

Clerkship Goals and Objectives

Overview

This document summarizes the clerkship specific learning goals and objectives for the six core clerkships, the required clinical experiences, expected levels of medical student responsibility, and assessment methods used across clerkships.

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Surgery

GOALS & OBJECTIVES

By the end of the clerkship, students should be able to:

- Elicit and document an accurate and thorough history of a surgical patient.
- Perform and document an accurate and thorough physical examination of a surgical patient, with specific emphasis on the abdominal examination.
- Develop proficiency in standard two-handed knot tying and basic suturing skills including running and interrupted techniques.
- Develop proficiency in dressing change techniques and an understanding of basic wound healing, barriers to successful wound healing such as surgical site infection, and use of adjunctive therapies such as negative-pressure wound therapy.
- Demonstrate an understanding of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, including the appropriate application of this knowledge to the care of surgical patients.

MEDICAL KNOWLEDGE AND PATIENT CARE

Clinical Assessment and Peri-operative Management

- Perform a history and a physical examination that is appropriate for age, sex, and clinical problem.
- Identify factors that increase peri-operative risk.
 - Diseases: Cardiac, Endocrine, Hepatic, Infectious, Psychiatric, Pulmonary, Renal
 - Conditions: Extremes of age, Immune suppression, Metabolic disorders, Pregnancy, Substance use disorder.
- Develop appropriate differential diagnoses and management plans.
- Write daily inpatient notes in an appropriate format, noting progress and changes in health status.
- Write concise clinic encounter notes in an appropriate format.
- Write routine orders: Admission, Preoperative, Postoperative
- Maintain medical records in a legible, legally appropriate professional manner.
- Recognize the possibility of pregnancy in women of childbearing age and discuss the special needs and concerns of surgical patients who are pregnant or may be pregnant.
- Discuss the impact of extremes of age on diagnosis and management of the surgical patient.

Assessment of Basic Diagnostic Tests and Radiographs

- Interpret normal and abnormal biochemical and hematologic laboratory test results.

- Interpret normal and common abnormal findings in radiographs of: Chest, Abdomen, Skeleton
- Interpret a standard 12-lead electrocardiogram and identify common abnormalities.

Nutrition

- Assess nutritional status.
- Describe nutritional requirements in health and disease.
- Describe the risks and benefits of enteral and parenteral nutrition.

Airway Management and Anesthesia

- Describe and perform Advanced Cardiovascular Life Support techniques, including Assessing the adequacy of the airway, obtaining oropharyngeal control of the airway, and providing bag/mask ventilation (simulated), Performing orotracheal intubation (simulated)
- Describe the actions, risks, and optimum use of local and general anesthetic agents.

Management of Fluid/Electrolytes and Acid/Base Balance

- Calculate routine maintenance fluid requirements appropriate for age and clinical problem.
- Make changes in maintenance fluid and electrolyte orders based on biochemical and clinical assessment.
- Calculate and interpret acid/base balance: Anion gap, Arterial blood gases.

Fever and Surgical Infections

- Describe the pathophysiology and common causes of fever in the surgical patient.
- Identify the common postoperative infections.
- Describe the evaluation of a patient with postoperative fever, including appropriate use of physical examination, cultures, and other diagnostic tests.
- Describe the systemic inflammatory response syndrome and associated findings.
- Discuss common pathogens in surgical wounds.
- Describe the principles of surgical treatment of infection, including MRSA and Clostridium difficile colitis.

Wound Management

- List wound classifications.
- Describe the phases of normal wound healing, including the major cell types involved, timing of each phase and the maximum strength of a wound.
- Describe the principles of tetanus prophylaxis.
- Perform simple wound debridement under supervision.

- Perform dressing changes for sterile and contaminated wounds.

Shock and Critical Care

- List the types of shock.
 - Describe clinical findings of each.
 - Outline principles of management of each.
- List the indications for and risks of a red blood cell transfusion.
- Identify the physical findings of abnormal intravascular volume.

Trauma and Surgical Emergencies

- Discuss the primary survey of the trauma patient, including the ABCs.
- Control bleeding from external wounds.
- Correctly identify clinical and radiologic findings in common fractures
- Describe the findings and appropriate treatment of:
 - Airway compromise
 - Pericardial tamponade
 - Tension pneumothorax
- Describe the estimation of total body surface area burn in thermal injury.
- Describe initial fluid resuscitation in thermal injury.

Coagulation and Anticoagulation

- Discuss key components of the coagulation cascade.
- List a differential diagnosis of coagulopathies according to history and laboratory tests.
- Discuss prevention of deep vein thrombosis (DVT) and pulmonary embolism.
- Describe signs of acute DVT.
- List drug regimens for therapeutic anticoagulation.
- List indications and contraindications of anticoagulation.
- Recognize chronic venous insufficiency and its implications.

