

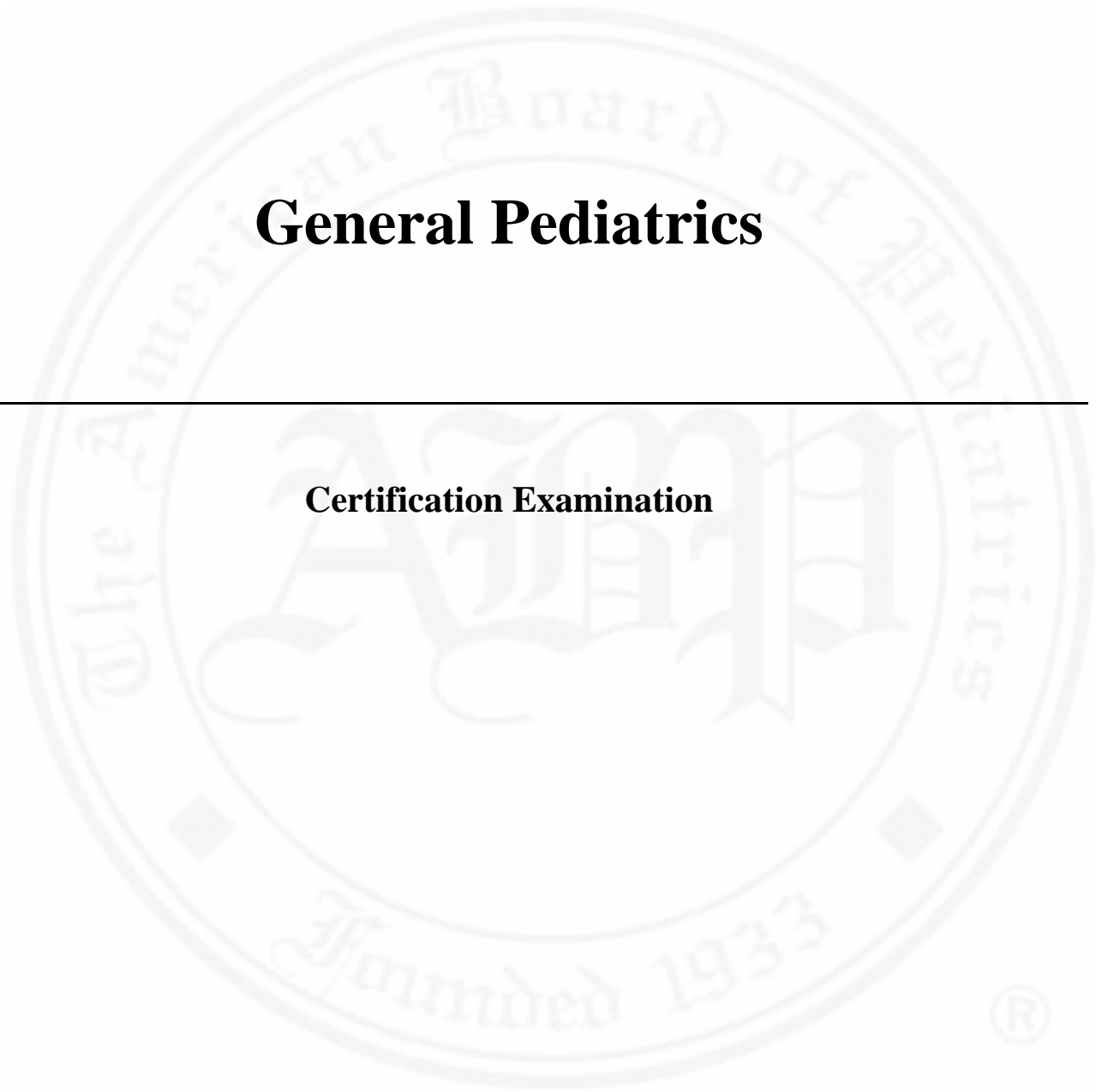
THE AMERICAN BOARD OF PEDIATRICS®  
**CONTENT OUTLINE**

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**General Pediatrics**

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**Certification Examination**



## **INTRODUCTION**

This document was prepared by the American Board of Pediatrics for the purpose of developing certification examinations for general pediatricians. The outline, which was developed by a committee of pediatric practitioners and educators, contains the categories that will be reflected in the general pediatrics certification examination.

If you have comments or questions about these content specifications, or about how they are used, please e-mail at [abpeds@abpeds.org](mailto:abpeds@abpeds.org).

## General Pediatrics Exam Percentage List

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## **I. Growth and Development Milestones**

### **A. Growth**

#### **1. Normal growth**

- a. Measurement**
- b. Linear growth and weight gain**
- c. Head growth**

#### **2. Atypical growth**

### **B. Surveillance and screening**

### **C. Developmental milestones**

#### **1. Milestones for infants and young children**

- a. Neonatal period (first four weeks after birth)**
- b. Two months**
- c. Four months**
- d. Six months**
- e. Nine months**
- f. Twelve months**
- g. Fifteen months**
- h. Eighteen months**
- i. Twenty-four months**
- j. Thirty-six months**
- k. Four years**
- l. Five years**
- m. Six years**

#### **2. Milestones for kindergarten readiness**

## **II. Nutrition and Nutritional Disorders**

- A. Normal nutritional requirements**
  - 1. Age-related requirements**
    - a. General**
    - b. Minerals**
    - c. Vitamins**
    - d. Fat**
    - e. Protein**
    - f. Calories**
- B. Infant feeding**
  - 1. Breast-feeding**
  - 2. Formula-feeding**
  - 3. Introduction of solid food**
- C. Deficiency states and hypervitaminosis (including rickets)**
  - 1. Vitamin deficiency states**
  - 2. Mineral deficiency states**
  - 3. Protein, calorie deficiency states**
  - 4. Hypervitaminosis**
- D. Principles of nutritional support**
  - 1. General**
  - 2. Tube feeding, enteral nutrition**
  - 3. Parenteral nutrition**
- E. Nutritional problems associated with specific diseases, conditions**
  - 1. Gastrointestinal disorders**
  - 2. Renal disease**
  - 3. Hepatic disease**

4. **Cardiac disease**
5. **Cystic fibrosis**
6. **Hematologic-oncologic disease**
7. **Neurologically handicapped children**
8. **Burns**
9. **Allergies**
10. **Athletes**
11. **Vegetarians**

**F. Obesity**

**G. Weight loss**

### **III. Preventive Pediatrics**

#### **A. Immunizations**

1. **Indications and schedules**
2. **General contraindications**
  - a. **Immune deficiency**
  - b. **Egg allergy**
3. **Prevention by active immunization**
  - a. **Influenza vaccine**
  - b. **Meningococcal vaccine**
  - c. **Pneumococcal vaccine**
  - d. **Hepatitis vaccines**
  - e. **Tetanus vaccine**
  - f. **Diphtheria-tetanus combination**
  - g. **Pertussis vaccines (cellular and acellular)**
  - h. **DTaP and Tdap vaccines**
  - i. **Measles vaccine**



