/Tourette disorder
 BH B8 Personality disorders:
 BH B8a antisocial personality disorder
 BH B8b avoidant personality disorder
 BH B8c borderline personality disorder
 BH B8d dependent personality disorder
 BH B8e histrionic personality disorder
 BH B8f narcissistic personality disorder
 BH B8g obsessive-compulsive personality disorder
 BH B8h paranoid personality disorder
 BH B8i schizoid personality disorder
 BH B9 Psychosocial disorders/behaviors
 BH B9a adjustment disorder
 BH B9b grief response/bereavement, normal and persistent complex
 BH B9c parent-child relational problems other than physical or emotional abuse
 BH B9d other psychosocial stress
 BH B10 Sexual and gender identity disorders
 BH B10 a gender dysphoria
 BH B10b psychosexual dysfunction
 BH B11 Substance use disorders
 BH B11a alcohol abuse/intoxication/dependence/withdrawal
 BH B11b tobacco/nicotine use disorder/dependence/withdrawal
 **BH B11b1 varenicline use**
 BH B11c cannabis use disorder/intoxication/dependence
 BH B11d hallucinogen use disorder/intoxication/dependence/withdrawal
 BH B11e inhalant use disorder/intoxication/dependence/withdrawal
 BH B11f opioids, heroin, including prescription drug use disorder/intoxication/dependence/withdrawal
 BH B11g sedatives, hypnotic, including benzodiazepine and barbiturate use disorder
 abuse/intoxication/dependence/withdrawal
 BH B11h stimulants, cocaine, methamphetamine use disorder/intoxication/dependence/withdrawal
 BH B11i other drugs use disorder (e.g., ecstasy, PCP, bath salts) abuse/intoxication/dependence/withdrawal
 BH B11j polysubstance use disorder/intoxication/dependence/withdrawal
 **BH B12 Adverse effects of drugs**
 BH B12a steroid-induced psychosis
 BH B12b varenicline and suicide

**Nervous System & Special Senses (NS)**

**NS A Normal Processes**
 NS A1 Embryonic development, fetal maturation, and perinatal changes, including neural tube derivatives, cerebral ventricles, and neural crest derivatives
 NS A2 Organ structure and function
 NS A2a spinal cord
 NS A2a1 gross anatomy and blood supply
NS A2a2 spinal reflexes
NS A2b brain stem (eg, cranial nerves and nuclei, reticular formation, anatomy and blood supply, control of eye movements)
NS A2c brain
NS A2c1 gross anatomy and blood supply
NS A2c2 higher function: cognition, language, memory, executive function
NS A2c3 hypothalamic function
NS A2c4 limbic system and emotional behavior
NS A2c5 circadian rhythm sleep wake disorders
NS A2d sensory systems
NS A2d1 general sensory modalities, including sharp, dull, temperature, vibratory, and proprioception
NS A2d2 special sensory modalities, including vision, hearing, taste, olfaction, and balance
NS A2e motor systems
NS A2e1 brain and spinal cord (upper motoneuron)
NS A2e2 basal ganglia and cerebellum
NS A2f autonomic nervous system
NS A2g peripheral nerves
NS A3 Cell/tissue structure and function, including neuronal cellular and molecular biology
NS A3a axonal transport
NS A3b excitatory properties of neurons, axons, and dendrites, including channels synthesis, storage, release, reuptake, and degradation of neurotransmitters and neuromodulators
NS A3c presynaptic and postsynaptic receptor interactions, trophic and growth factors
NS A3d brain metabolism
NS A3e glia, myelin
NS A3f brain homeostasis
NS A3f1 blood-brain barrier, cerebrospinal fluid formation and flow, choroid plexus
NS A4 Repair, regeneration, and changes associated with stage of life

NS B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis
NS B1 Infectious, immunologic, and inflammatory disorders
NS B1a infectious disorders
NS B1a1 meningitis
NS B1a2 bacterial (Actinomyces israelii; Haemophilus influenzae; Listeria monocytogenes; Mycobacterium tuberculosis; Neisseria meningitidis, Staphylococcus aureus, epidermidis, Streptococcus agalactiae, Streptococcus pneumoniae)
NS B1a3 viral (adenovirus, arboviruses, echovirus and coxsackie A & B viruses, polioviruses, herpes simplex virus, varicella zoster, human immunodeficiency virus, lymphocytic choriomeningitis virus, measles virus, mumps virus, St. Louis encephalitis virus, California encephalitis virus, Western equine encephalitis virus)
NS B1a4 fungal (Blastomycosis dermatitidis, Cryptococcus neoformans/gattii)
NS B1a5 spirochetal (Borrelia burgdorferi; Leptospira; Treponema pallidum, including neurosyphilis)
NS B1a6 protozoal/helminths (Acanthamoeba, Naegleria fowleri, Strongyloides stercoralis, Angiostrongylus cantonensis, Baylisascaris procyonis)
NS B1a7 encephalitis (herpesvirus [HSV], varicella-zoster virus, Epstein-Barr virus, cytomegalovirus, mumps virus, enterovirus, West Nile virus, St. Louis encephalitis virus, rabies virus, Eastern and Western equine encephalitis virus, poliovirus, Taenia, Toxoplasma gondii)
NS B1a8 prion disease (eg, Creutzfeldt-Jakob disease)
NS B1a9 botulism (Clostridium botulinum), tetanus (Clostridium tetani)
NS B1a10 CNS disorders associated with AIDS (eg, progressive multifocal leukoencephalopathy)
NS B1b immunologic and inflammatory disorders
NS B1b1 myasthenia gravis, including thymoma
NS B1b2 multiple sclerosis
NS B1b3 transverse myelitis
NS B2 Neoplasms (cerebral, spinal, and peripheral)
  NS B2a benign (meningioma, neurofibromatosis)
  NS B2b malignant (glioblastoma multiforme, astrocytoma, medulloblastoma, primary CNS lymphoma)
  NS B2c metastatic (eg, breast, lung, pancreatic, testicular, melanoma)
NS B3 Cerebrovascular disease
  NS B3a arteriovenous malformations, ectatic cerebral vessels
  NS B3b transient ischemic attack
  NS B3c stroke, thrombotic: cerebral artery occlusion/cerebral infarction
  NS B3d stroke, embolic: cerebral embolism
  NS B3e stroke: intracerebral hemorrhage, including subarachnoid hemorrhage, traumatic intracranial hemorrhage
  NS B3f cerebral artery aneurysm
  NS B3g carotid artery stenosis/atherosclerosis/occlusion/dissection
  NS B3h vertebral artery deficiency/dissection
  NS B3i subclavian steal syndrome
  NS B3j vascular dementia
  NS B3k hypertensive encephalopathy
  NS B3l posterior reversible encephalopathy syndrome
  NS B3m venous sinus thrombosis
  NS B4 Disorders relating to the spine, spinal cord, and spinal nerve roots
    NS B4a cauda equina syndrome
    NS B4b spinal artery thrombosis/embolus/infarct
    NS B4c spinal cord compression
    NS B4d spinal cord transection, paraplegia and quadriplegia, acute and chronic effects (eg, autonomic dysreflexia)
    NS B4e spinal stenosis (cervical, lumbar)
    NS B4f Syringomyelia
  NS B5 Cranial and peripheral nerve disorders
    NS B5a cranial nerve injury/disorders
      NS B5a1 cranial nerve injury
      NS B5a2 Bell palsy
      NS B5a3 anisocoria, miosis, mydriasis
      NS B5a4 internuclear ophthalmoplegia
      NS B5a5 nystagmus and other irregular eye movements
      NS B5a6 vestibular neuritis, labyrinthitis
      NS B5a7 ptosis of the eyelid
      NS B5a8 Horner syndrome
    NS B5b peripheral nerve/plexus injury/disorders
      NS B5b1 peripheral nerve injury, including brachial plexus
      NS B5b2 carpal/cubital/tarsal/peroneal tunnel syndrome
      NS B5b3 mononeuritis, Guillain-Barré syndrome
      NS B5b4 Miller Fisher syndrome
      NS B5b5 neuropathy (eg, Charcot-Marie-Tooth disease)
      NS B5b6 herpes zoster
    NS B6 Neurologic pain syndromes
      NS B6a complex regional pain syndrome (reflex sympathetic dystrophy, causalgia)
      NS B6b fibromyalgia
      NS B6c postherpetic neuralgia
      NS B6d phantom limb pain/syndrome
      NS B6e thalamic pain syndrome
NS B6f trigeminal neuralgia
NS B7 Degenerative disorders/amnestic syndromes
NS B7a Alzheimer disease
NS B7b Frontotemporal dementia, including Pick disease, progressive supranuclear palsy, Lewy body disease
NS B7c mild neurocognitive disorder, mild cognitive impairment
NS B8 Global cerebral dysfunction
NS B8a altered states of consciousness
NS B8b delirium
NS B8c coma/brain death
NS B9 Neuromuscular disorders
NS B9a amyotrophic lateral sclerosis/spinal muscular atrophy
NS B9b muscular dystrophy (e.g., Duchenne, myotonic)
NS B9c muscle channelopathies (e.g., hypokalemic period paralysis)
NS B10 Movement disorders
NS B10a acute dystonia
NS B10b adult tic disease
NS B10c essential tremor
NS B10d Huntington disease
NS B10e Parkinson disease, including Parkinson dementia
NS B11 Metabolic disorders
NS B11a adrenoleukodystrophy
NS B11b metabolic encephalopathy
NS B12 Paroxysmal disorders
NS B12a headache, including migraine, mixed, tension, ice-pick, cluster, medication withdrawal, caffeine withdrawal seizure disorders, including generalized tonic-clonic, partial, absence, febrile
NS B13 Sleep disorders
NS B13a cataplexy and narcolepsy
NS B13b circadian rhythm sleep-wake disorder
NS B13c insomnia, primary
NS B13d sleep terror disorder and sleepwalking
NS B13e REM sleep behavior disorder
NS B13f restless legs syndrome
NS B14 Traumatic and mechanical disorders and disorders of increased intracranial pressure
NS B14a anoxic brain damage, cerebral hypoxia
NS B14b epidural, subdural hematoma (cerebral and spinal)
NS B14c intraparenchymal hemorrhage, traumatic subarachnoid hemorrhage
NS B14d cerebral edema
NS B14e pseudotumor cerebri (idiopathic intracranial hypertension)
NS B14f torticollis/cervical dystonia
NS B14g hydrocephalus, including normal-pressure
NS B14h traumatic brain injury (concussion)/postconcussion syndrome (dementia pugilistica)
NS B14i traumatic brain syndrome
NS B15 Congenital disorders
NS B15a Friedreich ataxia
NS B15b neural tube defects (e.g., spina bifida, holoprosencephaly, anencephaly)
NS B15c microcephaly
NS B15d Sturge-Weber syndrome
NS B15e Tuberous sclerosis, von Hippel-Lindau disease
NS B15f hydrocephalus, obstructive (Arnold-Chiari)
NS B16 Adverse effects of drugs on the nervous system
NS B16a acute dystonic reaction
NS B16b drug-induced meningitis (eg, NSAIDs, sulfa drugs)
NS B16c drug-induced neuropathy (eg, vincristine, isoniazid, metronidazole)
NS B16d extrapyramidal adverse effects (eg, akathisia, dystonia, drug-induced Parkinsonism)
NS B16e neuroleptic malignant syndrome
NS B16f poisoning by psychotropic agents, including antidepressants
NS B16g serotonin syndrome
NS B16h tardive dyskinesia
NS B17 Disorders of the eye and eyelid
NS B17a infectious and inflammatory disorders of the eye
NS B17a1 blepharitis/eyelid inflammation
NS B17a2 chalazion
NS B17a3 chorioretinitis
NS B17a4 conjunctivitis (adenovirus)/keratoconjunctivitis
NS B17a5 dacryocystitis
NS B17a6 endophthalmitis
NS B17a7 hordeolum
NS B17a8 iridocyclitis
NS B17a9 optic neuritis
NS B17a10 peri orbital cellulitis
NS B17a11 uveitis
NS B17b neoplasms of the eye
NS B17b1 melanoma
NS B17b2 retinoblastoma
NS B17c disorders of the eye and eyelid, structural
NS B17c1 cataract
NS B17c2 glaucoma
NS B17c3 lacrimal system disorders
NS B17c4 pterygium
NS B17c5 refractive disorders (presbyopia, myopia, hyperopia, astigmatism)
NS B17d disorders of the pupil, iris, muscles (extraocular)
NS B17d1 amblyopia
NS B17d2 strabismus
NS B17e disorders of the retina
NS B17e1 hypertensive retinopathy
NS B17e2 macular degeneration
NS B17e3 papilledema
NS B17e4 retinal detachment
NS B17e5 retinitis pigmentosa
NS B17e6 vascular disorders affecting the retina, including central retinal artery embolus, retinal hemorrhage, amaurosis fugax, embolus, carotid artery stenosis, central retinal vein occlusion;
NS B17e7 visual impairment/blindness, night blindness
NS B17f traumatic and mechanical disorders
NS B17f1 black eye
NS B17f2 burn of the eye and adnexa
NS B17f3 corneal abrasion, ulcer
NS B17f4 dislocated lens
NS B17f5 foreign body in eye
NS B17f6 hyphema
NS B17f7 injury to optic nerve and pathways
NS B17f8 laceration of the eye and eyelid
NS B17f9 ocular open wounds
NS B17f10 orbital fracture
NS B17f11 subconjunctival hemorrhage
NS B17g adverse effects of drugs on the eyes
NS B17g1 ethambutol
NS B17g2 hydroxychloroquine
NS B17g3 prednisone
NS B18 Disorders of the ear
NS B18a infectious and inflammatory disorders of the ear
NS B18a1 chondritis
NS B18a2 mastoiditis
NS B18a3 otitis, externa, media, interna, serous, suppurative, malignant otitis externa
NS B18b neoplasms
NS B18b1 acoustic neuroma, neurofibromatosis type 2
NS B18b2 cholesteatoma
NS B18c hearing loss/deafness
NS B18c1 hearing loss, including noise induced
NS B18c2 otosclerosis
NS B18c3 tinnitus
NS B18d disorders of balance and spatial orientation
NS B18d1 Ménière disease
NS B18d2 motion sickness
NS B18d3 vertigo, including benign positional vertigo
NS B18e traumatic and mechanical disorders
NS B18e1 barotrauma
NS B18e2 foreign body in ear
NS B18e3 impacted cerumen
NS B18e4 laceration, avulsion
NS B18e5 perforation of tympanic membrane
NS B18e6 eustachian tube disorders
NS B18f adverse effects of drugs on the ear
NS B18f1 antineoplastic agents, including cisplatin
NS B18f2 aminoglycosides
NS B18f3 furosemide
NS B18f4 salicylates