Pharmacology and Pharmacokinetics

- Discuss basic pharmacology of common drugs:
 - Analgesics
 - Antibiotics
 - Anticoagulants
 - Antiemetics
 - Antihypertensives
 - Antiplatelet agents
 - Corticosteroids

- Diuretics
- Gastric acid-reducing drugs
- Laxatives
- Nonsteroidal anti-inflammatory drugs (NSAIDs)
- Oral hypoglycemic agents
- Sedatives
- Discuss age- and metabolic-specific implications of drug dosing.

Core Diseases and Conditions

- Appendicitis
- Small bowel obstruction
- Abdominal wall hernia
- Trauma (neck, chest, abdomen, extremity)
- Peptic ulcer disease
- Esophageal varices
- Benign breast disease
- Breast cancer
- Morbid obesity
- Esophageal cancer
- Gastric cancer
- Achalasia
- DES
- Asymptomatic and symptomatic cholelithiasis
- Acute and chronic cholecystitis
- Acute cholangitis
- Cirrhosis
- Liver cancer
- Benign liver tumors
- Acute and chronic pancreatitis
- Pancreas cancer
- Colorectal cancer
- Diverticulosis and diverticulitis
- Inflammatory bowel disease
- Large bowel obstruction
- Anorectal disorders
- Thyroid cancer
- Thyroid nodule
- Hyperparathyroidism
- Parathyroid cancer
- Adrenal tumors

- Pheochromocytoma
- Addison's disease
- Conn's syndrome
- Sarcoma
- Melanoma
- Burns
- Lung cancer
- AAA
- Carotid disease
- Peripheral arterial ischemia
- Venous diseases
- Thromboembolic disease
- Extremity compartment syndrome
- Pelvic fractures
- Salivary tumors
- Transplantation
- Wound healing

Complications and Conditions in Surgical Patients

- Identify and outline age-appropriate initial evaluation of the following:
 - Abdominal distention
 - Alcohol or drug withdrawal
 - Altered mental status.
 - Arterial bleeding
 - Aspiration
 - Atelectasis
 - Bleeding and coagulopathy
 - Bowel obstruction
 - Chest pain
 - Congestive heart failure
 - Constipation
 - Cyanosis
 - Deep vein thrombosis
 - Diabetic ketoacidosis
 - Dyspnea
 - Dysrhythmias (ACLS)
 - Fecal impaction
 - Fever
 - Gastrointestinal bleeding – Upper and Lower
 - Hemothorax
 - Hyperosmolar coma

- Hypertension
- Hyperventilation
- Hypotension
- Hypoventilation
- Hypovolemia
- Hypoxia
- Jaundice
- Nausea
- Oliguria
- Peritonitis: Localized, Generalized
- Phlebitis, superficial
- Pleural effusion
- Pneumonia
- Pneumothorax
- Postoperative pain
- Pulmonary edema
- Pulmonary embolus
- Seizures
- Substance use disorder.
- Transfusion reaction
- Urinary retention
- Vomiting
- Wound hematoma or seroma

Surgical and Technical Skills

- Practice universal precautions routinely.
- Insert and remove nasogastric tubes.
- Insert and remove urinary catheters.
- Perform venipuncture and insert peripheral intravenous catheters.
- Scrub, gown, and glove properly.
- Maintain appropriate sterile technique in the:
 - Clinic
 - Emergency department
 - Intensive care unit
 - Operating room
 - Patient's room
- Use proper techniques for skin preparation and draping of the incision site.
- Remove sutures and staples.
- Perform minor surgical procedures under supervision:
 - Incision and drainage of superficial abscesses
 - Skin suture using simple, subcutaneous, and mattress sutures as well as staples.

- Understand potential complications of the above procedures as they relate to patient safety.

Required clinical experiences and expected level of student responsibility

| Clerkship/ Clinical Discipline | Patient Type/ Clinical Condition | Procedures/ Skills | Clinical Setting | Level of Student Responsibility |
|--------------------------------|--|----------------------------|-------------------------|---------------------------------|
| Surgery | Abdominal Pain | | Ambulatory or Inpatient | P |
| Surgery | Abdominal Wall and Groin Masses | | Ambulatory or Inpatient | P |
| Surgery | Breast Problems | | Ambulatory or Inpatient | P |
| Surgery | Fluid, Electrolyte and Acid/Base Disorders | | Inpatient | P |
| Surgery | Gastrointestinal Bleeding | | Inpatient | P |
| Surgery | Jaundice | | Inpatient | P |
| Surgery | Lung Mass | | Inpatient | P |
| Surgery | Pain (acute or chronic) | | Ambulatory or Inpatient | P |
| Surgery | Perianal Problems | | Ambulatory or Inpatient | P |
| Surgery | Post-Op Complication | | Ambulatory or Inpatient | P |
| Surgery | Vomiting, Diarrhea, Constipation | | Ambulatory or Inpatient | P |
| Surgery | | Foley Catheter Placement | Inpatient | P |
| Surgery | | Nasogastric Tube Placement | Inpatient | P |
| Surgery | | Suturing & Knot-tying | Inpatient | P |
| Surgery | | Trauma Exam | Inpatient | A |

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- **A = Assist** – The student helps in the procedure or encounter but does not fully perform it; under direct supervision.