3. Burns
4. Bites and stings
5. Water safety
6. Sun exposure
7. Firearms
8. Personal safety (eg, strangers)
9. "Screen" time (eg, TV, computer)
10. Sleep (eg, SIDS, obstructive sleep apnea, normal patterns)

#### **IV. Poisoning and Environmental Exposure to Hazardous Substances**

##### **A. General**

1. Prevention and risks
2. Poison control centers, online resources
3. Therapeutic options for poisoning
4. Recognition of ingestion of unknown substance(s)

##### **B. Specific acute poisonings, ingestions, and exposures**

1. Nonsteroidal analgesics
2. Opiates
3. Anticholinergic substances
4. Salicylates
5. Antihypertensives
6. Tricyclic antidepressants
7. Ethanol
8. Hydrocarbons
9. Organophosphates
10. Carbon monoxide
11. Acids, alkali, and alkaloids

12. **Button batteries**
13. **Coins**
14. **Iron**
15. **Ethylene glycol**
16. **Plants**
17. **Complementary-alternative medicines**
18. **Over-the-counter medicines (eg, cold remedies)**

**C. Exposure to toxic substances in the environment**

1. **Age-related risk and impact of exposure**
2. **Obtaining an exposure history**
3. **Contaminants in drinking water**
4. **Contaminants in food**
5. **Chemical hazards in the community**
6. **Chemical exposures in the home**
7. **Exposures from terrorism (eg, anthrax, smallpox)**

**V. Fetus and Newborn Infant**

**A. Normal newborn infants**

1. **Delivery room management**
  - a. **Temperature control**
  - b. **Assessment**
2. **Fetal assessment**
  - a. **Non-stress test**
  - b. **Stress test**
  - c. **Biophysical profile**
3. **Maternal screening (see IX.I.30)**
4. **Transition**

- a. **Maturation assessment**
  - (1). **AGA, LGA, SGA**
  - (2). **Preterm, term, postterm**
  
- 5. **Routine care**
  - a. **General**
  - b. **Vitamin K**
  - c. **Eye prophylaxis**
  - d. **Feeding requirements**
    - (1). **Calories**
    - (2). **Fluid**
  - e. **Screening**
    - (1). **General**
    - (2). **Glucose**
    - (3). **Hematocrit**
    - (4). **Serologic test for syphilis**
    - (5). **Expanded metabolic screening**
      - (a). **Thyroid function**
      - (b). **Phenylketonuria**
    - (6). **Hearing**
  - f. **Cord care**
  - g. **Physiologic events**
    - (1). **Stool**
    - (2). **Urination**
    - (3). **Vital signs**
    - (4). **Spitting vs vomiting**
    - (5). **Jaundice**

6. **Discharge plans**
  7. **Home birth**
- B. Abnormal newborn infants**
1. **General**
  2. **Resuscitation**
    - a. **Ventilation**
    - b. **Suctioning**
    - c. **Perfusion**
  3. **Very-low-birth-weight infant**
  4. **Conditions, diseases**
    - a. **Hypoxia, ischemia**
    - b. **Polycythemia, hyperviscosity**
    - c. **Nonphysiologic jaundice**
    - d. **Intracranial hemorrhage**
    - e. **Small-for-gestational age**
    - f. **Respiratory distress**
      - (1). **General**
      - (2). **Respiratory distress syndrome**
      - (3). **Pneumothorax**
      - (4). **Meconium aspiration syndrome**
      - (5). **Congenital pneumonia**
      - (6). **Transient tachypnea of the newborn**
    - g. **Cyanosis (nonrespiratory)**
    - h. **Bronchopulmonary dysplasia (see XIII.E.1)**
    - i. **Sepsis**
    - j. **TORCH infections, including HIV**

- k. Recognition and stabilization of surgical emergencies**
- l. Necrotizing enterocolitis**
- m. Intestinal obstruction**
- n. Tracheoesophageal fistula**
- o. Abdominal-intestinal wall defect**
- p. Infants affected by maternal disorders (eg, diabetes, SLE)**
- q. Infants affected by maternal medications**
- r. Infants affected by maternal substance use**
- s. Multiple congenital anomalies (See VII)**
- t. Oligohydramnios**
- u. Deformations**
  - (1). Amniotic bands**
  - (2). Positional deformations (eg, hip dysplasia)**

## **VI. Fluid and Electrolyte Metabolism**

- A. Composition of body fluids**
  - 1. Intracellular, extracellular**
  - 2. Electrolytes (sodium, potassium, chloride)**
  - 3. Protein**
- B. Acid-base physiology**
  - 1. Normal mechanisms and regulation**
  - 2. Acidosis, alkalosis**
- C. Electrolyte abnormalities**
  - 1. Sodium**
    - a. Hypernatremia**
    - b. Hyponatremia**

2. **Potassium**
  - a. **Hyperkalemia**
  - b. **Hypokalemia**

3. **Chloride**

**D. Disease states, specific therapy**

1. **Pyloric stenosis**
2. **Gastroenteritis**
3. **Acute renal failure**
4. **Shock**
5. **SIADH**
6. **Cystic fibrosis**
7. **Dehydration**
8. **Hyperosmolar non-ketotic coma**

**VII. Genetics and Dysmorphology**

**A. General**

1. **Mendelian inheritance**
  - a. **Autosomal dominant**
    - (1). **Incomplete penetrance**
    - (2). **Variable expressivity**
  - b. **Autosomal recessive**
  - c. **X-linked recessive (see also XXVII)**
  - d. **X-linked with incomplete penetrance**
  - e. **X-linked dominant**
2. **Multifactorial inheritance**
3. **Mitochondrial inheritance**

**B. Diagnostic testing**

- 1. Prenatal**
  - a. Invasive**
    - (1). Preimplantation genetic diagnosis**
    - (2). Chorionic villus sampling**
    - (3). Amniocentesis**
    - (4). Prenatal umbilical blood sampling**
  - b. Noninvasive**
    - (1). Ultrasonography**
    - (2). Maternal blood screening**
- 2. Postnatal**
  - a. Karyotyping**
  - b. Fluorescent in situ hybridization**
  - c. Comparative genomic hybridization**
  - d. Molecular analysis**
  - e. Metabolic analysis**
  - f. Newborn screening (see also V.A.5.e and XI)**

**C. Chromosomal abnormalities**

- 1. Autosomal**
  - a. Trisomy**
  - b. Deletions**
  - c. Translocations**
  - d. Duplications**
  - e. Inversions**
  - f. Contiguous gene syndromes**
- 2. Sex chromosomes**
  - a. Turner syndrome**