Skin & Subcutaneous Tissue (SK)
SK A Normal Processes
SK A1 Embryonic development, fetal maturation, and neonatal changes
SK A2 Organ structure and function, including barrier function, thermal regulation
SK A3 Cell/tissue structure and function, eccrine function
SK A4 Repair, regeneration, and changes associated with stage of life (eg, senile purpura, male pattern baldness, postmenopausal hair changes)
SK A5 Skin defense mechanisms and normal flora

SK B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis
SK B1 Infectious, immunologic, and inflammatory disorders
SK B1a infectious disorders and infestations
SK B1a1 bacterial
SK B1a1a cellulitis, erysipelas, impetigo, staphylococcal scalded skin syndrome
SK B1a1b abscess, cutaneous, including septic abscess
SK B1a1c anthrax (Bacillus anthracis)
SK B1a1d carbuncle
SK B1a1e folliculitis
SK B1a1f pilonidal cyst, infected
SK B1a1g pyoderma gangrenosum
SK B1a1h MSSA and MRSA skin infections
SK B1a1i mycobacterial infections (eg, leprosy, draining sinus)
SK B1a1j scarlet fever (group A Streptococcus)
SK B1a2 viral
SK B1a2a herpes simplex type 1 & type 2, herpes zoster, Ramsay-Hunt syndrome
SK B1a2b molluscum contagiosum
SK B1a2c hand-foot-and-mouth disease
SK B1a2d herpangina
SK B1a2e parvovirus
SK B1a2f chickenpox, erythema infectiosum (fifth disease), rubella, measles, roseola (exanthema subitum)
SK B1a2g verrucae vulgaris
SK B1a3 fungal (deep and superficial)
SK B1a3a candidiasis, skin
SK B1a3b dermatophytosis, tinea corporis
SK B1a3c dermatomycoses
SK B1a3d diaper rash
SK B1a3e onychomycosis
SK B1a4 parasitic
SK B1a4a cutaneous larva migrans
SK B1a4b cutaneous leishmaniasis
SK B1a5 infestations, nonvenomous bites, stings
SK B1a5a scabies
SK B1a5b lice
SK B1a5c insect bites, including bed bugs
SK B1b immunologic and inflammatory disorders
SK B1b1 papulosquamous and eczematous dermatoses
SK B1b1a psoriasis
SK B1b1b lichen planus and lichenoid dermatoses
SK B1b1c allergic/irritant contact dermatitis (eg, nickel)
SK B1b1d dermatoses caused by plants (poison ivy, poison oak)
SK B1b2 vesiculobullous disorders
SK B1b2a epidermolysis bullosa
SK B1b2b dermatitis herpetiformis
SK B1b2c pemphigus
SK B1b2d pemphigoid
SK B1b3 urticaria, erythema, exanthema, and purpura
SK B1b3a erythema nodosum
SK B1b3b atopic dermatitis
SK B1b3c pityriasis rosea
SK B1b3d urticaria
SK B1b3e Stevens-Johnson syndrome, erythema multiforme, toxic epidermal necrolysis
SK B1b4 autoimmune disorders
SK B1b4a vitiligo
SK B2 Neoplasms
SK B2a benign neoplasms, cysts and other skin lesions
SK B2a1 actinic keratoses
SK B2a2 cysts, including epidermal
SK B2a3 hemangiomas
SK B2a4 lipoma
SK B2a5 pigmented nevi
SK B2a6 seborrheic keratosis
SK B2a7 xanthomas
SK B2b malignant neoplasms
SK B2b1 basal cell carcinoma
SK B2b2 squamous cell carcinoma
SK B2b3 melanoma, including genital
SK B2b4 Kaposi sarcoma
SK B2b5 cutaneous T-cell lymphoma, mycosis fungoides
SK B3 Adnexal disorders (hair and hair follicles, nails, sweat glands, sebaceous glands, oral mucous membranes)
SK B3a disorders of the hair and hair follicles
SK B3a1 alopecia
SK B3a2 seborrhea capitis/seborrheic dermatitis
SK B3a3 tinea barbae and capitis
SK B3b disorders of the nails (including ingrowing nail)
SK B3c disorders of sweat and sebaceous glands
SK B3c1 acne vulgaris
SK B3c2 hidradenitis suppurativa
SK B3c3 hyperhidrosis
SK B3c4 ichthyosis
SK B3c5 rosacea
SK B4 Oral disease
SK B4a aphthous ulcers (stomatitis, canker sores)
SK B4b leukoplakia
SK B5 Disorders of pigmentation
SK B5a albinism
SK B5b lentigo
SK B6 Traumatic and mechanical disorders
SK B6a animal bites (dogs, cats, etc); burns or wounds affecting the skin or subcutaneous tissue (eg, sunburn, other including blast injuries and burns)
SK B6b cauliflower ear
SK B6c effects of ultraviolet light
SK B6d keloids
SK B6e tattoo
SK B6f thermal injury, perniosis, frostbite
SK B6g ulcers, decubitus
SK B7 Congenital disorders
SK B7a xeroderma pigmentosum
SK B7b benign lesions in neonates, infants, children (eg, congenital nevi)
SK B8 Adverse effects of drugs on skin and subcutaneous tissue
SK B8a drug reactions, eruptions, including local reaction to vaccine
**Musculoskeletal System (MS)**

**MS A Normal processes**
MS A1 Embryonic development, fetal maturation, and perinatal changes
MS A2 Organ structure and function
MS A3 Cell/tissue structure and function
MS A3a biology of bones, joints, tendons, skeletal muscle, cartilage exercise and physical conditioning/deconditioning
MS A4 Repair, regeneration, and changes associated with stage of life

**MS B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis**
MS B1 Infectious, inflammatory, and immunologic disorders
MS B1a infectious disorders
MS B1a1 gangrene, dry and wet, clostridial myonecrosis (Clostridium perfringens)
MS B1a2 discitis
MS B1a3 myositis, infective
MS B1a4 necrotizing fasciitis
MS B1a5 osteomyelitis
MS B1a6 septic arthritis
MS B1a7 spondylitis, tuberculosis
MS B1b immunologic disorders
MS B1b1 ankylosing spondylitis
MS B1b2 dermatomyositis/polymyositis
MS B1b3 juvenile idiopathic arthritis
MS B1b4 rheumatoid arthritis, Felty syndrome
MS B1b5 psoriatic arthropathy
MS B1c inflammatory disorders
MS B1c1 adhesive capsulitis of shoulder (frozen shoulder syndrome)
MS B1c2 ankylosis/spondylopathy (inflammatory)
MS B1c3 bursitis
MS B1c4 fasciitis
MS B1c5 osteochondritis, osteochondritis dissecans
MS B1c6 tendinitis, supraspinatus syndrome, enthesopathy of spine, elbow, ankle
MS B1c7 temporomandibular joint disorders
MS B1c8 fibrositis, myofascial pain syndrome
MS B1c9 synovitis
MS B1c10 tenosynovitis
MS B1c11 myositis
MS B2 Neoplasms
MS B2a benign neoplasms (e.g., ganglion cyst)
MS B2b malignant neoplasms of bone (e.g., osteosarcoma, sarcoma, leiomyosarcoma, rhabdosarcoma)
MS B2c metastases to bone, secondary malignant neoplasm of bone
MS B3 Degenerative and metabolic disorders
MS B3a degenerative/metabolic disorders of bone, tendon, and cartilage
MS B3a1 chondromalacia
MS B3a2 disc degeneration, herniated disc
MS B3a3 Legg-Calvé-Perthes disease
MS B3a4 Osgood-Schlatter disease
MS B3a5 osteodystrophy
MS B3a6 osteomalacia
MS B3a7 osteonecrosis (avascular), bone infarct
MS B3a8 osteoporosis
MS B3a9 osteopenia
MS B3a10 osteitis deformans (Paget disease of bone)
MS B3a11 pathologic fracture
MS B3a12 spondylolisthesis/spondylosis (degenerative)
MS B3a13 radiculopathies
MS B3b degenerative/metabolic disorders of joints
MS B3b1 gout, gouty arthritis, pseudogout
MS B3b2 joint effusion
MS B3b3 osteoarthritis
MS B3c degenerative/metabolic disorders of muscles, ligaments, fascia
MS B3c1 Dupuytren contracture
MS B3c2 muscle calcification and ossification
MS B3c3 muscle wasting and diffuse atrophy
MS B3c4 rhabdomyolysis
MS B4 Traumatic and mechanical disorders
MS B4a amputation and care of amputees
MS B4b backache, including low back pain; blast injuries
MS B4c contractures, hospital-acquired
MS B4d contusions
MS B4e dislocations
MS B4f fractures
MS B4g sprains, strains
MS B4h kyphoscoliosis, scoliosis
MS B4i rotator cuff syndrome
MS B4j slipped capital femoral epiphysis
MS B4k dislocation of hip
MS B5 Congenital disorders
MS B5a achondroplasia/dwarfism
MS B5b disorders of limb development (HOX gene mutation, phocomelia)
MS B5c developmental dysplasia of the hip
MS B5d dislocation of hip in infantile spinal muscular atrophy
MS B5e genu valgum or varum
MS B5f foot deformities (flat foot, valgus/varus deformities)
MS B5g osteogenesis imperfecta
MS B5h McArdle disease
MS B5i mitochondrial myopathies
MS B6 Adverse effects of drugs on the musculoskeletal system
MS B6a drug-induced myopathy (eg, steroids, statins, cocaine, AZT)
MS B6b malignant hyperthermia