Medicine

GOALS & OBJECTIVES

CLINICAL SKILLS

During the medicine clerkship you are expected to develop clinical skills and medical knowledge. We outline our learning objectives in the following section and encourage you to review these as the clerkship progresses.

HISTORY AND PHYSICAL EXAMINATION

Taking a medical history, performing a physical exam, admission workup, and follow up.

DIAGNOSTIC DECISION-MAKING

Formulating a differential diagnosis using history and physical exam data, developing a prioritized problem list to select tests, and applying pre- and post-test probabilities

TEST INTERPRETATION

Including complete blood count, chemistry panels, EKG, chest X-ray, urinalysis, body fluid cell counts

THERAPEUTIC DECISION-MAKING

Assessing risks, benefits, and costs of treatment options, involving patients in decision-making, selecting drugs from within classes, and designing basic treatment programs

CASE PRESENTATIONS

Presenting a new and follow-up history/physical exam, preparing follow-up notes, requesting consults

COMMUNICATIONS AND RELATIONSHIPS WITH PATIENTS AND COLLEAGUES

Establishing rapport with patients, recognizing psychosocial barriers, providing patient-centered care, educating patients, demonstrating sensitivity in racial and cultural diversity
Working and communicating with house-staff, faculty, consultants, nurses, and other staff

BIOETHICS OF CARE

Discussing advanced directives, obtaining informed consent, identifying ethical principles

SELF-DIRECTED LEARNING

Identifying key information sources, searching literature, and managing information

PREVENTION

Promoting health screening/immunization, providing counseling on healthy lifestyles

COORDINATION OF CARE AND TEAMWORK

Working and communicating with housestaff, faculty, consultants, nurses, and other staff, accessing community agencies/resources, coordinating care at home, or nursing home, requesting consults

Required clinical experiences and expected level of student responsibility

| Clerkship/ Clinical Discipline | Patient Type/ Clinical Condition | Procedures/ Skills | Clinical Setting | Level of Student Responsibility |
|--------------------------------|---|--------------------|------------------|---------------------------------|
| Medicine | Abdominal Pain | | Inpatient | P |
| Medicine | Acute Kidney Injury | | Inpatient | P |
| Medicine | Altered Mental Status | | Inpatient | P |
| Medicine | Anemia | | Inpatient | P |
| Medicine | Back Pain | | Inpatient | P |
| Medicine | Chest Pain | | Inpatient | P |
| Medicine | Chronic Kidney Disease | | Inpatient | P |
| Medicine | Common Cancer: NOS | | Inpatient | P |
| Medicine | COPD/Obstructive Airway Disease | | Inpatient | P |
| Medicine | Diabetes Mellitus | | Inpatient | P |
| Medicine | Fluid, Electrolyte and Acid/Base Disorders | | Inpatient | P |
| Medicine | Gastrointestinal Bleeding | | Inpatient | P |
| Medicine | Heart Failure | | Inpatient | P |
| Medicine | Liver Disease | | Inpatient | P |
| Medicine | Obesity | | Inpatient | P |
| Medicine | Pain (acute or chronic) | | Inpatient | P |
| Medicine | Pneumonia | | Inpatient | P |
| Medicine | Rheumatologic Disease | | Inpatient | P |
| Medicine | Syncope/pre-syncope/LOC | | Inpatient | P |
| Medicine | Venous Thromboembolism or Pulmonary Embolism or Rule-out PE | | Inpatient | P |
| Medicine | | Blood Culture | Inpatient | A |
| Medicine | | CPR | Inpatient | A |

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Neurology

GOALS & OBJECTIVES

By the end of the clerkship students will:

- Know how to take a complete neurologic history and perform a comprehensive neurological examination.
- Be able to describe the pathophysiology, clinical courses, and management of patients with common neurologic conditions and key neurologic emergencies.
- Develop skills in neurologic differential diagnosis and treatment.
- Understand the full treatment course of a patient with neurologic disease, including rehabilitation and surgery.
- Perform a directed history and physical examination on patients requiring rehabilitation and understand how to perform a mobility assessment.
- Understand what constitutes a neurosurgical emergency and have a basic understanding of neurosurgical diagnostic workup and treatment.
- Develop the ability to interpret CT scans and MRIs of the central nervous system.

Patient Care

- Perform both detailed, comprehensive neurological examinations and focused examinations.
- Obtain complete and reliable neurological histories.
- Develop an appropriate diagnostic and therapeutic plan for patients with neurologic disease.

Professionalism

- Seek feedback from faculty, staff, and patients.
- Adhere to all deadlines and be on time.
- Maintain all patient confidentiality.
- Dress appropriately.