**b. Klinefelter syndrome**

**3. 47,XYY**

**4. 47,XXX**

**D. Gene abnormalities**

**1. Short stature (see also XI.B.1)**

**2. Overgrowth syndromes**

**3. Neuromuscular disorders (see also XVIII)**

**4. Facial and limb abnormalities**

**5. Osteochondrodysplasia (see also XIX.A.1.b)**

**6. Craniosynostosis**

**7. Storage disorders (see also X.A.1.b)**

**8. Connective tissue disorders (see also XXI.G)**

**9. Hamartoses**

**E. Miscellaneous**

**1. Pharmacogenetics**

**2. Trinucleotide expansion**

**3. Imprinting**

**4. Anticipation**

**5. Associations**

**6. Sequences**

**7. Genetic counseling**

**VIII. Allergic and Immunologic Disorders**

**A. General**

**1. Epidemiology**

**2. Prevention by dietary restriction**

**3. Relation to environmental exposure**

4. **Influence of genetics on development of allergy**
- B. **Allergic rhinitis (see also XXIII.B.3.b.)**
- C. **Asthma**
  1. **Etiology, epidemiology, natural history**
  2. **Diagnosis**
  3. **Treatment**
    - a. **Acute**
    - b. **Outpatient**
- D. **Atopic dermatitis (see XX.B)**
- E. **Urticaria, angioedema, anaphylaxis**
- F. **Adverse reactions to substances**
  1. **Food**
  2. **Drugs**
  3. **Contrast media**
- G. **Issues in diagnosis and treatment of allergic disease**
  1. **Skin testing**
  2. **In vitro testing**
  3. **Immunotherapy**
  4. **Avoidance education**
- H. **Immunodeficiency disorders**
  1. **Presenting signs and symptoms of potential immunodeficiency**
  2. **Screening tests**
- IX. **Infectious Diseases**
  - A. **Public health considerations: prevention of infectious diseases**
    1. **In child-care centers**
    2. **Hospital and office infection control**

3. **Through breast-feeding**
4. **Medical evaluation of internationally adopted children**
5. **Prevention of vector-borne diseases**
6. **Prevention of infection associated with recreational water use**

**B. Antibiotics**

1. **Aminoglycosides**
2. **Beta-lactam antibiotics**
3. **Clindamycin**
4. **Macrolides**
5. **Rifampin**
6. **Quinolones**
7. **Tetracyclines**
8. **Trimethoprim with sulfamethoxazole**
9. **Vancomycin**

**C. Antivirals**

**D. Antiparasitics**

**E. Antimicrobial resistance**

**F. Antifungals**

1. **Amphotericin B**
2. **Fluconazole**
3. **Griseofulvin**

**G. Infections in immunocompromised hosts**

1. **Malnutrition**
2. **Central nervous system disease**
3. **Asplenia**

4. **Malignancy**
5. **HIV and AIDS**
6. **Burn injury**
7. **Indwelling catheters**

**H. Specific viral pathogens**

1. **Cytomegalovirus**
2. **Epstein-Barr virus**
3. **Herpes simplex virus (see also XVII.D.4.)**
4. **Varicella-zoster virus**
5. **Measles virus**
6. **Mumps virus**
7. **Rabies virus**
8. **Rubella virus**
9. **Parvovirus B19 (erythema infectiosum, fifth disease)**
10. **Human herpesvirus type 6 (roseola)**
11. **Human immunodeficiency virus**
12. **Enteroviruses (echo-, coxsackie-, numbered entero-, poliomyelitis)**
13. **Influenza virus**
14. **Parainfluenza virus**
15. **Adenovirus (respiratory)**
16. **Respiratory syncytial virus**
17. **Rotavirus**
18. **Miscellaneous enteric viruses (adenovirus, norovirus)**
19. **Arbovirus**
20. **Hepatitis A virus**

21. **Hepatitis B virus**
22. **Hepatitis C virus**
23. **Human papillomavirus**
24. **Human metapneumovirus**

**I. Bacterial pathogens**

1. **Anaerobes**
2. **Arcanobacterium haemolyticum**
3. **Brucella (brucellosis)**
4. **Campylobacter species**
5. **Bartonella henselae (cat-scratch disease)**
6. **Chlamydia and Chlamydophila (chlamydial infections)**
7. **Clostridium botulinum (botulism)**
8. **Clostridium difficile**
9. **Corynebacterium diphtheriae (diphtheria) (See also III.A.)**
10. **Enterococcus**
11. **Escherichia coli**
12. **Neisseria gonorrhoeae (gonococcal infections)**
13. **Hemophilus influenzae**
14. **Helicobacter pylori**
15. **Kingella kingae**
16. **Listeria monocytogenes**
17. **Borrelia burgdorferi (Lyme disease)**
18. **Neisseria meningitidis (meningococcal infections)**
19. **Mycobacterium tuberculosis**
20. **Mycoplasma pneumoniae**
21. **Nontuberculous mycobacteria**

22. **Pasteurella multocida**
23. **Bordetella pertussis (pertussis)**
24. **Pseudomonas species**
25. **Rickettsial diseases (Rocky Mountain spotted fever, ehrlichiosis)**
26. **Salmonella species**
27. **Shigella species (shigellosis)**
28. **Staphylococcus aureus**
29. **Staphylococcus, coagulase-negative**
30. **Streptococcus agalactiae (group B streptococcus)**
31. **Streptococcus pneumoniae (pneumococcal infections)**
32. **Streptococcus pyogenes (group A streptococcus)**
33. **Treponema pallidum (syphilis)**
34. **Yersinia enterocolitica**

**J. Fungal pathogens**

1. **Candida species**
2. **Coccidioides**
3. **Aspergillus, Histoplasma, Sporothrix**

**K. Parasitic pathogens (protozoa, metazoa)**

1. **Giardia lamblia (giardiasis)**
2. **Toxoplasma gondii (toxoplasmosis)**
3. **Trichomonas vaginalis (trichomoniasis)**
4. **Pneumocystis jirovecii (carinii)**
5. **Enterobius vermicularis (pinworms)**
6. **Plasmodium species (malaria)**
7. **Ascaris (ascariasis)**

8. **Entamoeba histolytica (amebiasis)**
  9. **Necator americanus (hookworm)**
  10. **Taenia solium, Taenia saginata, Taenia asiatica**
  11. **Toxocara**
- L. Emerging infectious diseases**
1. **SARS-associated coronavirus infection**
  2. **Avian influenza**
- X. Metabolic Disorders**
- A. Diagnosis**
1. **General**
    - a. **Screening**
    - b. **Genetics (see also VII.D.7)**
    - c. **Recognition by signs and symptoms**
    - d. **Recognition by laboratory results**
- B. Treatment**
1. **General**
  2. **Diet**
  3. **Medication**
  4. **Prognosis and long-term care**
- XI. Endocrine Disorders**
- A. Sex differentiation**
1. **Normal development**
  2. **Ambiguous genitalia**
    - a. **Congenital adrenal hyperplasia**
    - b. **Other intersex disorders**
- B. Growth**