**Cardiovascular System (CV)**

**CV A Normal Processes**
CV A1 Embryonic development, fetal maturation, and perinatal transitional changes
CV A2 Organ structure and function
CV A2a chambers, valves
CV A2b cardiac cycle, mechanics, heart sounds, cardiac conduction
CV A2c hemodynamics, including blood volume and systemic vascular resistance
CV A2d circulation in specific vascular beds, including pulmonary and coronary
CV A3 Cell/tissue structure and function
CV A3a heart muscle, metabolism, oxygen consumption, biochemistry, and secretory function (e.g., atrial natriuretic peptide)
CV A3b endothelium and secretory function, vascular smooth muscle, microcirculation, and lymph flow
CV A3c neural and hormonal regulation of the heart, blood vessels, and blood volume, including responses to change in posture, exercise, and tissue metabolism, and autonomic responses
CV A4 Repair, regeneration, and changes associated with stage of life

CV B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis
CV B1 Infectious, immunologic, and inflammatory disorders
CV B1a infectious disorders
CV B1a1 bacterial endocarditis, myocarditis
CV B1a2 immunologic and inflammatory disorders
CV B1a3 atherosclerosis (e.g., atherosclerosis of the aorta)
CV B2 Neoplasms
CV B2a myxoma, metastases
CV B3 Dysrhythmias
CV B3a premature beats (PACs, PVCs)
CV B3b atrial flutter/fibrillation
CV B3c multifocal atrial tachycardia
CV B3d paroxysmal tachycardias
CV B3e ventricular tachycardia/fibrillation
CV B3f wide complex tachycardia
CV B3g torsades de pointes
CV B3h bradycardias
CV B3i atrioventricular block (first-, second-, third-degree)
CV B3j conduction disorder (LBBB, RBBB)
CV B3k cardiac arrest
CV B3l sick sinus syndrome
CV B3m prolonged QT syndrome
CV B3n Wolff-Parkinson-White syndrome
CV B3o carotid sinus hypersensitivity
CV B3p pacemaker dysfunction, including failure to sense, capture
CV B4 Heart failure
CV B4a chordae tendineae rupture
CV B4b congestive heart failure
CV B4c cor pulmonale
CV B4d diastolic dysfunction
CV B4e systolic dysfunction
CV B4f mitral valve dysfunction
CV B4g heart failure secondary to myocardial infarction
CV B4h high-output heart failure, including thyrotoxicosis-induced, anemia-induced
CV B4i tachycardia-induced
CV B4j cardiogenic pulmonary edema
CV B5 Ischemic heart disease
CV B5a acute coronary syndrome, acute myocardial infarction
CV B5b angina pectoris, stable and unstable/coronary artery disease/coronary insufficiency
CV B5c coronary artery spasm
CV B6 Diseases of the myocardium
CV B6a cardiomyopathy, dilated, including alcoholic, viral, takotsubo
CV B6b cardiomyopathy, obstructive hypertrophic
CV B6c cardiomyopathy, familial dilated
CV B6d cardiomyopathy, restrictive
CV B6e hypertensive heart disease, left ventricular hypertrophy, right ventricular hypertrophy
CV B6f complications of myocardial infarction
CV B6g non traumatic tamponade post-myocardial infarction
CV B6h papillary muscle rupture/dysfunction
CV B6i ventricular free wall rupture
CV B6j myocarditis
CV B7 Diseases of the pericardium
CV B7a chronic constrictive pericarditis
CV B7b pericardial effusion
CV B7c pericardial tamponade
CV B7d acute pericarditis
CV B7e pericarditis, following myocardial infarction, surgery, trauma
CV B8 Valvular heart disease
CV B8a valve disorders, mitral/aortic/tricuspid/pulmonic (e.g., regurgitation, stenosis, prolapse, insufficiency, vegetation)
CV B8b mitral valve prolapse
CV B8c functional murmurs
CV B8d rheumatic heart disease
CV B8e complications of artificial valve
CV B9 Hypotension
CV B9a orthostatic hypotension
CV B10 Hypertension
CV B10a elevated blood pressure reading without diagnosis of hypertension
CV B10b essential hypertension
CV B10c malignant hypertension
CV B10d secondary hypertension
CV B11 Dyslipidemia
CV B11a hypercholesterolemia
CV B11b hyperlipidemia
CV B11c hypertriglyceridemia
CV B11d lipoproteins/lipoprotein lipase deficiency
CV B12 Vascular disorders
CV B12a disorders of the great vessels
CV B12a1 aneurysm, aortic (abdominal/thoracic), dissection, ruptured
CV B12a2 aneurysm, iliac, other peripheral vascular, ruptured
CV B12a3 aortoiliac disease
CV B12b peripheral arterial vascular disease
CV B12b1 arterial embolus/thrombosis
CV B12b2 arteriovenous fistula
CV B12b3 atheroembolic disease
CV B12b4 claudication
CV B12b6 cholesterol emboli
CV B12b7 hypertensive vascular disease
CV B12b8 peripheral arterial disease
CV B12b9 thromboangiitis obliterans
CV B12c diseases of the veins
CV B12c1 deep venous thrombosis, venous thromboembolism
CV B12c2 phlebitis/thrombophlebitis
CV B12c3 varicose veins  
CV B12c4 venous insufficiency  
CV B12c5 stasis ulcers, stasis dermatitis  
CV B13 Traumatic and mechanical disorders  
CV B13a ventricular puncture  
CV B13b myocardial contusion  
CV B13d myocardial rupture  
CV B13e traumatic aortic dissection  
CV B13f traumatic tamponade  
CV B14 Congenital disorders, including disease in adults  
CV B14a anomalous left coronary artery  
CV B14b atrial septal defect  
CV B14c coarctation of the aorta  
CV B14d endocardial cushion defect  
CV B14e patent foramen ovale  
CV B14f patent ductus arteriosus  
CV B14g tetralogy of Fallot  
CV B14h transposition of the great vessels  
CV B14i ventricular septal defect  
CV B15 Adverse effects of drugs on the cardiovascular system  
CV B15a adriamycin  
CV B15b cocaine, amphetamine, PCP  
CV B15c ACE inhibitors, calcium channel blockers, alpha blockers, minoxidil

**Respiratory System (RS)**

**RS A Normal Processes**
- RS A1 Embryonic development, fetal maturation, and perinatal changes
- RS A2 Organ structure and function
  - RS A2a airways, including mechanics and regulation of breathing lung parenchyma, including ventilation, perfusion, gas exchange pleura nasopharynx, sinuses
- RS A3 Cell/tissue structure and function, including surfactant formation, and alveolar structure
- RS A4 Repair, regeneration, and changes associated with stage of life
- RS A5 Pulmonary defense mechanisms and normal flora

**RS B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis**
- RS B1 Infectious, immunologic, and inflammatory disorders
  - RS B1a infectious, immunologic, and inflammatory disorders of the upper airways
  - RS B1a1 acute upper respiratory infection
  - RS B1a2 viral infections (adenovirus, coronaviruses, coxsackievirus, influenza virus, parainfluenza virus, rhinoviruses)
  - RS B1a3 sinusitis
  - RS B1a4 nasopharyngitis
  - RS B1a5 epiglottitis
  - RS B1a6 croup
  - RS B1a7 acute laryngitis
  - RS B1a8 acute laryngotracheitis
  - RS B1a9 tracheitis
  - RS B1a10 pharyngitis
  - RS B1a11 streptococcal throat infections
RS B1a12 tonsillitis
RS B1a13 peritonsillar abscess
RS B1a14 rhinitis, allergic, chronic
RS B1a15 ulcers of nasal cavity/sinuses
RS B1a16 Bordetella pertussis pneumonia
RS B1b infectious, immunologic, and inflammatory disorders of the lower airways
**RS B1b1 hospital acquired pneumonia**
RS B1b2 ventilator-associated pneumonia, community-acquired pneumonia, acute bronchiolitis
RS B1b3 bronchiolitis obliterans with organizing pneumonia (BOOP)
RS B1b4 anthrax, pulmonary (Bacillus anthracis)
RS B1b5 aspiration pneumonia, pneumonitis
RS B1b6 bronchitis, acute
RS B1b7 bronchopneumonia
RB B1b8 pneumonia (Bordetella pertussis, Burkholderia pseudomallei, Chlamydophila pneumoniae, Coxiella burnetii, Francisella tularensis, Haemophilus influenza, Klebsiella pneumoniae, Legionella, Moraxella catarrhalis, Mycoplasma pneumoniae, Pseudomonas aeruginosa, Streptococcus, MSSA, MRSA, other gram-negative bacteria)
RS B1b9 viral infection (eg, influenza A, B, adenovirus, H1N1, respiratory syncytial virus, parainfluenza virus)
RS B1b10 fungal infection (aspergillosis, including allergic bronchopulmonary aspergillosis and aspergilloma, histoplasmosis, coccidioidomycosis, Pneumocystis jirovecii)
RS B1b11 lung abscess
RS B1b12 viral infection (eg, influenza A, B, adenovirus, respiratory syncytial virus, parainfluenza virus, avian influenza virus)
RS B1b13 fungal infection (aspergillosis, including allergic bronchopulmonary aspergillosis and aspergilloma, histoplasmosis, coccidioidomycosis, Pneumocystis jirovecii)
RS B1b14 pulmonary tuberculosis
RS B2 Neoplasms
RS B2a benign neoplasms
RS B2a1 upper airways (eg, vocal cord polyps, nasal polyps, juvenile papillomatosis)
RS B2a2 lungs and pleura (eg, solitary pulmonary nodule, bronchial carcinoid tumors)
RS B2b malignant neoplasms
RS B2b1 upper airways
RS B2b1a lip, oral cavity, and pharynx
RS B2b1b head and neck cancer
RS B2b1c larynx
RS B2b1d trachea
RS B2b2 lower airways and pleura
RS B2b2a malignant neoplasms of bronchus and/or lung (squamous cell, adenocarcinoma, large cell, small cell)
RS B2b2b malignant neoplasms of pleura (mesothelioma)
RS B2b2c secondary malignant neoplasms of lung
RS B2b2d secondary malignant neoplasms of pleura
RS B2b3 metastatic neoplasms including pleural
RS B2c Obstructive airway disease
RS B2c1 asthma, reactive airway disease
RS B2c2 bronchiectasis
RS B2c3 chronic airway obstruction
RS B2c4 chronic obstructive pulmonary disease (COPD), chronic bronchitis, emphysema
RS B2d Pneumoconiosis/fibrosing/restrictive pulmonary disorders/interstitial lung disease
RS B2d1 pneumoconiosis
RS B2d2 asbestosis
RS B2d3 silicosis
RS B2d4 silo-filler’s lung, byssinosis, bagassosis, berylliosis
RS B2d5 hypersensitivity pneumonitis
RS B2d6 hypereosinophilic syndromes, Loeffler syndrome
RS B2d7 interstitial pneumonia, usual (UIP), desquamative (DIP), nonspecific
RS B2e Respiratory failure/respiratory arrest and pulmonary vascular disorders
RS B2e1 acute respiratory distress syndrome (ARDS)
RS B2e2 pulmonary hypertension
RS B2e3 pulmonary vascular disorders, arteriovenous fistula
RS B2e4 pulmonary edema, pulmonary cause and unspecified
RS B2e5 pulmonary embolism
RS B2e6 air and fat embolism
RS B2e7 respiratory failure due to enteral feeding
RS B2f Metabolic, regulatory, and structural disorders
RS B2f1 disorders of gas exchange
RS B2f2 hypoventilation
RS B2f3 hypoxia
RS B2f4 pulmonary alveolar proteinosis
RS B2f5 ventilation-perfusion imbalance
RS B2g Disorders of the pleura, mediastinum, and chest wall
RS B2g1 chylothorax
RS B2g2 costochondritis
RS B2g3 empyema
RS B2g4 hemothorax
RS B2g5 mediastinitis
RS B2g6 pleural effusion
RS B2g7 pleuritis
RS B2g8 pneumomediastinum
RS B2g9 pneumothorax
RS B2h Traumatic and mechanical disorders
RS B2h1 upper airways
RS B2h1a epistaxis
RS B2h1b barotrauma, sinus
RS B2h1c laryngeal/pharyngeal obstruction
RS B2h1d tracheoesophageal fistula
RS B2h1e tracheal stenosis
RS B2h1f tracheomalacia
RS B2h1g trauma (eg, tracheal injury)
RS B2h1h foreign body (nose, pharynx, larynx, trachea)
RS B2h1i traumatic/mechanical disorders of the nasal cavity/sinuses (eg, septal perforation)
RS B2h2 lower airways and pleura
RS B2h2a atelectasis
RS B2h2b diaphragm/chest wall injury
RS B2h2c drowning and near drowning
RS B2h2d foreign body, upper and lower respiratory tract
RS B2h2e penetrating chest wounds
RS B2h2f pulmonary contusion
RS B2h2g sleep apnea, obstructive and central
RS B2h2h hypoventilation syndrome, obesity-hypoventilation syndrome
RS B2i Congenital disorders
RS B2i1 bronchogenic cysts
RS B2i2 congenital cysts
RS B2i3 congenital diaphragmatic hernia
RS B2i4 pulmonary sequestration
RS B2i5 immotile cilia syndrome
RS B2j Adverse effects of drugs on the respiratory system
RS B2j1 bleomycin, amiodarone
RS B2j2 adverse effects of 100% oxygen
RS B1j3 acute effects of tobacco/nicotine, inhalants, cocaine