Interpersonal and Communication Skills

- Demonstrate the skills needed to deal with patients, staff, and families.
- Exhibit an understanding of the impact of neurologic disability on patients and their families.
- Perform organized and concise oral presentations.
- Document patient information accurately and communicate treatment plans clearly to other members of the treatment team.

Systems Based Practice

- Identify the diagnostic tests used in neurology, rehabilitation medicine, and neurosurgery.
- Understand the economic impact of neurologic conditions.
- Discuss barriers that patients with neurologic disease must face in their healthcare.

Practice Based Learning and Improvement

- Develop clinical questions regarding care of neurologic and rehabilitation patients.
- Identify papers from literature that answer these questions.
- Discuss cases with members of the neurologic and rehabilitation treatment team and use information learned in treatment of future patients.

Population Health

- Describe the epidemiology of common neurologic diseases within a defined population.

Research and Scholarship

- Analyze various sources of information and apply it to addressing questions related to the care of neurologic patients.

Additional Learning Objectives for Neurology

- Describe the basic science, clinical course, and management of patients with common neurologic conditions:
 - Epilepsy/Seizure
 - Stroke/TIA
 - Movement Disorders
 - Dementia/Delirium
 - Lesions of the peripheral nervous system (Neuropathy/Myopathy)
 - Demyelinating Disease
 - Headaches/Pain
 - Dizziness
 - Brain tumors
- Describe the basic science, clinical course, and management of patients with emergent neurologic conditions:
 - Acute Stroke management
 - Subdural Hematoma/Subarachnoid Hemorrhage
 - Traumatic Brain Injury
 - Status Epilepticus
 - MS Exacerbation
 - Lesions of the peripheral nervous system
 - Myasthenic Crisis

- Guillain Barre Syndrome
- Spinal Cord Compression
- Intracranial hypertension and herniation
- Toxic-metabolic Encephalopathy

Learning Objectives for Neurosurgery

- Recognize a neurosurgical emergency in the setting of head trauma.
- Understand neurosurgical treatment of intracranial hemorrhage.
- Understand the signs and symptoms of hydrocephalus.
- Recognize the signs of symptoms of spinal cord compression.
- Describe the possible causes and basic treatment modalities for back pain.
- Know the types of tumors that affect the nervous system.

Learning Objectives for PM&R

- Perform a mobility assessment of a patient admitted to an inpatient rehabilitation environment including assessments of:
 - bed mobility
 - sitting balance
 - transfers standing balance.
 - gait
- Discuss the criteria necessary to gain admission to an acute inpatient rehabilitation unit.
- Describe the Functional Independence Measure and how it is used to measure functional progress in a rehabilitation environment.
- Describe the roles of the following rehabilitation professionals as members of the interdisciplinary rehabilitation team:
 - Physical therapist
 - Occupational therapist
 - Rehabilitation nurse
 - Rehabilitation psychologist
 - Speech/language pathologist
 - Therapeutic recreation specialist
 - Social worker

Required clinical experiences and expected level of student responsibility

| Clerkship/ Clinical Discipline | Patient Type/ Clinical Condition | Procedures/ Skills | Clinical Setting | Level of Student Responsibility |
|--------------------------------|------------------------------------|--|-------------------------|---------------------------------|
| Neurology | Altered Mental Status | | Inpatient | P |
| Neurology | Change in Sensation | | Ambulatory or Inpatient | P |
| Neurology | Change in Strength (i.e. weakness) | | Ambulatory or Inpatient | P |
| Neurology | Change in Vision | | Ambulatory or Inpatient | P |
| Neurology | Dementia/Memory Disturbances | | Ambulatory or Inpatient | P |
| Neurology | Dizziness/Vertigo | | Ambulatory or Inpatient | P |
| Neurology | Headache | | Ambulatory or Inpatient | P |
| Neurology | Seizure Disorder | | Ambulatory or Inpatient | P |
| Neurology | Stroke | | Inpatient | P |
| Neurology | Gait Disturbance | | Ambulatory or Inpatient | P |
| Neurology | | Lumbar Puncture and CSF Interpretation | Ambulatory or Inpatient | A |

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Psychiatry

Goals

The Advanced Clinical Experience in Psychiatry (Psychiatry ACE) is designed as a meaningful and intellectually stimulating in situ capstone clinical experience in psychiatry for all ZSOM students, building on their coursework in the Communications and Human Condition curricula and the Initial Clinical Experience in Psychiatry. During Psychiatry ACE, students are integrated into interdisciplinary teams that evaluate and treat patients who have acute risk to safety from psychiatric illness. Students develop their skills in presentation, formulation, risk assessment, and management of psychiatric cases, both as a team member on the clinical service and in weekly ACE Rounds. Simulations, observations, didactics, and self-guided learning round out the educational experiences. By the end of Psychiatry ACE, students will be prepared to recognize and manage psychiatric illness and acute behavioral risk that they may encounter in any setting.