1. **Short stature (see also VII.D.1)**
    - a. **General**
    - b. **Familial**
    - c. **Constitutional growth delay**
    - d. **Growth hormone deficiency**
  2. **Tall stature**
- C. Puberty**
1. **Normal**
  2. **Precocious puberty**
  3. **Delayed puberty**
    - a. **General**
    - b. **Primary gonadal (gonadal dysgenesis/Turner syndrome)**
    - c. **Constitutional**
- D. Thyroid disorders**
1. **Hashimoto thyroiditis**
  2. **Cyst, tumor, nodule**
  3. **Hypothyroidism**
  4. **Hyperthyroidism**
- E. Parathyroid disorders**
- F. Adrenal gland disorders**
1. **General**
  2. **Addison disease**
  3. **Cushing syndrome**
- G. Pituitary gland disorders**
- H. Diabetes**
1. **General**

2. **Diabetic ketoacidosis**
  3. **Type 2 diabetes**
  - I. **Metabolic syndrome**
  - J. **Disorders of PTH, calcium, and phosphate metabolism (see II.C.)**
    1. **Hypocalcemia**
    2. **Hypercalcemia**
    3. **Hypophosphatemia**
    4. **Rickets (see II.C)**
- XII. Gastrointestinal Disorders**
- A. **Abdominal pain**
    1. **Acute**
      - a. **General**
      - b. **Appendicitis**
      - c. **Cholecystitis, cholelithiasis**
      - d. **Pancreatitis**
      - e. **Intussusception, volvulus, malrotation**
      - f. **Trauma**
      - g. **Obstruction**
    2. **Chronic**
      - a. **Functional**
      - b. **Irritable bowel syndrome**
      - c. **Acid-peptic disorder**
      - d. **Other**
  - B. **Abdominal mass**
  - C. **Vomiting**
    1. **Gastrointestinal and nongastrointestinal causes of vomiting**

2. **Vomiting from infectious and noninfectious causes**
  3. **Structural causes of vomiting**
  4. **Disorders associated with chronic vomiting**
- D. Esophageal disorders**
1. **Motility**
  2. **Trauma**
    - a. **General**
    - b. **Caustic ingestion**
    - c. **Foreign body**
  3. **Gastroesophageal reflux**
- E. Diarrhea**
1. **Diarrhea caused by infectious mechanisms**
  2. **Diarrhea caused by noninfectious mechanisms**
  3. **Chronic nonspecific diarrhea**
  4. **Protracted diarrhea**
- F. Constipation**
- G. Jaundice**
1. **Neonatal and infancy**
    - a. **Bilirubin metabolism**
    - b. **Breast-milk jaundice**
    - c. **Infectious and noninfectious causes of jaundice**
  2. **Children and adolescents**
    - a. **Infectious and noninfectious causes of jaundice**
    - b. **Obstructive jaundice**
- H. Gastrointestinal bleeding**
1. **Upper versus lower gastrointestinal bleeding**

- 2. Polyps
    - 3. Meckel diverticulum
  - I. Ulcer disease
  - J. Hepatomegaly
  - K. Malabsorption
    - 1. General
    - 2. Mucosal disease (celiac disease)
    - 3. Pancreatic insufficiency (cystic fibrosis, Shwachman syndrome)
    - 4. Enzyme deficiency (lactase, sucrase-isomaltase)
    - 5. Short-gut syndrome, including bacterial overgrowth
    - 6. Fat malabsorption and chronic liver disease (biliary atresia, CF)
  - L. Inflammatory bowel disease
  - M. Refeeding syndrome
- XIII. Respiratory Disorders
  - A. General signs and symptoms
    - 1. Stridor
    - 2. Respiratory failure
    - 3. Cough
    - 4. Exercise intolerance
    - 5. Apnea
    - 6. Wheezing
    - 7. Tachypnea
    - 8. Hemoptysis
    - 9. Cyanosis

- 10. Clubbing**
- B. Upper airway**
  - 1. General**
  - 2. Croup**
  - 3. Epiglottitis**
- C. Lower airway**
  - 1. Vascular anomalies**
  - 2. Congenital malformations**
  - 3. Bronchiolitis**
  - 4. Aspiration syndromes**
  - 5. Bronchiectasis**
  - 6. Tracheomalacia**
  - 7. Tracheitis**
  - 8. Hemosiderosis**
- D. Parenchymal**
  - 1. Pneumonias**
  - 2. Diaphragmatic hernia**
  - 3. Trauma**
  - 4. Drowning, near drowning, acute respiratory distress syndrome**
- E. Newborn infants**
  - 1. Bronchopulmonary dysplasia (chronic lung disease of infancy)**
  - 2. Other - not BPD**
- F. Asthma (see VIII.C)**
- G. Cystic fibrosis**
- H. Primary ciliary dyskinesia (dysmotile cilia syndrome)**
- I. Extrapulmonary**

1. **Pleural fluid**
2. **Pneumothorax, pneumomediastinum**
3. **Thoracic deformities**
- J. Pulmonary hypertension and cor pulmonale**
- K. Sleep disorders**
- L. Sudden infant death syndrome**
- M. Diagnostic testing**
  1. **Pulmonary function testing**
  2. **Oximetry**
  3. **Blood gas analysis**
  4. **Imaging**
- N. Environmental tobacco smoke exposure**
- XIV. Cardiovascular Disorders**
  - A. General aspects**
    1. **Blood pressure (see III.B.2)**
    2. **Chest pain**
    3. **Syncope**
    4. **Murmur**
  - B. Congestive heart failure**
    1. **Diagnosis**
    2. **Management**
  - C. Congenital heart disease**
    1. **General**
    2. **Cardiogenic shock**
    3. **Cyanotic disease**
      - a. **Diagnosis**



3. **Aplastic and hypoplastic erythrocyte disorders**
    - a. **Diamond-Blackfan syndrome**
    - b. **Transient erythroblastopenia of childhood**
  4. **Therapeutic approaches**
- C. Leukocyte disorders**
1. **Quantitative leukocyte disorders**
    - a. **Congenital and immune-mediated neutropenia**
    - b. **Acquired, nonimmune neutropenia**
      - (1). **Sepsis**
      - (2). **Drugs**
  2. **Qualitative leukocyte disorders**
  3. **Therapeutic approaches**
- D. Platelet disorders**
1. **Quantitative platelet disorders**
    - a. **Decreased platelet production**
    - b. **Increased platelet destruction**
      - (1). **Congenital**
      - (2). **Acquired**
  2. **Qualitative platelet disorders**
  3. **Therapeutic approaches**
- E. Pancytopenia**
1. **Decreased production**
    - a. **Congenital (Fanconi anemia)**
    - b. **Acquired aplastic anemia**
  2. **Increased destruction**
  3. **Therapeutic approaches**