Gastrointestinal System (GI)

GI A Normal Processes
GI A1 Embryonic development, fetal maturation, and perinatal changes
GI A2 Organ structure and function
GI A2a anatomy of the alimentary canal, including mouth, pharynx, esophagus, stomach, small intestine, large intestine, anus, peritoneal cavity
GI A2b liver and biliary system, including enterohepatic circulation
GI A2c salivary glands and exocrine pancreas
GI A2d gastrointestinal motility, including defecation digestion and absorption
GI A3 Cell/tissue structure and function
GI A3a endocrine and neural regulatory functions, including GI hormones (eg, gastrin)
GI A3b salivary, gastrointestinal, pancreatic, hepatic secretory products, including enzymes, proteins, bile salts, and processes
GI A3c synthetic and metabolic functions of hepatocytes
GI A4 Repair, regeneration, and changes associated with stage of life
GI A5 Gastrointestinal defense mechanisms and normal flora

GI B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis
GI B1 Infectious, immunologic, and inflammatory disorders
GI B1a infectious disorders
GI B1a1 bacterial
GI B1a1a pseudomembranous colitis (Clostridium difficile)
GI B1a1b enteritis/enteric infections (includes gastroenteritis) (eg, Staphylococcus aureus, Escherichia coli, Listeria monocytogenes, Yersinia enterocolitica, Campylobacter species, Vibrio cholerae, Salmonella species, Shigella species, traveler’s/infectious diarrhea)
GI B1a1c hepatic abscess, subhepatic abscess, subphrenic abscess
GI B1a1d peritonitis, primary and secondary
GI B1a1e Whipple disease
GI B1a2 viral
GI B1a2a infectious esophagitis (eg, CMV, herpes)
GI B1a2b hepatitis A, B, C, D, E
GI B1a2c coxsackievirus enteritis/colitis
GI B1a2d Echovirus enteritis/colitis
GI B1a2e rotavirus enteritis
GI B1a2f mumps
GI B1a2g gingivostomatitis, herpetic
GI B1a3 fungal: thrush
GI B1a4 parasitic
GI B1a4a Cryptosporidium, Cyclospora, Entamoeba histolytica, Giardia, Isospora belli, Strongyloides stercoralis
GI B1b immunologic and inflammatory disorders
GI B1b1 autoimmune hepatitis
GI B1b2 celiac disease
GI B1b3 eosinophilic esophagitis
GI B1b4 granulomatous enteritis
GI B1b5 inflammatory bowel disease
GI B1b6 including Crohn disease, regional enteritis, microscopic colitis (collagenous and lymphocytic colitis), ulcerative colitis, toxic megacolon

GI B2 Neoplasms
GI B2a benign neoplasms, including polyps, cysts
GI B2a1 stomach
GI B2a2 small intestine
GI B2a3 colon, rectum, and anus, including polyps
GI B2b malignant neoplasms and pre-malignant conditions
GI B2b1 oral cancer (eg, lips, mouth, tongue, salivary glands)
GI B2b2 esophageal, squamous and adenocarcinoma
GI B2b3 Barrett esophagus
GI B2b4 gastrinoma, Zollinger-Ellison syndrome
GI B2b5 gastrointestinal carcinoid tumors
GI B2b6 gastrointestinal stromal tumors
GI B2b7 small intestine
GI B2b8 stomach, adenocarcinoma, lymphoma, MALT
GI B2b9 colon, rectum, anus
GI B2b10 hereditary colon cancer syndromes, familial adenomatous polyposis (eg, Peutz-Jeghers syndrome, Gardner syndrome, Turcot syndrome)
GI B2b11 MUTYH-associated polyposis
GI B2b12 gallbladder, cholangiocarcinoma, adenocarcinoma of the ampulla of Vater
GI B2b13 liver, including hepatoma
GI B2b14 peritoneal cancer, including metastatic studding with cancer
GI B2b15 pancreas
GI B2c metastatic neoplasms
GI B3 Signs, symptoms, and ill-defined disorders
GI B3a upper gastrointestinal bleeding
GI B3b lower gastrointestinal bleeding
GI B3c constipation
GI B3d diarrhea
GI B3e hematochezia
GI B3f bright red rectal bleeding
GI B3g melena
GI B3h nausea, vomiting, rumination
GI B4 Disorders of the oral cavity, salivary glands, and esophagus
GI B4a oral cavity and salivary glands
GI B4a1 abscessed tooth
GI B4a2 dental caries
GI B4a3 malocclusion
GI B4a4 disorders of the salivary glands (eg, stones, sialadenitis, parotitis)
GI B4b esophagus
GI B4b1 achalasia and cardiospasm
GI B4b2 dysphagia
GI B4b3 diverticulum (eg, Zenker)
GI B4b4 esophageal periapical abscess without sinus
GI B4b5 esophagitis/esophageal reflux (GERD)
GI B4b6 esophagitis, pill
GI B4b7 Mallory-Weiss syndrome
GI B4b8 paraesophageal (hiatal) hernia
GI B4b9 stricture and stenosis of esophagus
GI B5 Disorders of the stomach, small intestine, colon, rectum, anus
GI B5a stomach
GI B5a1 dyspepsia/hyperacidity
GI B5a2 gastric ulcer
GI B5a3 gastritis
GI B5a4 peptic ulcer
GI B5a5 peptic ulcer perforation
GI B5a6 gastroparesis
GI B5b small intestine, colon
GI B5b1 appendicitis
GI B5b2 angiodysplasia
GI B5b3 diverticula, diverticulitis, diverticulosis
GI B5b4 duodenitis, duodenal ulcer, peptic ulcer
GI B5b5 gastroenteritis and colitis (noninfectious)
GI B5b6 granulomatous enterocolitis
GI B5b7 Hirschsprung disease
GI B5b7a impaction of intestine
GI B5b7b intestinal obstruction/stricture
GI B5b7c intussusception
GI B5b7d irritable colon/irritable bowel syndrome
GI B5b7e mesenteric ischemia/ischemic bowel/ischemic colitis
GI B5b7f necrotizing enterocolitis
GI B5b7g paralytic ileus
GI B5b7h volvulus
GI B5b7i malnutrition and malabsorption, including lactose intolerance, short bowel syndrome
GI B5b8 rectum and anus
GI B5b8a abscess of anal and rectal regions
GI B5b8b anal fissure
GI B5b8c anal fistula
GI B5b8d ulcer
GI B5b8e fecal incontinence
GI B5b8f hemorrhage (rectum, anus)
GI B5b8g proctitis
GI B5b8h hemorrhoids
GI B5b8i rectal prolapse
GI B6 Disorders of the liver and biliary system, noninfectious
GI B6a liver
GI B6a1 cirrhosis
GI B6a2 Dubin-Johnson, Rotor syndromes
GI B6a3 end-stage liver disease, including indications for transplantation
GI B6a4 Gilbert syndrome, Crigler-Najjar syndrome
GI B6a5 hepatic coma/hepatic encephalopathy
GI B6a6 hepatitis, noninfectious
GI B6a7 hepatitis, fatty liver, alcoholic
GI B6a8 hepatorenal syndrome
GI B6a9 hepatopulmonary syndrome
GI B6a10 jaundice
GI B6a11 nonalcoholic fatty liver disease
GI B6a12 portal hypertension/esophageal varices
GI B6b biliary system
GI B6b1 bile duct obstruction/cholestasis
GI B6b2 cholangitis, including ascending
GI B6b3 choledocholithiasis
GI B6b4 cholelithiasis/cholecystitis
GI B6b5 cholestasis due to parenteral nutrition
GI B6b6 gallstone ileus
GI B6b7 Mirizzi syndrome
GI B6b8 primary biliary cirrhosis
GI B6b9 primary sclerosing cholangitis
GI B7 Disorders of the pancreas
GI B7a pancreatitis, acute
GI B7b pancreatitis, chronic
GI B7c pancreatitis, hereditary
GI B7d pancreatic cyst/pseudocyst
GI B7e pancreatic duct obstruction
GI B7f pancreatic insufficiency
GI B8 Disorders of the peritoneal cavity
GI B8a ascites
GI B9 Traumatic and mechanical disorders
GI B9a abdominal wall defects
GI B9b adhesions, postsurgical
GI B9c digestive system complications of surgery
GI B9d post-gastric surgery syndromes (eg, blind loop syndrome, adhesions)
GI B9e duodenal tear
GI B9f foreign body in digestive system
GI B9g inguinal, femoral, and abdominal wall hernias
GI B9h open wound, abdominal
GI B9i perforation of hollow viscus and blunt trauma
GI B9j perforation/rupture of esophagus (Boerhaave syndrome)
GI B9k umbilical hernia
GI B10 Congenital disorders
GI B10a annular pancreas, biliary atresia
GI B10b biliary atresia
GI B10c cleft lip and palate, esophageal atresia
GI B10d esophageal atresia
GI B10e malrotation without volvulus, Meckel diverticulum, pyloric stenosis, tracheoesophageal fistula
GI B10f Meckel diverticulum
GI B10g pyloric stenosis, gastric outlet obstruction
GI B10h tracheoesophageal fistula
GI B11 Adverse effects of drugs on the gastrointestinal system
GI B11a drug-induced changes in motility (chronic laxative abuse, opioids)
GI B11b drug-induced gastritis, duodenitis, peptic ulcer disease (NSAIDs)
GI B11c drug-induced hepatitis (eg, acetaminophen, isoniazid)
GI B11d drug-induced pancreatitis (eg, thiazide diuretics)
**Renal & Urinary System (RU)**