Objectives

By the end of Psychiatry ACE, the student will be able to:

- Gather data on a patient presenting with a psychiatric concern.
 - Interview patients and family, including in the presence of symptoms and behaviors that interfere with history-taking.
 - Use structured screening and diagnostic tools.
 - Perform a mental status exam.
 - Select relevant laboratory and imaging testing.
- Assess an acute psychiatric problem.
 - Make a primary diagnosis and comorbid diagnoses according to DSM criteria.
 - Propose a biopsychosocial formulation of how the problem developed.
 - Evaluate behavioral risk to inform the acute disposition decision and document a clear risk assessment.
- Intervene with an evidence-based treatment plan.
 - Recommend psychiatric medications suitable given the primary diagnosis, comorbidities, and other biopsychosocial factors.
 - Refer to other treatments such as psychotherapy, neuromodulation, or intermediate levels of care.
 - Perform psychoeducation, motivational interviewing, risk assessment, and safety planning.
- Describe features of the core DSM diagnoses, including diagnostic criteria, risk and prognostic factors, developmental courses, and pathophysiology.

Students will learn about the following core DSM diagnoses:

- Neurodevelopmental disorders

- Schizophrenia spectrum and other psychotic disorders
- Bipolar and related disorders
- Depressive disorders
- Anxiety disorders
- Obsessive-compulsive and related disorders
- Trauma- and stressor-related disorders
- Substance-related and addictive disorders
- Neurocognitive disorders
- Personality disorders
- Medication-induced movement disorders and other adverse effects of medication

Required clinical experiences and expected level of student responsibility

| Clerkship/Clinical Discipline | Patient Type/Clinical Condition | Procedures/Skills | Clinical setting | Level of Student Responsibility |
|-------------------------------|---|---------------------------------|----------------------|---------------------------------|
| Psychiatry | Neurodevelopmental disorders | | Inpatient | P |
| Psychiatry | Schizophrenia spectrum and other psychotic disorders | | Inpatient | P |
| Psychiatry | Bipolar and related disorders | | Inpatient | P |
| Psychiatry | Depressive disorders | | Inpatient | P |
| Psychiatry | Anxiety disorders | | Inpatient | P |
| Psychiatry | Obsessive-compulsive and related disorders | | Inpatient | P |
| Psychiatry | Trauma- and stressor-related disorders | | Inpatient | P |
| Psychiatry | Substance-related and addictive disorders | | Inpatient | P |
| Psychiatry | Neurocognitive disorders | | Inpatient | P |
| Psychiatry | Personality disorders | | Inpatient | P |
| Psychiatry | Medication-induced movement disorders and other adverse effects of medication | | Inpatient | P |
| Psychiatry | Suicide Risk Assessment | | Standardized Patient | P |
| Psychiatry | | Electroconvulsive therapy (ECT) | Ambulatory | A |
| Psychiatry | | Methadone observation | Ambulatory | A |

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Pediatrics

Goals

By the end of the Pediatrics Clerkship, students will:

- Develop skills in obtaining a comprehensive, family-centered patient history including prenatal/birth, immunization, developmental, environmental, and social determinants of health components, utilizing standardized screening tools and incorporating prior relevant clinical data.
- Be able to interpret growth parameters and evaluate developmental milestone achievement; be able to detect abnormalities in growth and development developing competency in appropriate diagnostic work-up and indicated specialists services.
- Recognize, understand the signs and symptoms, pathophysiology, diagnoses, treatment, and prognoses of common disorders of infancy, childhood, and adolescence.
- Utilization of intellectual curiosity, critical appraisal of medical literature and clinical reasoning skills in creating a prioritized problem list and plan for patient care
- Achieve proficiency in both oral and written communication skills of patient information in an organized manner to all members of the interdisciplinary team and outpatient continuum, inclusive of:
 - History
 - Physical exam findings
 - Objective data (e.g., labs and imaging)
 - Consultants and specialty input
 - Discharge planning
 - Relaying information using patient-centered language through documentation in the EMR.
- 6. Refine communication skills through family-centered rounds, enabling therapeutic relationships between the clinical team and patients/families with particular sensitivity to unique social and cultural frameworks

Learning Objectives

I.MEDICAL KNOWLEDGE

HEALTH SUPERVISION

- Describe the components of a health supervision visit, including health promotion and disease/injury prevention, appropriate use of screening tools, and immunizations.

- Describe the rationale for common and uncommon adverse effects of, and contraindications to childhood/adolescent immunizations.
- Describe the indications, appropriate use, interpretation, and limitations of screening tests used during health supervision visits.
- Define anticipatory guidance and describe how it changes according to the age and development of a child.

NEWBORNS

- Describe the transition from the intrauterine to extra uterine environment, including cardiovascular/respiratory adjustment, glucose and temperature regulation, and initiation of feeding.
- List information from the prenatal and birth history that has implications on the health of the newborn.
- Describe how gestational age can be assessed and identify key indications of gestational maturity.
- Describe the challenges for parents and families adjusting to the arrival of a new baby to their home.
- List the differential diagnoses and complications of common problems encountered in newborns, including prematurity, jaundice, fever, vomiting and poor feeding, and respiratory distress.