**F. Coagulation disorders**

- 1. Congenital bleeding and thrombotic disorders**
- 2. Acquired bleeding and thrombotic disorders**
- 3. Therapeutic approaches**

**G. Neoplastic disorders**

- 1. Hematologic malignancies**
  - a. Leukemias**
  - b. Lymphomas**
- 2. Solid tumors**
  - a. Neuroblastoma**
  - b. Wilms tumor**
  - c. Brain tumors**
  - d. Bone and soft tissue tumors**
  - e. Histiocytosis syndromes of childhood**
  - f. Other tumors (eg, germ cell, liver, retinoblastoma)**
- 3. Oncologic emergencies**
  - a. Spinal cord compression**
  - b. Mediastinal mass**
  - c. Infection and sepsis**
- 4. Therapeutic considerations**

**XVI. Renal Disorders**

**A. General**

- 1. Normal function**
- 2. Proteinuria**
- 3. Hematuria**
  - a. Persistent microscopic hematuria**



- a. **Pyelonephritis**
    - b. **Cystitis**
  - 2. **Acute glomerulonephritis**
  - 3. **Nephrotic syndrome**
  - 4. **Hemolytic-uremic syndrome**
  - 5. **Henoch-Schoenlein purpura**
  - 6. **IgA nephropathy**
- D. **Other renal conditions**
  - 1. **Renal failure**
    - a. **Acute renal failure**
    - b. **Intrinsic renal failure**
  - 2. **Chronic kidney disease (chronic renal failure)**
  - 3. **End-stage kidney disease and transplantation**
  - 4. **Trauma**
    - a. **Renal injuries**
    - b. **Urethral injury**
  - 5. **Toxins**
  - 6. **Urinary tract stones**
  - 7. **Renal tubular acidosis**
- E. **Hereditary conditions with renal manifestations (eg, nephrogenic DI)**
- F. **Hypertension**
  - 1. **General**
  - 2. **Renal**
  - 3. **Vascular**
  - 4. **Adrenal**

- a. **Pheochromocytoma**
- b. **Cushing syndrome**
- 5. **Miscellaneous causes**
  - a. **Essential hypertension**
  - b. **Administration of drugs**

## **XVII. Genital System Disorders**

### **A. General**

- 1. **Pain**
  - a. **Infection**
  - b. **Trauma (accidental or self-induced)**
- 2. **Abnormal masses**
  - a. **Hydrocele, inguinal hernia**
  - b. **Bartholin gland cyst**
  - c. **Varicocele**
- 3. **Discharge**
  - a. **Vaginal**
  - b. **Urethral**
- 4. **Bleeding**
  - a. **Vaginal**
  - b. **Uterine**

### **B. Male**

- 1. **Congenital abnormalities**
  - a. **Hypospadias**
  - b. **Cryptorchidism**
  - c. **Micropenis**
  - d. **Phimosis**

2. **Acquired abnormalities**
  - a. **Testicular torsion**
  - b. **Infection**
    - (1). **Orchitis**
    - (2). **Epididymitis**
    - (3). **Urethritis**
  - c. **Trauma**
  - d. **Testicular masses**

**C. Female**

1. **Congenital abnormalities**
  - a. **Imperforate hymen**
  - b. **Labial adhesions**
2. **Acquired abnormalities**
  - a. **Ovarian torsion**
  - b. **Ovarian cyst**
  - c. **Vulvovaginitis**

**D. Dermatologic disorders**

1. **Contact dermatitis**
2. **Parasites**
3. **Warts**
4. **Herpes simplex (see also IX.H.3)**

**XVIII. Neurologic Disorders**

**A. Signs and symptoms of neurologic dysfunction**

1. **Headache**
  - a. **Differentiation**
  - b. **Evaluation**



- C. Degenerative conditions**
  - 1. Signs and symptoms**
  - 2. Diagnosis**
- D. Developmental malformation, static neurologic deficit**
  - 1. Malformations**
    - a. Spinal dysraphism**
    - b. Head size and shape**
  - 2. Cerebral palsy**
- E. Seizures**
  - 1. General**
    - a. Pathophysiology**
    - b. Diagnosis**
    - c. Treatment**
    - d. Management and monitoring**
  - 2. Neonatal**
  - 3. Febrile**
    - a. General**
    - b. Diagnosis**
    - c. Treatment**
  - 4. Infantile spasms**
    - a. Signs and symptoms**
    - b. Pathophysiology**
    - c. Treatment**
  - 5. Absence epilepsies (petit mal)**
  - 6. Complex partial seizures**
  - 7. Status epilepticus**

8. **Epilepsy syndromes**
9. **Tuberous sclerosis**
- F. Cerebrovascular disease**
  1. **Stroke**
    - a. **Signs and symptoms**
    - b. **Pathophysiology**
  2. **Vascular anomalies**
- G. Spinal cord disease**
  1. **Signs and symptoms**
  2. **Diagnosis**
- H. Peripheral nerve and nerve roots**
  1. **Guillain-Barre syndrome**
    - a. **Signs and symptoms**
    - b. **Diagnosis**
    - c. **Treatment**
  2. **Neuropathy**
  3. **Brachial plexus injuries at birth**
- I. Neuromuscular junction**
- J. Muscle diseases**
  1. **Signs and symptoms**
  2. **Pathophysiology**
  3. **Diagnosis**
- K. Central nervous system trauma**
  1. **Pathophysiology**
  2. **Management**
- L. Neurodiagnostic testing**

## **XIX. Musculoskeletal Disorders**

### **A. Congenital**

#### **1. General body**

- a. Osteogenesis imperfecta**
- b. Chondrodysplasias (see also VII.D.5)**
- c. Arthrogyrosis**

#### **2. Head and neck**

- a. Torticollis**
- b. Klippel-Feil syndrome**

#### **3. Trunk and spine (eg, tethered cord, occult spina bifida)**

#### **4. Lower extremities**

- a. Clubfoot**
- b. Metatarsus valgus, varus**
- c. Coxa valgus, vara**
- d. Plano valgus**
- e. Femoral anteversion, tibial torsion**
- f. Polydactyly**
- g. Leg length discrepancy**