**RU A Normal Processes**
- RU A1 Embryonic development, fetal maturation, and perinatal changes
- RU A2 Organ structure and function
- RU A2a kidneys, ureters, bladder, urethra
- RU A2b glomerular filtration and hemodynamics
- RU A2c urine concentration and dilution
- RU A2d renal mechanisms in acid-base balance
- RU A2e renal mechanisms in body fluid homeostasis
- RU A2f micturition
- RU A3 Cell/tissue structure and function
- RU A3a renal metabolism and oxygen consumption
- RU A3b tubular reabsorption and secretion, including transport processes and proteins
- RU A3c hormones produced by or acting on the kidney (eg, renin, aldosterone, angiotensin II, vasopressin)
- RU A4 Repair, regeneration, and changes associated with stage of life

**RU B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis**
- RU B1 Infectious, immunologic, and inflammatory disorders
  - RU B1a infectious disorders
  - RU B1a1 upper urinary tract
  - RU B1a1a granulomatous pyelonephritis
  - RU B1a1b perinephric abscess
  - RU B1a1c pyelonephritis
  - RU B1a1d pyonephrosis
  - RU B1a1e renal abscess
  - RU B1a1f renal tuberculosis
  - RU B1a2 lower urinary tract and urinary tract infections of unspecified location
    - RU B1a2a cystitis
    - RU B1a2b chlamydial and nonchlamydial
  - RU B1b immunologic and inflammatory disorders
    - RU B1b1 upper urinary tract
    - RU B1b1a glomerular disorders
    - RU B1b1a1 Alport syndrome
    - RU B1b1a2 glomerular disease due to hepatitis B, C
    - RU B1b1a3 glomerulonephritis, including poststreptococcal
    - RU B1b1a4 IgA nephropathy
    - RU B1b1a5 lupus nephritis
    - RU B1b1a6 minimal change disease
    - RU B1b1a7 nephrotic syndrome
    - RU B1b1a8 thin basement membrane disease
    - RU B1b1b tubular interstitial disease:
      - RU B1b1b1 acute tubular necrosis (ATN)
      - RU B1b1b2 acute interstitial nephritis
      - RU B1b1b3 papillary necrosis
    - RU B1b1b4 HIV nephropathy
    - RU B1b2 lower urinary tract: interstitial cystitis
    - RU B2 Neoplasms
      - RU B2a benign neoplasms and cysts
      - RU B2a1 polycystic kidney disease
      - RU B2b malignant neoplasms
RU B2b1 renal (eg, Wilms tumor/nephroblastoma, renal cell carcinoma, renal tumors associated with congenital/hereditary conditions)
RU B2b2 urinary bladder and collecting system
RU B3 Signs, symptoms, and ill-defined disorders
RU B3a dysuria
RU B3b hematuria
RU B3c oliguria, anuria
RU B3d proteinuria
RU B4 Metabolic and regulatory disorders
RU B4a acute kidney injury
RU B4b renal insufficiency
RU B4c azotemia, uremic syndrome
RU B4d chronic kidney disease, including end-stage renal disease
RU B4e cystinuria
RU B4f Fanconi syndrome
RU B4g hypertensive renal disease (renal complications of hypertension)
RU B4h renal calculi, ureteral calculi, nephrolithiasis
RU B4i renal tubular acidosis
RU B5 Vascular disorders
RU B5a renal artery stenosis (atherosclerosis, fibromuscular dysplasia, nephrosclerosis)
RU B5b renal vein thrombosis
RU B5c renal infarction
RU B6 Traumatic and mechanical disorders
RU B6a bladder rupture
RU B6b neurogenic bladder
RU B6c obstructive uropathy
RU B6d posterior urethral valves
RU B6e renal laceration
RU B6f renal vascular injury
RU B6g ureteral laceration/avulsion/disruption
RU B6h urethral diverticulum
RU B6i urethral/ureteral obstruction/stricture/prolapse
RU B6j urinary incontinence, including secondary enuresis
RU B6k vesicoureteral reflux
RU B7 Congenital disorders
RU B7a double ureters/ureteral duplication/double collecting system
RU B7b horseshoe kidney
RU B7c hydronephrosis/reflux
RU B7d renal agenesis, renal hypoplasia, renal dysplasia
RU B7e single kidney
RU B8 Adverse effects of drugs on the renal and urinary system
RU B8a ACE inhibitors
RU B8b aminoglycosides
RU B8c amphotericin B
RU B8d cisplatin
RU B8e furosemide
RU B8f gadolinium (nephrogenic systemic fibrosis)
RU B8g heroin
RU B8h iodinated contrast dye
Pregnancy, Childbirth, & the Puerperium (PC)

PC A Normal Processes
PC A1 Organ structure and function:
PC A1a pregnancy, including fertilization, implantation, development of embryo, labor and delivery, the puerperium, lactation, gestational uterus, placenta

PC B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis
PC B1 Prenatal care
PC B1a preconception counseling and care
PC B1a1 folate deficiency prevention
PC B1a2 immunizations
PC B1a3 nutritional assessment, including vitamins
PC B1a4 Rh screening
PC B1b prenatal risk assessment/prevention
PC B1b1 adolescent pregnancy
PC B1b2 antepartum fetal evaluation, including biophysical profile
PC B1b3 genetic screening
PC B1b4 α-fetoprotein
PC B1b5 diabetes mellitus
PC B1b6 neural tube defects
PC B1b7 Rh isoimmunization
PC B1c supervision of normal pregnancy
PC B1c1 assessment of gestational age
PC B1c2 iron deficiency prevention
PC B1c3 nutrition, including weight management
PC B1c4 surveillance, including ultrasonography and assessment of fetal growth
PC B1c5 vitamin deficiency prevention
PC B1c6 infections, maternal, fetal, newborn (focus on prevention and screening)
PC B1c6a cytomegalovirus, coxsackievirus, hepatitis B virus, herpes simplex viruses, HIV, influenza virus, parvovirus
PC B1c7 asymptomatic urinary tract infection
PC B2 Obstetric complications
PC B2a abortion, induced, septic, missed, spontaneous, threatened
PC B2b acute fatty liver of pregnancy
PC B2c anemia of pregnancy, sickle cell disease, thalassemia in pregnancy
PC B2d antepartum hemorrhage, including third-trimester bleeding
PC B2e cardiomyopathy of pregnancy
PC B2f cervical incompetence, cervical shortening
PC B2g cholestasis of pregnancy, intrahepatic
PC B2h congenital abnormalities, maternal (eg, bicornuate uterus)
PC B2i ectopic pregnancy
PC B2j fetal abnormality affecting management of mother (eg, hydrocephalus, spina bifida)
PC B2j1 fetal growth restriction
PC B2k gestational diabetes
PC B2l intrauterine growth restriction
PC B2m maternal mortality
PC B2n multiple gestation
PC B2o placental abnormalities (abruptio placentae, placenta previa, premature separation of placenta)
PC B2p polyhydramnios, oligohydramnios
PC B2q preeclampsia, eclampsia, HELLP syndrome, gestational hypertension
PC B2r prolonged pregnancy
PC B2s Rh isoimmunization affecting management of mother
PC B2t vomiting in pregnancy (morning sickness, hyperemesis gravidarum)
PC B2u trauma in pregnancy
PC B2v infections complicating pregnancy
PC B3 Labor and delivery
PC B3a labor and delivery, uncomplicated
PC B3b labor and delivery, complicated, including shoulder dystocia
PC B3c cesarean delivery, including complications
PC B3d cord compression, cord prolapse
PC B3e fetal malpresentations (eg, breech)
PC B3f intrapartum fetal evaluation, including fetal heart tones
PC B3g intrapartum prophylaxis (eg, HIV, Chlamydia, gonococcal prophylaxis)
PC B3h premature rupture of membranes
PC B3i preterm (before 37 weeks’ gestation) and postdates labor and delivery
PC B3j threatened preterm labor
PC B4 Puerperium, including complications
PC B4a lactation problems
PC B4b breast-feeding problems
PC B4c lochia
PC B4d postpartum cardiomyopathy
PC B4e postpartum blues
PC B4f postpartum hemorrhage
PC B4g postpartum sepsis
PC B4h retained placenta, products of conception (eg, placenta accreta)
PC B4i uterine atony
PC B5 Newborn (birth to 4 weeks of age)
PC B5a normal newborn
PC B5a1 examination of liveborn at admission to hospital screening, newborn
PC B5b disorders of the newborn
PC B5b1 screening, newborn
PC B5b2 ABO incompatibility in newborn
PC B5b3 hemolytic disease due to Rh incompatibility
PC B5b4 birth asphyxia syndrome (liveborn neonate)
PC B5b5 birth trauma (eg, cord compression, brachial palsy, lacerations)
PC B5b6 drug withdrawal syndrome in newborn
PC B5b7 feeding problems in newborn
PC B5b8 fetal growth and development abnormalities, including fetal growth restriction
PC B5b9 gastrointestinal obstruction
PC B5b10 hypocalcemia of newborn
PC B5b11 infections, congenital or peripartum (cytomegalovirus, herpes simplex viruses, HIV, hepatitis B, rubella virus, parvovirus B19 virus, varicella zoster virus, Chlamydia trachomatis, Streptococcus agalactiae, Treponema pallidum, Toxoplasma gondii)
PC B5b12 intrapartum fetal distress/death including stillborn
PC B5b13 jaundice, fetal/neonatal/perinatal
PC B5b14 laryngomalacia
PC B5b15 macrosomia (large for gestational age)
PC B5b16 meconium aspiration syndrome
PC B5b17 neonatal acne
PC B5b18 neonatal Candida infection (thrusl)
PC B5b19 neonatal hypoglycemia
PC B5b20 neonatal conjunctivitis and dacryocystitis
PC B5b21 ophthalmic gonorrhea
PC B5b22 phenylketonuria
PC B5b23 premature infant
PC B5b24 postterm infant
PC B5b25 pseudomembranous colitis of infancy
PC B5b26 respiratory distress syndrome (hyaline membrane disease)
PC B5b27 respiratory problems after birth (eg, bronchopulmonary dysplasia, tracheomalacia; tracheoesophageal fistula in neonates)
PC B5b28 retinitis of prematurity
PC B5b29 seizures in newborn
PC B5b30 sudden infant death syndrome (SIDS), apparent life-threatening event (ALTE)
PC B5b31 tetanus neonatorum
PC B6 Congenital disorders, neonatal
PC B6a congenital malformations and anomalies
PC B6b neonatal hydrocele
PC B7 Adverse effects of drugs on pregnancy, childbirth, and the puerperium
PC B7a alcohol, tobacco, and other drugs (ATOD)
PC B7b prenatal radiation exposure
PC B7c teratology (eg, ACE inhibitors, SSRIs, warfarin, infections, toxins)
PC B8 Systemic disorders affecting pregnancy, labor and delivery, and puerperium
PC B8a appendicitis
PC B8b asthma
PC B8c carpal tunnel syndrome in pregnancy
PC B8d cirrhosis
PC B8e deep venous thrombosis (DVT)
PC B8f diabetes mellitus
PC B8g heart failure, valvular heart disease
PC B8h hypertension
PC B8i myasthenia gravis
PC B8j obesity
PC B8k pancreatitis
PC B8l psychiatric disorders
PC B8m renal failure/renal disease, including SLE
PC B8n seizure disorders
PC B8o thyroid disorders, hypothyroidism, hyperthyroidism
PC B8p renal calculus/calculi

Female Reproductive System & Breast (FM)
FM A Normal Processes
FM A1 Embryonic development, fetal maturation, and perinatal changes, gametogenesis
FM A2 Organ structure and function
FM A2a female structure, including breast
FM A2b female function (eg, ovulation, menstrual cycle, puberty)
FM A2c intercourse, sexual response
FM A3 Cell/tissue structure and function:
FM A3a hypothalamic-pituitary-gonadal axis, sex steroids, and gestational hormones
FM A4 Reproductive system defense mechanisms and normal flora
FM A5 Repair, regeneration, and changes associated with stage of life