BEHAVIOR

- Identify normal patterns of behavior in developing children.
- Describe the typical presentation of common behavioral problems and issues in different age groups.
- Describe the emotional disturbances or medical conditions that may manifest as alterations in school performance, and peer/family relationships.
- Distinguish between age-appropriate behavior, inappropriate behavior, and behavior that suggests severe developmental or psychiatric illness in children of different ages.
- Describe how somatic complaints may represent psychosocial problems.
- Describe situations where pathology in the family unit contributes to childhood behavior problems.

CHRONIC DISEASE AND DISABILITY

- Describe clinical features and management of chronic medical conditions commonly seen in children.

CHILD ABUSE/ADVOCACY

- List characteristics of the medical history that should trigger concern for possible abuse or neglect.

- Describe the barriers that prevent children from accessing healthcare – including those socioeconomic and geographic.

DEVELOPMENT

- Describe the four developmental domains of infancy and childhood.
- Describe how abnormal findings on a developmental screening tool would suggest a diagnosis of developmental delay.

GROWTH

- Describe variants of normal growth in healthy children.
- Identify and describe abnormal growth patterns in children.
- Identify childhood overweight and obesity, and failure to thrive using BMI, and other growth measures.
- Outline the differential diagnoses and initial management of childhood overweight and obesity, and failure to thrive.

NUTRITION

- Describe the advantages and common difficulties of breastfeeding.
- Describe the clinical presentation of common nutritional deficiencies in childhood.
- Describe nutritional factors that contribute to overweight and obesity, and failure to thrive.
- Describe the endocrine, cardiovascular, and orthopedic consequences of childhood obesity.

FLUIDS AND ELECTROLYTES

- Describe the causes, consequences, and initial management of common fluid imbalances and electrolyte disturbances in children; as well as conditions in which fluid may need to be restricted.
- Describe the physical findings and initial management of hypovolemic shock.
- Calculate and write orders for IV maintenance fluids, taking water and electrolyte requirements into account.

GENETICS AND DYSMORPHOLOGY

- Describe the genetic basis and clinical manifestations of common syndromes, malformations, and associations.

ACUTE ILLNESS

- List age appropriate differential diagnoses for pediatric patients presenting with common symptoms, physical findings, and laboratory results.

- Describe epidemiology, as well as clinical, laboratory, and radiologic findings of common pediatric conditions.
- Explain how physical manifestations of disease, as well as evaluation and management vary with pediatric patients' ages.

EMERGENCIES

- List the symptoms of, and describe the initial emergency management of shock, respiratory distress, lethargy, apnea, and status epilepticus in pediatric patients.
- Describe the age-appropriate differential diagnoses, and key clinical findings that would suggest a diagnosis for common emergent clinical problems in pediatrics, including:
 - Airway obstruction/respiratory distress
 - Altered mental status.
 - Apnea
 - Ataxia
 - GI bleeding
 - Injuries/accidents
 - Proptosis
 - Seizures
 - Shock
 - Suicidal ideation/attempt

POISONINGS

- Describe the developmental vulnerability for, and strategies for prevention of poisoning and accidental ingestion in infants, toddlers, children, and adolescents.
- Describe the acute signs and symptoms, and immediate emergency management of ingestion of commonly noted substances.
- Describe environmental sources of lead, the clinical and social importance and implications of lead poisoning, and screening tools to identify children at risk.

THERAPEUTICS

- Describe how to assess whether a drug is excreted in breast milk, and whether it is safe for use by a nursing mother.
- List medications with are contraindicated or must be used with extreme caution with pediatric patients.
- Describe appropriate use of medications in the outpatient setting, and when they are not appropriate to use.
- Identify safe and effective pharmacologic therapy for common or life-threatening conditions in pediatrics.

II. PATIENT CARE

- Demonstrate the ability to obtain a complete history with all elements, in an age-appropriate and sensitive manner from a child and accompanying adult.
- Conduct a physical examination pertinent to the patient age and presenting complaint.
- Accurately graph and interpret height, weight, head circumference, and BMI.
- Outline a diagnostic plan based on the differential diagnosis and justify diagnostic tests and procedures taking into account sensitivity, specificity, risks, benefits, limitations, and costs.
- Formulate a therapeutic plan appropriate to the working diagnosis.
- Write appropriate admission and daily orders for hospitalized patients.

III. INTERPERSONAL SKILLS AND COMMUNICATION

- Demonstrate effective verbal and non-verbal communication skills with children and parents/families.
- Correctly identify the need for an interpreter in specific patient-provider interactions.
- Demonstrate effective oral and written communication with the healthcare team.
- Present a complete, well organized verbal summary of the patient's history and physical examination findings, including assessment and plan, modifying the presentation to fit the time constraints and educational goals of the situation.
- Effectively communicate information about the diagnosis, diagnostic plan, and treatment plan to the patient and family and assess their understanding.