### **B. Acquired**

#### **1. Infections**

- a. Osteomyelitis**
- b. Arthritis**
- c. Synovitis**

#### **2. Trauma**

- a. Dislocations (see also XXXI.D.5.)**
- b. Ligamentous (sprains, strains)**

c. **Bone (see also XXXI.D.5.)**

**3. Miscellaneous**

a. **Scoliosis**

b. **Kyphosis**

c. **Avascular necrosis (Legg-Calve-Perthes disease)**

d. **Apophysitis**

e. **Slipped capital femoral epiphysis**

f. **Myositis**

g. **Back pain**

h. **Developmental dysplasia, subluxation of the hips**

i. **Bone cysts**

**XX. Skin Disorders**

**A. Newborn skin**

**1. Pigmentary and vascular lesions**

**2. Pustular lesions**

a. **Erythema toxicum**

b. **Transient neonatal pustular melanosis**

c. **Neonatal impetigo**

**B. Atopic dermatitis**

**C. Infectious rashes and infestations**

**1. Bacterial infections**

a. **General**

b. **Impetigo**

c. **Staphylococcal scalded skin syndrome**

d. **Methicillin-resistant Staphylococcus aureus infection**

2. Papular urticaria
  3. Scabies
  4. Fungal infections
  5. Molluscum contagiosum
  6. Warts-condyloma acuminatum (see XVII.D.3)
  7. Pediculosis
  8. Cellulitis (see also XXII.A.3)
  9. Necrotizing fasciitis
- D. Hair loss**
1. Alopecia areata
  2. Trichotillomania
  3. Tinea capitis
  4. Telogen effluvium
- E. Neurocutaneous syndromes**
1. General
  2. Neurofibromatosis
  3. Tuberous sclerosis
  4. Sturge-Weber syndrome
- F. Pigmented lesions**
1. Hyperpigmentation
  2. Hypopigmentation
- G. Acne**
- H. Other**
1. Hemangiomas
    - a. Natural history
    - b. Therapeutic options

2. Erythema multiforme, Stevens-Johnson syndrome
3. Contact dermatitis
4. Short- and long-term effects of sun exposure
5. Ectodermal dysplasia
6. Sebaceous nevus
7. Dermoids
8. Ichthyosis
9. Psoriasis
10. Pityriasis rosea
11. Seborrheic dermatitis
12. Cutaneous manifestations - endocrine, metabolic, nutritional disorders

**XXI. Collagen Vascular and Other Multisystem Disorders**

**A. Systemic lupus erythematosus**

1. Clinical manifestations
  - a. Usual
  - b. Unusual
2. Laboratory evaluation
  - a. Antinuclear antibody testing
  - b. Anti-DNA determination
  - c. Complement concentrations
  - d. Hematologic evaluation
3. Course and complications
4. Therapy
5. Neonatal lupus syndrome

**B. Vasculitis syndromes**

- 1. Henoch-Schoenlein purpura**
  - a. Clinical manifestations**
  - b. Diagnosis**
- 2. Kawasaki disease (see also XIV.D.5.)**
  - a. Clinical manifestations**
  - b. Laboratory abnormalities**
  - c. Management**
- C. Juvenile rheumatoid (idiopathic) arthritis**
  - 1. Clinical presentations**
  - 2. Clinical course and prognosis**
    - a. Eye disease**
    - b. Cardiac disease**
  - 3. Differential diagnosis**
  - 4. Therapy**
    - a. Pharmacologic agents**
    - b. Other therapies**
- D. Other rheumatic disorders**
  - 1. Dermatomyositis**
    - a. Clinical presentation**
    - b. Diagnosis**
  - 2. Scleroderma**
  - 3. Sarcoidosis**
- E. Ankylosing spondylitis**
- F. Other arthritis and arthralgia syndromes**
  - 1. Arthritis of inflammatory bowel disease**
  - 2. Postinfectious arthritis**

3. **Reactive arthritis**
  4. **Hypermobility syndrome**
  5. **Functional joint complaints**
- G. Inherited disorders of connective tissues (see also VII.D.8)**
1. **Marfan syndrome**
  2. **Ehlers-Danlos syndrome**

## **XXII. Disorders of the Eye**

### **A. External disorders**

1. **Alignment and movement disorders**
  - a. **Strabismus**
  - b. **Nystagmus**
2. **Conjunctivitis**
3. **Orbital and periorbital (preseptal) cellulitis**
4. **Stye, chalazion**
5. **Nasolacrimal duct obstruction**
6. **Ptosis**

### **B. Internal disorders**

1. **Congenital glaucoma**
2. **The white pupil**
  - a. **Cataracts**
  - b. **Retinoblastoma**
3. **Papilledema, papillitis**
4. **Retinopathy of prematurity**

### **C. Miscellaneous**

1. **General**
2. **Amblyopia**

3. Foreign bodies, corneal abrasions
4. Trauma to the eye
5. Tumor or hemangioma affecting vision

### **XXIII. Ear, Nose, and Throat Disorders**

#### **A. Ears**

1. Congenital malformations
2. External ear
3. Middle ear
  - a. Acute otitis media
    - (1). Etiology, epidemiology
    - (2). Diagnosis
    - (3). Therapeutic options
  - b. Otitis media with effusion (secretory otitis media)
    - (1). Diagnosis
    - (2). Therapeutic options
    - (3). Complications
  - c. Chronic suppurative otitis media
  - d. Recurrent otitis media
  - e. Other (not otitis media)
  - f. Otorrhea
4. Inner ear
5. Hearing loss
  - a. Etiologies
  - b. Diagnostic techniques
  - c. Therapeutic options
6. Mastoiditis

**B. Nose and nasopharynx**

- 1. Choanal atresia**
- 2. Epistaxis**
- 3. Rhinitis**
  - a. General**
  - b. Allergic rhinitis (see also VIII.B.)**
  - c. Infectious rhinitis**
- 4. Polyps**
- 5. Common cold**
- 6. Trauma**
- 7. Foreign body**
- 8. Adenoids (see XXIII.G.1.)**

**C. Sinuses**

- 1. Acute sinusitis**
- 2. Chronic sinusitis**
- 3. Trauma**

**D. Throat**

- 1. Infections**
  - a. Viral (see also IX.H.)**
  - b. Bacterial**
    - (1). Peritonsillar abscess**
    - (2). Tonsillitis, pharyngitis**
    - (3). Retropharyngeal abscess**

**E. Mouth and oropharynx**

- 1. Tongue, oral cavity, uvula, salivary glands**
- 2. Cleft lip, cleft palate**

- 3. Teeth**
  - a. Normal development**
  - b. Trauma**
  - c. Cavities**
  - d. Infection**

**F. Neck**

- 1. Cervical adenitis**
- 2. Laryngitis, hoarseness**
- 3. Neck masses**

**G. Surgical intervention; chronic airway obstruction**

- 1. Tonsillectomy and adenoidectomy**
- 2. Myringotomy and tympanostomy tube placement**

**XXIV. Adolescent Medicine and Gynecology**

**A. Adolescent development**

- 1. Physiologic**
  - a. Pubertal staging (sexual maturity rating)**
    - (1). General**
    - (2). Male**
    - (3). Female**
  - b. Increase in height and weight with growth spurt**
  - c. Changing laboratory parameters**
  - d. Failures and variations in adult growth and development**  
**(see XI)**
- 2. Psychologic growth and development**
  - a. Development of a self-identity**
  - b. Psychologic separation from the family**