FM B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis
FM B1 Breast
FM B1a infectious, immunologic, and inflammatory disorders
FM B1a1 breast abscess
FM B1a2 inflammatory disease of breast, fat necrosis
FM B1a3 mastitis
FM B1a4 nipple discharge
FM B1b neoplasms
FM B1c benign and undefined neoplasms
FM B1c1 breast cyst, solitary
FM B1c2 fibrocystic changes
FM B1c3 fibroadenoma
FM B1c4 hypertrophy of breast
FM B1c5 intraductal papilloma
FM B1d malignant neoplasms (including screening)
FM B1d1 breast cancer
FM B1d2 intraductal carcinoma
FM B1d3 Paget disease of breast
FM B1d4 phylloides tumors
FM B2 Female reproductive system
FM B2a infectious, immunologic, and inflammatory disorders
FM B2a1 bacterial vaginosis
FM B2a2 Bartholin gland abscess
FM B2a3 cellulitis, pelvic
FM B2a4 candidiasis of the vulva or vagina
FM B2a5 lichen sclerosus
FM B2a6 sexually transmitted infections and exposure
FM B2a7 cervicitis and endocervicitis
FM B2a8 chancroid (Haemophilus ducreyi)
FM B2a9 genital herpes
FM B2a10 gonorrhea (Neisseria gonorrhoeae)
FM B2a11 human papillomavirus infection, genital/venereal/anal warts, condylomata acuminata
FM B2a12 lymphogranuloma venereum (Chlamydia trachomatis), nonlymphogranuloma venereum
FM B2a13 pelvic inflammatory disease
FM B2a14 Fitz-Hugh–Curtis syndrome
FM B2a15 salpingitis and oophoritis
FM B2a16 syphilis (Treponema pallidum)
FM B2a17 trichomoniasis (Trichomonas vaginalis)
FM B2a18 urethritis
FM B2a19 vaginitis
FM B2a20 vulvovaginitis
FM B3 Neoplasms of the cervix, ovary, uterus, vagina, and vulva
FM B3a benign neoplasms and cysts
FM B3a1 abnormal Pap smear
FM B3a2 benign neoplasm of ovary
FM B3a3 endocervical and endometrial polyps
FM B3a4 leiomyomata uteri
FM B3a5 ovarian cyst
FM B3b malignant and precancerous neoplasms
FM B3b1 cervical cancer
FM B3b2 HPV causing cancer
FM B3b3 Cervical dysplasia, HPV causing dysplasia
FM B3b4 endometrial hyperplasia
FM B3b5 endometrial/uterine cancer
FM B3b6 gestational trophoblastic disease (hydatidiform mole)
FM B3b7 ovarian cancer
FM B3b8 vulvar dysplasia and cancer
FM B4 Fertility and infertility
FM B4a assisted reproductive techniques (ART)
FM B4b contraception (eg, oral contraceptives, IUD, vaginal cap, cervical sponge, diaphragm, implant, morning-after pill, male and female condoms)
FM B4c female infertility
FM B4d gonadal dysgenesis 45,X (Turner syndrome)
FM B4e sterilization
FM B4f tubal factors
FM B4g infertility
FM B5 Menopause
FM B5a ovarian failure, premature menopause;
FM B5b perimenopause;
FM B5c premenopausal menorrhagia;
FM B5d postmenopausal atrophic vaginitis (vaginal atrophy)
FM B5e postmenopausal bleeding;
FM B5f vasomotor symptoms
FM B6 Menstrual and endocrine disorders:
FM B6a abnormal uterine bleeding, including perimenopausal
FM B6b absence of menstruation (primary amenorrhea, secondary amenorrhea including undiagnosed pregnancy)
FM B6c anovulation
FM B6d dysmenorrhea
FM B6e endometriosis
FM B6f hirsutism, virilization
FM B6g mittelschmerz
FM B6h pelvic pain
FM B6i polycystic ovarian syndrome
FM B6j postcoital bleeding
FM B6k premenstrual syndrome
FM B7 Sexual dysfunction
FM B7a dyspareunia
FM B7b orgasmic dysfunction
FM B7c sexual desire/arousal syndrome
FM B7d vaginismus
FM B8 Traumatic and mechanical disorders
FM B8a Asherman syndrome
FM B8b chronic inversion of uterus
Male Reproductive System (MR)

**MR A Normal Processes**
- **MR A1** Embryonic development, fetal maturation, and neonatal changes, gametogenesis
- **MR A2** Organ structure and function
  - **MR A2a** structure, male genitalia and prostate function, male genitalia and prostate (eg, spermatogenesis, puberty) intercourse, orgasm, erection
  - **MR A3** Cell/tissue structure and function, including hypothalamic-pituitary-gonadal axis, sex steroids, and gestational hormones
- **MR A4** Reproductive system defense mechanisms and normal flora
- **MR A5** Repair, regeneration, and changes associated with stage of life

**MR B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis**
- **MR B1** Infectious, immunologic, and inflammatory disorders
  - **MR B1a** infectious disorders
    - **MR B1a1** balanitis
    - **MR B1a2** epididymitis
    - **MR B1a3** orchitis
    - **MR B1a4** prostatitis
    - **MR B1a5** sexually transmitted infections and exposure
  - **MR B1a6** chancroid (Haemophilus ducreyi)
  - **MR B1a7** genital herpes
  - **MR B1a8** gonorrhea (Neisseria gonorrhoeae)
  - **MR B1a9** human papillomavirus infection, genital/venereal/anal warts, condylomata acuminata
  - **MR B1a10** lymphogranuloma venereum (Chlamydia trachomatis)
  - **MR B1a11** syphilis (Treponema pallidum)
  - **MR B1a12** trichomoniasis (Trichomonas vaginalis)
MR B1a13 urethritis, chlamydial and nonchlamydial, nongonococcal
MR B1b immunologic and inflammatory disorders
MR B1b1 autoimmune hypogonadism
MR B2 Neoplasms
MR B2a malignant neoplasms, penile, prostate, testicular, breast
MR B3 Metabolic and regulatory disorders, including sexual dysfunction
MR B3a erectile dysfunction, impotence
MR B3b infertility, male factor
MR B3c male sexual dysfunction
MR B3d premature ejaculation
MR B4 Traumatic and mechanical disorders
MR B4a benign prostatic hyperplasia/hypertrophy
MR B4b circumcision, including complications
MR B4c epididymal cyst
MR B4d hydrocele
MR B4e injuries, wounds, and burns to male genitalia, including blast injuries
MR B4f penile laceration, penile fracture, Peyronie disease
MR B4g phimosis
MR B4h scrotal laceration
MR B4i spermatocele
MR B4j testicular rupture/avulsion/laceration
MR B4k torsion of testis
MR B4l urethral laceration/disruption
MR B4m varicocele
MR B5 Congenital disorders of the male reproductive system
MR B5a hypospadias
MR B5b Klinefelter syndrome
MR B5c undescended testicle
MR B6 Adverse effects of drugs on the male reproductive system
MR B6a alcohol
MR B6b androgens, testosterone
MR B6c antipsychotics, antidepressants including selective serotonin reuptake inhibitors
MR B6d beta-adrenergic blockers
MR B6e diuretic including thiazides
MR B6f drug-induced priapism (eg, trazodone)
MR B6g finasteride, dutasteride
MR B6h sildenafil, tadalafil, vardenafil
MR B6i marijuana
MR B6j nitric oxide reductase inhibitor

**Endocrine System (EN)**

**EN A Normal Processes**

EN A1 Embryonic development, fetal maturation, and perinatal changes
EN A2 Organ structure and function
EN A2a hypothalamus, posterior and anterior pituitary gland
EN A2b thyroid gland
EN A2c parathyroid gland
EN A2d adrenal cortex, adrenal medulla
EN A2e pancreatic islets
EN A2f ovary and testis
EN A2g adipose tissue
EN A3 Cell/tissue/structure and function, including hormone synthesis, secretion, action, metabolism
EN A3a peptide hormones
EN A3b steroid hormones, including vitamin D
EN A3c thyroid hormones
EN A3d catecholamine hormones
EN A3e renin-angiotensin system
EN A4 Repair, regeneration, and changes associated with stage of life

EN B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis
EN B1 Diabetes mellitus and other disorders of the endocrine pancreas
EN B1a diabetes mellitus
EN B1a1 diabetes mellitus, type 1
EN B1a2 diabetes mellitus, type 1.5
EN B1a3 diabetes mellitus, type 2
EN B1a4 diabetes mellitus, acute complications
EN B1a4a hyperosmolar coma, hypoglycemic shock, ketoacidosis, including cerebral edema, associated electrolyte abnormalities
EN B1a5 diabetes mellitus, chronic complications
EN B1a5a gastrointestinal/gastroparesis, neurologic/neuropathy, ophthalmologic/retinopathy, peripheral vascular, renal/nephropathy, metabolic syndrome
EN B1b hypoglycemia and islet cell disorders
EN B1b1 hypoglycemia (secondary to insulinoma, surreptitious insulin use, sepsis, liver failure)
EN B1b2 hyperglycemia (secondary to glucagonoma)
EN B1b3 hyperinsulinism
EN B1b4 islet cell tumors/insulinoma/somatostatinoma
EN B1b5 pancreatic neuroendocrine tumors
EN B2 Thyroid disorders
EN B2a cyst, nodule
EN B2b euthyroid sick syndrome
EN B2c goiter (euthyroid-normal thyroid function with goiter)
EN B2d hypothyroidism
EN B2e hyperthyroidism, including thyrotoxicosis and thyroid storm
EN B2f thyroiditis, including Hashimoto
EN B2g Graves disease
EN B2h neoplasms (benign cysts and nodules, thyroid cancer including papillary, follicular, medullary, and anaplastic)
EN B2i thyroid deficiency from pituitary disorder
EN B2j infertility due to thyroid disease
EN B2k secondary hypothyroidism and hyperthyroidism
EN B3 Parathyroid disorders
EN B3a hyperparathyroidism
EN B3b hypoparathyroidism
EN B3c metabolic bone disease
EN B4 Adrenal disorders
EN B4a corticoadrenal insufficiency (Addison disease)
EN B4b adrenal insufficiency, secondary
EN B4c hypocortisolism
EN B4d Cushing syndrome
EN B4e hyperaldosteronism
EN B4f neoplasms, benign and malignant (adrenal neuroblastoma, pheochromocytoma, adrenal carcinoma, adrenal adenoma, aldosteronoma, adrenal incidentaloma)
EN B4g delayed and precocious puberty
EN B4h hypertensive endocrine disease
EN B5 Pituitary disorders
EN B5a acromegaly/gigantism
EN B5b diabetes insipidus
EN B5c galactorrhea not associated with childbirth
EN B5d panhypopituitarism from any cause
EN B5e pituitary apoplexy (eg, Sheehan syndrome)
EN B5f growth hormone deficiency
EN B5g short stature
EN B5h SIADH (inappropriate secretion of ADH [vasopressin])
EN B5i neoplasm, benign and malignant (pituitary adenomas, craniopharyngioma, metastatic disease)
EN B5j prolactinoma and hyperprolactinemia, including infertility due to these disorders
EN B5k hypogonadism, primary and secondary
EN B6 Hypothalamic endocrine disorders
EN B7 Multiple endocrine neoplasia (MEN1, MEN2)
EN B8 Congenital disorders
EN B8a disorders of sexual differentiation
EN B8b congenital adrenal hyperplasia
EN B8c androgen insensitivity/resistance syndrome
EN B8d congenital hypothyroidism
EN B9 Adverse effects of drugs on the endocrine system
EN B9a drug, medicinal, and biologic substance effects
EN B9b exogenous steroid suppression of adrenal glands, anabolic steroids