IV. SYSTEMS BASED PRACTICE

- Effectively communicate information to the healthcare team during patient sign-outs.
- Demonstrate an understanding of the need to involve patients and parents/families in formulation of care plans.
- Demonstrate an understanding of the need to assist patients and parents/families in navigating complex healthcare systems.

V. PRACTICE BASED LEARNING AND IMPROVEMENT

- Demonstrate insightfulness into limitations, and engagement in self-regulation.
- Demonstrate respect for others' points of view of self, even when disagreement.
- Utilizes external sources of feedback to make positive changes in performance.

VI. PROFESSIONALISM

- Demonstrate respect for patients' and parents'/families' modesty, privacy, and confidentiality, as well as respect for beliefs and lifestyle.
- Demonstrate ability to incorporate cultural, ethical, and socioeconomic influences into the negotiation of a healthcare plan.
- Describe the application of major ethical principles – justice, beneficence, non-maleficence, and respect for autonomy.
- Demonstrate collegiality and respect for members of the team.
- Demonstrate a positive attitude and regard for education through intellectual curiosity, initiative, honesty, responsibility, reliability, and preparedness.
- Demonstrate maturity in soliciting, accepting, and acting on feedback.

VII. POPULATION HEALTH

- Describe a physician's role and responsibility in advocating for the needs of individuals and populations within society.
- Describe critical components of partnering with community members to promote child health.
- Describe the types of problems that benefit more from a community approach than an individual approach.
- Identify a specific pediatric healthcare issue and outline a potential approach to advocacy.

VIII. RESEARCH AND SCHOLARSHIP

- Search for relevant information using electronic (or other) databases and critically appraise the information obtained to make evidence-based decisions.
- Research specific conditions and illness and teach members of care team.

Required clinical experiences and expected level of student responsibility

| Clerkship/ Clinical Discipline | Patient Type/ Clinical Condition | Procedures/ Skills | Clinical Setting | Level of Student Responsibility |
|--------------------------------|---|---|-------------------------|---------------------------------|
| Pediatrics | Asthma | | Ambulatory or Inpatient | P |
| Pediatrics | Chronic Medical Problem | | Ambulatory or Inpatient | P |
| Pediatrics | Neurologic Concern (for example, lethargy, irritability, fussiness, headache) | | Ambulatory or Inpatient | P |
| Pediatrics | Parental Concern or Abnormalities Related to Development | | Ambulatory or Inpatient | P |
| Pediatrics | Emergent Clinical Problem (for example, respiratory distress, shock, ataxia, seizures, airway obstruction, apnea, proptosis, suicidal ideation, trauma, cyanosis) | | Ambulatory or Inpatient | P |
| Pediatrics | Fluid, Electrolyte and Acid/Base Disorder | | Inpatient | P |
| Pediatrics | GI Tract Concern (for example, nausea, vomiting, diarrhea, abdominal pain) | | Ambulatory or Inpatient | P |
| Pediatrics | Parental Concerns or Abnormalities Related to Growth | | Ambulatory | P |
| Pediatrics | Lower Respiratory Tract Concern (for example, cough, wheeze, shortness of breath) | | Ambulatory or Inpatient | P |
| Pediatrics | Parental Concerns or Abnormalities Related to Nutrition | | Ambulatory or Inpatient | P |
| Pediatrics | Well Visit (for example, newborn-year 1, child 1-6, child 6-10, adolescent) | | Ambulatory | P |
| Pediatrics | Skin and Subcutaneous Lesions/Rash | | Ambulatory or Inpatient | P |
| Pediatrics | Fever without Localizing Findings | | Ambulatory or Inpatient | P |
| Pediatrics | Neonatal Jaundice | | Ambulatory or Inpatient | P |
| Pediatrics | Upper Respiratory Tract Concern (for example, sore throat, difficulty swallowing, otalgia) | | Ambulatory or Inpatient | P |
| Pediatrics | | Administer vaccines in infants and children, using appropriate needle size and location | Ambulatory or Inpatient | P |

P = Perform – The student fully performs the procedure or skill under direct supervision

A = Assist – The student helps in the procedure or encounter but does not fully perform it; under direct supervision.

Obstetrics and Gynecology

GOALS

By the end of the Advanced Clinical Experience in Obstetrics and Gynecology, students will be able to:

- Demonstrate competence in the medical interview and physical examination of patients, incorporating ethical principles, social determinants of health, and cultural humility to provide patient-centered, equitable care.
- Describe the physiology, pathophysiology, clinical presentation, and management of common obstetric and gynecologic conditions, as well as key emergencies.
- Develop skills in formulating differential diagnoses and management plans for OB/GYN conditions.
- Demonstrate foundational skills in intrapartum and postpartum care of both the birthing patient and the newborn.
- Describe principles of perioperative care and demonstrate familiarity with commonly performed gynecologic procedures.
- Provide counseling and longitudinal care in the ambulatory setting, including preventive health strategies across the lifespan.
- Recognize obstetric and gynecologic emergencies and demonstrate an understanding of initial evaluation and management.