- c. **Relationship to the peer group**
  - d. **Consequences of the emergence of a poor self-image**
  - e. **Family influence**
  - f. **Media influence**
- 3. Sexuality**
- 4. Cognitive**
  - a. **Chronology of cognitive development**
  - b. **Consequences of concrete thinking for adolescent behavior**
  - c. **Implications of cognitive development re physician-pt communication**
- 5. Social development**
  - a. **General**
  - b. **Health related**
- B. Health issues of adolescence**
  - 1. Preventive healthcare**
  - 2. Gynecology**
    - a. **General**
    - b. **Vaginal discharge**
    - c. **Dysfunctional uterine bleeding**
    - d. **Amenorrhea**
    - e. **Dysmenorrhea**
  - 3. Pregnancy**
    - a. **Medical considerations**
    - b. **Emotional, social, economic issues**
    - c. **Prevention**
      - (1). Contraceptive technology**



1. **General**
    - a. **Bruises, hematomas**
    - b. **Heat illness**
    - c. **Return to play criteria**
    - d. **Overuse syndromes**
  2. **Head**
  3. **Eye and ear**
  4. **Mouth**
  5. **Neck**
  6. **Shoulder**
  7. **Elbow**
  8. **Wrist**
  9. **Knee**
  10. **Ankle**
- D. Nutritional requirements**
1. **Hydration and rehydration**
  2. **Weight gain and loss**
- E. Performance-enhancing drugs**
- F. Physical fitness**

## **XXVI. Substance Abuse**

- A. Epidemiology**
1. **Current data**
  2. **Developmental patterns**
- B. Risk factors**
1. **Genetic**
  2. **Familial**

3. **Peer group**
4. **School**
- C. **Laboratory evaluation**
  1. **Ethical and practical**
  2. **Applicability and limitations**
- D. **Role of primary care practitioner**
  1. **Evaluation by interview**
    - a. **Recognition of drug-related dysfunction**
    - b. **Obtaining a history**
    - c. **Collateral contacts**
  2. **Coordinating role**
  3. **Anticipatory guidance**
  4. **Office counseling**
  5. **Evaluating and preparing for referral**
  6. **Opportunities for community initiatives**
  7. **Referring for treatment**
- E. **Specific substances**
  1. **Overview**
  2. **Alcohol**
  3. **Marijuana**
  4. **Tobacco**
  5. **Opiates**
  6. **Amphetamines**
  7. **Hallucinogens**
  8. **Cocaine**
  9. **Inhalants**

10. **Anabolic steroids**
11. **Over-the-counter medicines**

## **XXVII. Disorders of Cognition, Language, and Learning**

- A. Developmental delay, intellectual disabilities**
  1. **Clinical features, presentation**
  2. **Etiologies (see also VII)**
  3. **Screening and diagnostic evaluation**
  4. **Therapeutic options**
- B. Autism spectrum disorder**
  1. **Clinical features, presentation**
  2. **Etiologies**
  3. **Screening and diagnostic evaluation**
  4. **Therapeutic options**
- C. Speech and language disorders**
  1. **Presentation**
  2. **Etiologies**
  3. **Screening and diagnostic evaluation**
  4. **Therapeutic options**
- D. Learning disorders**
  1. **Clinical features, presentation**
  2. **Etiologies**
  3. **Screening and diagnostic evaluation**
  4. **Therapeutic options**
  5. **Other factors influencing learning and performance**
    - a. **General**
    - b. **Temperament**

- c. **Family factors**
  - d. **Physical impairments and chronic illness**
  - e. **Medications**
  - f. **Emotional disturbances (eg, anxiety, depression)**
- E. Special sensory deficits**
  - 1. Hearing impairment**
    - a. **Clinical features, presentation**
    - b. **Etiologies**
    - c. **Screening and diagnostic evaluation**
    - d. **Therapeutic options**
  - 2. Visual impairment**
    - a. **Clinical features, presentation**
    - b. **Screening and diagnostic evaluation**
    - c. **Etiologies**
    - d. **Therapeutic options**
- F. Diagnostic evaluation and community-based treatment**
  - 1. Diagnostic assessment instruments**
    - a. **Cognition, intelligence, and adaptive behavior**
    - b. **Academic achievement**
  - 2. Educational and developmental programs**
  - 3. Behavioral interventions**
  - 4. Counseling**
  - 5. Use of community resources**
  - 6. Complementary and alternative therapies**

## **XXVIII. Behavioral and Mental Health Issues**

- A. Developmental stages**

- 1. Pregnancy, birth, first days after birth**
    - a. Prenatal care**
    - b. High-risk pregnancy**
    - c. Parent-infant attachment**
  - 2. Infancy**
    - a. Colic**
    - b. Feeding**
    - c. Rocking movements**
    - d. Temperament**
  - 3. Toddler and preschool**
    - a. Toilet training**
    - b. Habits**
      - (1). Thumb sucking**
      - (2). Masturbation**
    - c. Anticipatory guidance**
    - d. Temper tantrums, breath-holding**
    - e. Head banging**
  - 4. Middle childhood**
    - a. Fears and phobias**
    - b. Lying and stealing**
    - c. Anticipatory guidance**
  - 5. Adolescence**
    - a. Anticipatory guidance**
- B. Externalizing behaviors and conditions**
- 1. Aggressive behaviors (eg, aggression, ODD, CD, antisocial behaviors)**

- a. **Clinical features, presentation**
  - b. **Etiologies**
  - c. **Screening and diagnostic evaluation**
  - d. **Therapeutic options**
2. **Disruptive behaviors (eg, oppositionality, ODD, CD)**
    - a. **Clinical features, presentation**
    - b. **Etiologies**
    - c. **Screening and diagnostic evaluation**
    - d. **Therapeutic options**
  3. **Antisocial behaviors, delinquency**
    - a. **Clinical features, presentation**
    - b. **Etiologies**
    - c. **Screening and diagnostic evaluation**
    - d. **Therapeutic options**
- C. Internalizing behaviors and conditions**
1. **Anxiety**
    - a. **Clinical features, presentation**
    - b. **Etiologies**
    - c. **Screening and diagnostic evaluation**
    - d. **Therapeutic options**
  2. **Mood and affect disorders**
    - a. **Clinical features, presentation**
    - b. **Etiologies**
    - c. **Screening and diagnostic evaluation**
    - d. **Therapeutic options**
- D. Suicidal behavior**

- E. Psychotic behavior, thought disorders**
- F. Disorders of attention and impulse control**
  - 1. Clinical features, presentation**
  - 2. Etiologies**
  - 3. Screening and diagnostic evaluation**
  - 4. Therapeutic options**