Multisystem Processes & Disorders (MP)

MP A Normal Processes
MP A1 Principles of nutrition
MP A1a generation, expenditure, and storage of energy at the whole-body level functions of nutrients (eg, essential, trans-fatty acids, cholesterol)
MP A2 Electrolyte and water metabolism
MP A2a electrolyte metabolism (calcium, potassium, phosphorus)
MP A2b water metabolism
MP A3 Intracellular accumulations (eg, pigments, fats, proteins, carbohydrates, minerals, inclusions, vacuoles, lysosomal/glycogen storage disease and structures related to storage diseases, glycogen phosphorylase deficiency, Zellweger syndrome)

MP B Abnormal Processes: Health and Health Maintenance, Screening, Diagnosis, Management, Risks, Prognosis
MP B1 Infectious, immunologic, and inflammatory disorders
MP B1a infectious disorders
MP B1b bacterial
MP B1b1 brucellosis (Brucella spp)
MP B1b2 leptospirosis (Leptospira interrogans)
MP B1b3 Lyme disease (Borrelia burgdorferi)
MP B1b4 melioidosis (Burkholderia pseudomallei)
MP B1b5 military (disseminated) tuberculosis (Mycobacterium tuberculosis)
MP B1b6 tularemia (Francisella tularensis)
MP B1b7 toxic shock syndrome
MP B1b8 Q fever (Coxiella burnetii)
MP B1b9 anaplasmosis and ehrlichiosis (Anaplasma and Ehrlichia species)
MP B1b10 rickettsiosis (Rocky Mountain spotted fever [Rickettsia rickettsii])
MP B1c viral
MP B1c1 infectious mononucleosis (Epstein-Barr virus)
MP B1c2 cytomegalovirus infection
MP B1c3 yellow fever
MP B1c4 human herpesvirus 8 (HHV-8)
MP B1d fungal
MP B1d1 blastomycosis (Blastomyces dermatitidis)
MP B1d2 candidiasis (Candida albicans)
MP B1d3 coccidioidomycosis (Coccidioides immitis/posadasii)
MP B1d4 histoplasmosis (Histoplasma capsulatum)
MP B1e parasitic
MP B1e1 schistosomiasis (Schistosoma)
MP B1e2 leishmaniasis (Leishmania spp), visceral (kalaazar)
MP B1e3 trypanosomiasis/Chagas disease, acute and chronic (Trypanosoma)
MP B1f immunologic and inflammatory disorders
MP B1f1 acute rheumatic fever
MP B1f2 autoimmune arteritis/vasculitis
MP B1f3 Behçet syndrome
MP B1f4 Churg-Strauss syndrome
MP B1f5 Eosinophilic granuloma, histiocytosis, Langerhans cell histiocytosis
MP B1f6 Goodpasture syndrome
MP B1f7 Henoch-Schönlein purpura
MP B1f8 Kawasaki disease
MP B1f9 mixed connective tissue disease
MP B1f10 polyangiitis
MP B1f11 polyarteritis nodosa
MP B1f11-1 polyglandular autoimmune syndrome, type 1
MP B1f12 polymyalgia rheumatica, temporal arteritis
MP B1f13 Raynaud disease/Raynaud syndrome
MP B1f14 reactive arthritis, formerly Reiter disease, including Reiter arthritis
MP B1f15 scleroderma (systemic sclerosis)
MP B1f16 Sjögren syndrome
MP B1f17 systemic lupus erythematosus
MP B1f18 Takayasu arteritis
MP B1f19 granulomatosis with polyangiitis (formerly Wegener granulomatosis)
MP B1f20 Familial Mediterranean fever
MP B1f21 sarcoidosis, Lofgren syndrome
MP B2 Neoplasms and related disorders
MP B2a paraneoplastic syndromes
MP B2a1 endocrine (e.g., SIADH, Cushing syndrome, hypercalcemia of malignancy (parathyroid-related protein and paraneoplastic syndrome with hypercalcemia)
MP B2a2 hematologic (polycythemia, nonbacterial thrombotic endocarditis); neurologic (myasthenic syndrome, paraneoplastic cerebellar degeneration, limbic encephalitis, pure sensory neuropathy)
MP B2a3 mucocutaneous (e.g, acanthosis nigricans)
MP B2a4 musculoskeletal (e.g, pulmonary osteoarthropathy, polymyositis)
MP B2a5 other (membranous glomerulonephritis)
MP B2b inherited cancer syndromes
MP B2b1 DNA repair abnormalities (eg, Fanconi anemia)
MP B2b2 Lynch syndrome (gastrointestinal and female reproductive)
MP B3 Signs, symptoms, and ill-defined disorders
MP B3a arthralgias
MP B3b abdominal pain
MP B3c chest pain
MP B3d cough
MP B3e dizziness, light-headedness, syncope, including breath-holding spells with syncope
MP B3f dyspnea, shortness of breath
MP B3g edema, anasarca
MP B3h fatigue
MP B3i fever of unknown origin
MP B3j Gulf War syndrome
MP B3k hemoptysis
MP B3l joint pain
MP B3m palpitations
MP B3n pruritus
MP B3o unexpected weight gain/weight loss
MP B3p pain management (in a nonaddition, nonpattative-care setting)
MP B3q lymphedema
MP B4 Nutrition
MP B4a protein-calorie malnutrition (kwashiorkor, marasmus)
MP B4b vitamin deficiencies and/or toxicities
MP B4b1 vitamin A
MP B4b2 vitamin B
MP B4b3 vitamin B1, thiamine (eg, Wernicke- Korsakoff syndrome, beriberi)
MP B4b4 vitamin B3, niacin
MP B4b5 vitamin B6, pyridoxine
MP B4b6 vitamin B9, folic acid
MP B4b7 vitamin B12, cobalamins (pernicious anemia)
MP B4b8 vitamin C (scurvy)
MP B4b9 vitamin D (rickets)
MP B4b10 vitamin E
MP B4b11 vitamin K
MP B4c mineral deficiencies and/or toxicities
MP B4d obesity
MP B4e enteral/parenteral nutrition (TPN)
MP B5 Toxins and environmental extremes
MP B5a physical and associated disorders
MP B5a1 temperature (eg, hypothermia, hyperthermia, heat stroke)
MP B5a2 radiation (eg, radon, uranium mining, imaging studies)
MP B5a3 thermal injury, burns, electrocution, lightning
MP B5a4 decreased atmospheric pressure, high-altitude sickness
MP B4a5 increased water pressure (nitrogen narcosis)
MP B5b chemical including Gulf War illness/syndrome
MP B5b1 gases, vapors, smoke inhalation
MP B5b2 agricultural hazards (eg, pesticides, green tobacco poisoning, anhydrous ammonia, Agent Orange)
MP B5b3 volatile organic solvents
MP B4b4 metals (e.g., lead)
MP B5b5 other chemical agents (eg, ethylene glycol, carbon tetrachloride, methanol; BPA)
MP B4b6 principles of poisoning and therapy (e.g., acetylsalicylic acid (ASA), acetaminophen)
MP B6 Venomous bites and stings
MP B6a hymenoptera bites and stings
MP B6b scorpion bites
MP B6c snake bites
MP B6d spider bites
MP B6e jellyfish stings
MP B7 Fluid, electrolyte, and acid-base balance disorders
MP B7a fluid volume and electrolyte/ion disorders
MP B7a1 fluid volume disorders
MP B7a2 dehydration
MP B7a3 hypovolemia
MP B7a4 volume overload
MP B7a5 electrolyte disorders
MP B7a6 hyponatremia, hypernatremia
MP B7a7 hypokalemia, hyperkalemia
MP B7a8 hypocalcemia, hypercalcemia
MP B7a9 hypophosphatemia, hyperphosphatemia
MP B7a10 hypomagnesemia
MP B7b acid-base disorders
MP B7b1 metabolic acidosis
MP B7b2 metabolic alkalosis
MP B7b3 respiratory acidosis
MP B7b4 respiratory alkalosis
MP B7b5 mixed acid-base disturbances
MP B8 Abuse
MP B8a child, nonaccidental trauma/inflicted head trauma/factitious disorder by proxy
MP B8b intimate partner abuse, sexual, emotional, and physical including injuries (eg, rib fractures) related to abuse
MP B8c elder abuse, sexual, emotional, and physical including injuries (eg, rib fractures) related to abuse
MP B8d sexual assault
MP B9 Multiple trauma (eg, prioritization, blast injury involving more than one organ system)
MP B10 Shock, cardiogenic, hypovolemic, neurogenic, septic, sepsis, bacteremia, systemic inflammatory response syndrome (SIRS), refractory, multiorgan dysfunction syndrome:
MP B10a meningococcemia
MP B11 Genetic metabolic and developmental disorders
MP B11a multifactorial
MP B11a1 VATER syndrome, association syndromes
MP B11b large genomic changes
MP B11b1 Beckwith-Wiedemann syndrome
MP B11b2 Down syndrome
MP B11b3 Prader-Willi syndrome
MP B11c enzymatic/metabolic
MP B11c1 alpha-1 antitrypsin deficiency
MP B11c2 porphyria
MP B11c3 inborn errors of metabolism (eg, maple syrup urine disease, diseases involving urea cycle) MP B11c4 storage diseases (eg, Fabry disease, Tay-Sachs disease, glycogen storage disease, mucopolysaccharidoses)
MP B11d structural protein disorders
MP B11d1 amyloidosis
MP B11d2 Ehlers-Danlos syndrome
MP B11d3 immotile cilia syndrome (Kartagener syndrome; primary ciliary dyskinesia)
MP B11d4 Marfan syndrome
MP B11e intracellular/extracellular transport receptors
MP B11e1 cystic fibrosis
MP B11e2 hemochromatosis
MP B11e3 Wilson disease
MP B11f triplet repeat/RNA disorders
MP B11f1 fragile X syndrome
MP B12 Adverse effects of drugs on multisystem disorders
MP B12a drug-induced electrolyte abnormalities and acid base-disorders (e.g., albuterol, prednisone, diuretics, Alcohol, drugs inducing polydipsia, SIADH, otdiabetes insipidus)

**Biostatistics, Epidemiology/Population Health, & Interpretation of the Medical Literature (BE)**

BE A Epidemiology/population health
BE A1 Measures of disease frequency
BE A1a incidence/prevalence
BE A2 Measures of health status
BE A2a rates, crude and adjusted
BE A2b reproductive rates (e.g., maternal mortality, neonatal/infant/under-5 mortality)
BE A2c mortality, morbidity
BE A2d standardization
BE A2e life expectancy, health-adjusted life expectancy
BE A2f population attributable risk (PAR), population attributable risk percent (PAR%)  
BE A2g risk factors
BE A3 Survival analysis interpretation (e.g., Kaplan-Meier curve)
BE A4 Composite health status indicators, measures of population impact
BE A4a years of potential life lost
BE A4b quality-adjusted life years
BE A4c disability-adjusted life years
BE A4d standardized mortality ratio
BE A5 Population pyramids and impact of demographic changes
BE A6 Disease surveillance and outbreak investigation
BE A6a disease reporting
BE A6b response to public health advisory, health promotion
BE A6c recognition of clusters
BE A7 Communicable disease transmission
BE A7a attack rate
BE A7b herd immunity
BE A7c reportable diseases
BE A8 Points of intervention
BE A8a primary, secondary
BE A8b community level (e.g., cigarette taxes, soda taxes, smoke-free cities, buildings: restaurants, public buildings)
BE A8c school policies
BE A8d access, healthy food, transportation, clean air, safe environments
BE B Study design, types and selection of studies (includes dependent/independent variables)
BE B1 Descriptive studies (case report [one person]/case series [more than one])
BE B2 Analytical studies: observational
BE B2a community surveys
BE B2b cross-sectional (individuals)
BE B2c ecological (populations)
BE B2d case control
BE B2e retrospective and prospective cohort
BE B3 Analytical studies: interventional
BE B3a clinical trial (randomized controlled trial; double-blind; placebo-controlled; noninferiority/equivalence trials)
BE B3b community intervention
BE B4 Systematic reviews and meta-analysis
BE B4a potential uses
BE B4b estimation of effect sizes
BE B4c heterogeneity
BE B4d publication bias
BE B4e forest plots, funnel diagrams
BE B4f risk of bias, bias risk scale
BE B4g Obtaining and describing samples
BE B4g1 matching, inclusion/exclusion criteria, selecting appropriate controls for studies, lack of controls, concealed allocation, randomization, stratification
BE B4h Methods to handle noncompliance
BE B4h1 loss to follow-up
BE B4h2 intention-to-treat analysis
BE B4i Qualitative analysis