LEARNING OBJECTIVES

The ACE experience in Obstetrics and Gynecology is designed to provide students with the clinical exposure necessary to develop the knowledge and skills required to deliver high-quality care to patients across the lifespan. The curriculum is interdisciplinary and aligns with national educational standards, including those of the ACGME, APGO, and CREOG.

- The Accreditation Council for Graduate Medical Education (ACGME) Core Competencies: <http://www.acgme.org>. They have outlined essential skills that need to be nurtured in an effective educational program. Students are expected to develop proficiency in the following domains:

Medical Knowledge - Trainees must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social- behavioral sciences, as well as the application of this knowledge to patient care.

Patient Care - Trainees must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Interpersonal Skills and Communication - Trainees must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Professionalism - Trainees must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Practice Based Learning and Improvement - Trainees must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.

Systems Based Practice - Trainees must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Research and Scholarship - The curriculum must advance trainees' knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care.

Population Health – Trainees must demonstrate an understanding of the principles of epidemiology which forms the scientific basis for public health practice.

Required clinical experiences and expected level of student responsibility

| Clerkship/ Clinical Discipline | Patient Type/ Clinical Condition | Procedures/ Skills | Clinical Setting | Level of Student Responsibility |
|--------------------------------|----------------------------------|--|-------------------------|---------------------------------|
| Obstetrics and Gynecology | Need for Contraception | | Ambulatory or Inpatient | P |
| Obstetrics and Gynecology | Menstrual Cycle Abnormality | | Ambulatory | P |
| Obstetrics and Gynecology | Pain (acute or chronic) | | Ambulatory or Inpatient | P |
| Obstetrics and Gynecology | Pap Smear-Abnormal | | Ambulatory | P |
| Obstetrics and Gynecology | Pelvic Pain/Dysmenorrhea | | Ambulatory or Inpatient | P |
| Obstetrics and Gynecology | Postpartum Complication | | Inpatient | P |
| Obstetrics and Gynecology | | Breast Exam | Ambulatory or Inpatient | P |
| Obstetrics and Gynecology | | Cesarean Section | Inpatient | A |
| Obstetrics and Gynecology | | Pap Smear | Ambulatory | P |
| Obstetrics and Gynecology | | Pelvic Exam | Ambulatory or Inpatient | P |
| Obstetrics and Gynecology | | Suturing & Knot-tying | Inpatient | P |
| Obstetrics and Gynecology | | Testing for Amniotic Fluid | Inpatient | A |
| Obstetrics and Gynecology | | Testing for STIs | Ambulatory | P |
| Obstetrics and Gynecology | | Vaginal Delivery | Inpatient | A |
| Obstetrics and Gynecology | | Interpretation of Fetal Heart Tracings | Inpatient | P |

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A = Assist – The student helps in the procedure or encounter but does not fully perform it; under direct supervision.

Assessment Methods

Student performance in the core clerkships is assessed using multiple complementary methods that evaluate medical knowledge, clinical reasoning, written communication, and clinical performance. Although the weighting of individual components varies by clerkship, all clerkships use a standardized framework that includes the following assessment method.

| Assessment Method | Description |
|---|--|
| NBME Subject Examination | National standardized multiple-choice examination that assesses discipline-specific medical knowledge. |
| ACE Rounds | Weekly small-group sessions (approximately two hours per week) led by the ACE Director or expert clinical faculty. Students present patient cases, participate in clinical reasoning discussions, and are assessed on the quality of their case presentations, clinical reasoning, and active participation. |
| Clinical Documentation (Notes/Write-ups) | Students complete admission notes and other patient write-ups that are assessed for clinical reasoning, organization, documentation skills, and medical decision-making. |
| Clerkship Examinations | Clerkship-specific written examinations developed by the ACE Directors consisting primarily of short-answer and clinical reasoning questions designed to assess application of knowledge to patient care. |
| Clinical Assessment of Students | Faculty and resident evaluations of students' clinical performance throughout the clerkship, including patient care, clinical reasoning, professionalism, communication skills, teamwork, and overall participation in the clinical learning environment. |

Assessment components by clerkship

| | NBME Subject Exam | ACE Rounds | Notes/Write-ups | Examinations | Clinical Assessment of Student |
|------------|-------------------|--------------------------------------|-----------------|--------------|--------------------------------|
| Medicine | 30% | 20% | 15% | 20% | 15% |
| Surgery | 30% | 25% | N/A | 30% | 15% |
| Pediatrics | 30% | 25% | N/A | 25% | 20% |
| OBGYN | 30% | 25% | N/A | 30% | 15% |
| Neurology | 30% | 30% combined: "Facilitator Feedback" | | 25% | 15% |
| Psychiatry | 30% | 20% | 15% | 15% | 20% |