**XXIX. Psychosocial Issues and Problems**

- A. Family and environmental issues**
  - 1. General issues**
  - 2. Critical life events**
    - a. Divorce**
    - b. Death**
    - c. Sudden infant death**
  - 3. Impact of mass media**
  - 4. Socioeconomic factors**
  - 5. Adoption**
  - 6. Foster care**
  - 7. Discipline**
  - 8. Cultural issues in medical care**
- B. Specific problems, conditions**
  - 1. Enuresis**
  - 2. Encopresis**
  - 3. Psychosomatic disorders**
  - 4. Sibling rivalry**
  - 5. Separation anxiety and school refusal**
  - 6. Sleep disorders**

7. **Vulnerable child syndrome**
  8. **Rumination and cyclical vomiting**
  9. **Pain**
  10. **Gifted child**
- C. Chronic illness and handicapping conditions**
- D. Violence**
1. **Family violence**
  2. **Societal violence**
- E. Abuse and neglect**
1. **Child abuse**
    - a. **Epidemiology**
    - b. **Etiology**
    - c. **Signs and symptoms**
      - (1). **Distribution of injuries**
      - (2). **Bruises**
      - (3). **Burns**
      - (4). **Ingestions**
      - (5). **Fractures**
      - (6). **Shaken infant syndrome**
    - d. **Treatment, legal issues**
  2. **Neglect**
  3. **Factitious disorder (Munchausen syndrome) by proxy**
  4. **Sexual abuse**
    - a. **Epidemiology**
    - b. **History**
    - c. **Physical examination**

- d. **Laboratory findings**
- e. **Forensic evidence**
- f. **Management**

**XXX. Critical Care**

**A. Recognition of impending systemic failure**

- 1. **General (vital sign changes)**
- 2. **Central nervous system**
- 3. **Respiratory**
- 4. **Cardiac**
- 5. **Renal**
- 6. **Hepatic**
- 7. **Electrolytes**
- 8. **Skin**

**B. Emergency life support**

- 1. **General**
- 2. **Airway and respiratory**
- 3. **Cardiac and circulatory (shock)**

**C. Common conditions requiring emergency life support**

- 1. **Airway, chest**
  - a. **Upper airway obstruction**
  - b. **Pneumonia, bronchiolitis**
  - c. **Burns**
  - d. **Near-drowning**
  - e. **Hemothorax, flail chest**
  - f. **Respiratory distress**
- 2. **Cardiac and circulatory**

### **3. Abdomen**

#### **XXXI. Emergency Care**

##### **A. Fever**

##### **B. Seizures**

##### **C. Wounds**

###### **1. General**

###### **2. Bites and stings (see also III.D.4.)**

###### **a. Rabies protocol**

###### **b. Dog, cat bite**

###### **c. Snake bite**

###### **d. Spider bite**

###### **e. Human bite**

###### **f. Insect sting**

##### **D. Trauma**

###### **1. Abdominal trauma**

###### **2. Multisystem trauma**

###### **3. Head injuries**

###### **4. Burns**

###### **5. Fractures, dislocations**

###### **a. Neurovascular states**

###### **b. Specific problems (eg, spiral fracture, "nursemaid's" elbow)**

#### **XXXII. Pharmacology**

##### **A. Pharmacodynamics**

###### **1. Absorption**

###### **2. Hepatic drug metabolism**

3. **Renal excretion**
  4. **Half-life**
  5. **Interpretation of drug concentration**
  6. **Adverse drug reactions**
  7. **Drug interactions**
- B. Specific drugs**
1. **Antibiotics**
  2. **Diuretics**
  3. **Corticosteroids**
  4. **Immunosuppressants**
  5. **Antihistamines**
  6. **Beta-blocking drugs**
  7. **Anti-inflammatory drugs**
  8. **H2-blocking drugs**
  9. **Beta-agonists**
- C. Pain management**
1. **Minimal sedation (anxiolytic)**
  2. **Moderate sedation**
  3. **Sedative analgesia (eg, opioids, nitrous oxide, ketamine)**
  4. **Non-pharmacologic techniques (eg, biofeedback, hypnosis, distraction)**

### **XXXIII. Research and Statistics**

- A. Study design**
- B. Data analysis**
- C. Reading and interpreting results**

## **XXXIV. Ethics for Primary Pediatricians**

### **A. Autonomy, beneficence, and rights**

#### **1. Critical care, end of life, and limitations on medical intervention**

- a. Decisions to withdraw/withhold life-sustaining medical intervention**
- b. Decisions to withdraw/withhold artificial hydration/nutrition**
- c. Cardiopulmonary resuscitation and "do not resuscitate" (DNR) orders**
- d. Futility**
- e. Persistent vegetative state**
- f. Palliative care and pain management**
- g. Physician-assisted suicide and euthanasia**

#### **2. Maternal/fetal conflicts**

#### **3. Patient-parent-pediatrician relationship**

- a. Obligations: veracity, fidelity, and confidentiality**
- b. Informed consent/dissent/assent**
- c. Minors as decision-makers**
- d. Advance care planning/directives**
- e. Religious (philosophical) exemptions**

### **B. Ethics and the use of technology**

#### **1. New technology**

- a. Genetics**
- b. Cochlear implants**
- c. Sex/gender assignment**

2. **Imperiled newborn infants**
    - a. **Delivery room resuscitation issues**
    - b. **In the neonatal intensive care unit**
  3. **Organ transplantation and donation**
  4. **Enhancement therapies**
    - a. **General considerations**
    - b. **Growth hormone**
    - c. **Performance enhancement**
- C. Allocation of health care resources**
1. **Just allocation of health care**
  2. **Managed care issues**
- D. Professionalism and institutional ethics**
1. **Cross-cultural issues**
  2. **Institutional ethics committees**
  3. **Professionalism**
    - a. **General issues**
    - b. **Gifts**
    - c. **Errors and malpractice**
    - d. **Conflicts of interest**
    - e. **Medical testimony and expert witness**
    - f. **Physicians who may present a risk to patients**
  4. **Research and children**
- E. Special medical circumstances**
1. **Brain death**
  2. **Care of patients with disabilities**

3. **Children with AIDS/HIV infection**
4. **Violence and child abuse**
  - a. **Intimate-partner violence**
  - b. **Violence in society**
  - c. **Child abuse**
5. **Complementary and alternative medicine**
6. **Children in foster care**
- F. **Education, training, and evaluation**
  1. **Curriculum resources**
  2. **Evaluation tools**

**XXXV. Patient Safety and Quality Improvement**

- A. **Definitions used in discussions of patient safety**
- B. **Epidemiology of medical error and harm**
- C. **Detecting and reporting adverse events**
- D. **Disclosure of medical errors**
- E. **Methods to reduce medical adverse events**
- F. **Principles of quality improvement applied to improving patient safety**
  1. **Key principles of patient safety**
  2. **Core principles of quality improvement**

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