BE C Measures of association
BE C1 Relative risk
BE C2 Odds ratio, hazard ratio
BE C3 Other measures of association
BE C3a number needed to treat/harm
BE C3b absolute risk (AR), absolute risk percent (AR%)
BE C3c population attributable risk (PAR), population attributable risk percent (PAR%)

BE D Distributions of data
BE D1 measures of central tendency
BE D2 measures of variability
BE D3 regression to mean
BE D4 normal distribution
BE D5 nominal measurement

BE E Correlation and regression, uses and interpretation:
BE E1 correlation coefficients
BE E2 multiple regression

BE F Principles of testing and screening
BE F1 Properties of a screening test
BE F1a validity, accuracy, reliability
BE F1b criteria for a screening test
BE F1c confirmatory testing
BE F1d appropriateness
lead-time bias, length bias
BE F1f screening vs diagnostic tests
BE F2 Sensitivity and specificity; predictive value, positive and negative
BE F3 ROC curves
BE F4 Probability
BE F4a theory (independence, product, addition rules)
BE F4b decision trees
BE F4c likelihood ratios (application of Bayes theorem)
BE F4d posttest, pretest

BE G Study interpretation, drawing conclusions from data
BE G1 Causation
BE G1a hypothesis-generating vs hypothesis-driven testing;
BE G1b causal criteria, temporality, temporal sequence, dose-response relationship;
BE G1c reverse causality
BE G2 Chance
BE G2a null hypothesis, Type I error and alpha level (multiple comparisons, random error/chance)
BE G2b sample size and Type II error, beta, power
BE G2c selection and interpretation of basic tests of statistical significance
BE G2c1 chi-square
BE G2c2 confidence intervals
BE G2c3 p-values
BE G2c4 t-test
BE G2d a priori vs. post hoc analysis
BE G2d1 subgroup analysis
BE G2d2 error rate
BE G2d3 affect types
BE G3 Interpretation of graphs/tables and text
BE G4 Bias, confounding, and threats to validity (includes methods to address)
BE G4a selection, sampling bias
BE G4b information bias
BE G4b1 recall
BE G4b2 ascertainment, ecologic fallacy, lack of blinding
BE G4b3 loss to follow up
BE G4c confounding variables, Hawthorne effect (includes methods to address)
BE G4d other threats to validity (eg, placebo effect)
BE G5 Internal vs. external validity
BE G5a generalizability (external validity) BE G5b efficacy vs effectiveness
BE G6 Statistical vs. clinical significance; clinical and surrogate outcome/endpoint

BE H Clinical decision making, interpretation and use of evidence-based data and recommendations:
BE H1 application of study results to patient care and practice, including patient preferences and individualization of risk profiles
BE H2 risk/benefit analysis
BE H3 synthesis of concepts with real data

BE I Research ethics
BE I1 Informed consent for research
BE I2 Privacy of patient data (HIPAA)
BE I3 Roles of institutional review boards (IRBs)
BE I4 Intervention analysis
BE I4a Interim intervention analysis
BE I4b stopping analysis
BE I4c safety monitoring
BE I5 Regulatory issues
BE I5a drug development, phases of approval
BE I5b appropriateness of placebo
BE I5c appropriateness of randomized clinical trial
BE I5d components of studies
BE I5e ethics
BE I5f scheduling
BE I5g off-label use
BE I6 Other issues related to research ethics

Social Sciences (SS)
SS A Communication and interpersonal skills, including health literacy and numeracy, cultural competence
SS A1 Patient interviewing, consultation, and interactions with the family (patient-centered communication skills)
SS A1a fostering the relationship (eg, expressing interest)
SS A1b information gathering (eg, exploring patient’s reaction to illness)
SS A1c information provision (eg, providing information about working diagnosis)
SS A1d making decisions (eg, eliciting patient’s perspectives)
SS A1e supporting emotions (eg, effective discussion with difficult patients)
SS A1f enabling patient behaviors (eg, education and counseling)
SS A2 Use of an interpreter

SS B Medical ethics and jurisprudence, include issues related to death and dying and palliative care
SS B1 Consent/informed consent to treatment, permission to treat (full disclosure, risks and benefits, placebos, alternative therapies, conflict of interest, and vulnerable populations)
SS B2 Determination of medical decision-making capacity/informed refusal
SS B3 Involuntary admission
SS B4 Legal issues related to abuse (child, elder, and intimate partner)
SS B4a child protective services, foster care, immunizations
SS B4b legal requirements for reporting abuse or neglect/obligation to warn
SS B5 Birth-related issues
SS B6 Death and dying and palliative care
SS B6a life support
SS B6b advance directive, health care proxy, advance care planning
SS B6c euthanasia and physician-assisted suicide
SS B6d diagnosing death/determination of brain death/diagnosing death
SS B6e pronouncing death
SS B6f organ donation
SS B6g hospice
SS B6h pain management, including ethical issues related to death and dying
SS B6i information sharing, counseling families
SS B6j psychosocial and spiritual counseling, fear and loneliness
SS B7 Physician-patient relationship (boundaries, confidentiality including HIPAA, privacy, truth-telling, other principles of medical ethics, eg, autonomy, justice, beneficence)
SS B8 Impaired physician, including duty to report impaired physician
SS B9 Negligence/malpractice, including duty to report negligence and malpractice
SS B10 Physician misconduct, including duty to report physician misconduct
SS B11 Referrals
SS B12 Cultural issues not otherwise coded
<table>
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<th>SS C Systems-based practice (including health systems, public health, community, schools) and patient safety (including basic concepts and terminology)</th>
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<td>SS C1c Health care/organizational behavior and culture</td>
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<td>SS C2d2 Principles of change management in quality improvement: specific strategies</td>
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<td>SS C2e Attributes of high-quality health care</td>
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<td>SS C2e1 High-value/cost-conscious care: overutilization of resources, including diagnostic testing, medications</td>
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<td>SS C3a Patient safety principles</td>
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<td>SS C3a3a3 economic status</td>
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SS C3a3a4 cultural factors (eg, religion)
SS C3a3a5 failure to make appointments
SS C3a3a6 socioeconomic status
SS C3a3b Physician factors
SS C3a3b1 deficiency of knowledge
SS C3a3b2 judgment errors
SS C3a3b3 diagnostic errors
SS C3a3b4 fatigue, sleep deprivation
SS C3a3b5 bias – cognitive, availability, heuristic, anchoring, framing
SS C3a3c Human factors (eg, cognitive, physical, environmental)
SS C3a4 High reliability of organization (HRO) principles
SS C3a4a change management and improvement science
SS C3a4b conceptual models of improvement
SS C3a5 Reporting and monitoring for errors: event reporting systems
SS C3a6 Communication with patients after adverse events (disclosure/transparency)
SS C3b Specific types of errors
SS C3b1 Transitions of care errors (eg, handoff communication including shift-to-shift, transfer, and discharge)
SS C3b1a handoffs and related communication
SS C3b1b discontinuities
SS C3b1c gaps
SS C3b1d discharge
SS C3b1e transfers
SS C3b2 Medication errors
SS C3b2a Ordering, transcribing, dispensing, administration (wrong quantity, wrong route, wrong drug)
SS C3b2b Medication reconciliation
SS C3b2c Mathematical error
SS C3b3 Procedural errors
SS C3b3a Universal protocol (time out); wrong patient; wrong site; wrong procedure
SS C3b3b Retained foreign bodies
SS C3b3c Injury to structures
SS C3b3c1 paracentesis
SS C3b3c2 bowel perforation
SS C3b3c3 thoracentesis
SS C3b3c4 pneumothorax
SS C3b3c5 central venous/arterial line injuries
SS C3b3c6 arterial puncture and bleeding and venous thrombosis
SS C3b3c7 lumbar puncture bleeding
SS C3b3c8 paralysis
SS C3b3d Other errors
SS C3b3d1 anesthesia-related errors
SS C3b3d2 mathematical errors
SS C3b3e Health care-associated infections
SS C3b3e1 nosocomial infection (e.g., surgical site, ventilator associated, catheter related)
SS C3b3e2 handwashing procedures or inadequate number of handwashing stations
SS C3b3e3 central line-associated blood stream infections
SS C3b3e4 surgical site infections
SS C3b3e5 catheter-associated urinary tract infections
SS C3b3e6 ventilator-associated pneumonia
SS C3b3f Documentation errors
SS C3b3f1 electronic medical record (including voice-recognition software errors)
SS C3b3f2 record keeping
SS C3b3f3 incorrect documentation (eg, wrong patient, wrong date, copying and pasting, pre-labeling)
SS C3b3g Patient identification errors
SS C3b3g1 Mislabeling: transfusion errors related to labeling
SS C3b3g2 Verification/two identifiers: lack of dual validation, including verbal verification of lab results
SS C3b3h Diagnostic errors
SS C3b3h1 errors in diagnostic studies
SS C3b3h2 misinterpretation
SS C3b3i Monitoring errors
SS C3b3i1 Cardiac monitoring/telemetry
SS C3b3i2 Drug monitoring (warfarin, antibiotics)
SS C3b3j Device-related errors
SS C3b3j1 malfunction
SS C3b3j2 programming error
SS C3b3j3 incorrect use
SS C3b3k Strategies to reduce error
SS C3b3k1 Human factors engineering
SS C3b3k1a Situational awareness
SS C3b3k1b Hierarchy of effective interventions
SS C3b3k1b1 forcing function
SS C3b3k2 visual cues
SS C3b3k2 Error analysis tools
SS C3b3k2a error/near miss analysis
SS C3b3k2b failure modes and effect analysis
SS C3b3k2c morbidity and mortality review
SS C3b3k2d root cause analysis
SS C3b3k3 Safety behavior and culture at the individual level
SS C3b3k3a hierarchy of health care, flattening hierarchy, speak up to power
SS C3b3k3b afraid to report, fear
SS C3b3k3c psychological safety
SS C3b3k3d closed-loop communication
SS C3b3k4 Teamwork
SS C3b3k4a principles of highly effective teams
SS C3b3k4b case management
SS C3b3k4c physician teams, physician-physician communication
SS C3b3k4d interprofessional/intraprofessional teams
SS C3b3k4e strategies for communication among teams, including system-provider communication, physician-physician communication (eg, consultations), interprofessional communication, provider-patient communication
SS C4 Health care policy and economics
SS C4a Health care policy
SS C4a1 Health care disparities
SS C4a1a race/ethnicity
SS C4a1b numeracy/literacy
SS C4a1c socioeconomic status
SS C4a2 Access to care: critical access systems or hospitals
SS C4a3 Social justice
SS C4b Health care economics/Health care financing
SS C4b1 Types of insurance
SS C4b1a Medicare, Medicaid, private insurance, self-pay
SS C4b2 Navigating the insurance system
  SS C4b2a deductibles/co-pays
  SS C4b2b in-/out-of-network
  SS C4b2c preferred providers
SS C4b3 Reimbursement issues affecting safety and quality
  SS C4b3a emergency services – EMTALA
  SS C4b3b pay-for-performance