3a. Pediatrics Curriculum

Pediatrics

Course title	Pediatrics
Course type	Core rotation
Duration	6 weeks
Major hospital sites	Rush Copley Medical Center, Aurora, IL Jackson Park Hospital, Chicago, IL Weiss Memorial Hospital, Chicago, IL Northwest Hospital, Randallstown, MD
Clinical chair	**Dr. Sergey Kunkov**

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CLINICAL CHAIR: DR. SERGEY KUNKOV

1. COURSE OVERVIEW:

COURSE	**Pediatrics Core Rotation**
LENGTH	6 weeks
SUPERVISING FACULTY	Dr. Sergey Kunkov, Chair of Pediatrics Dr. Richard Pestell, Dean of Clinical Sciences
MAJOR HOSPITAL SITES	Rush Copley Medical Center, Aurora, IL Jackson Park Hospital, Chicago, IL Weiss Memorial Hospital, Chicago, IL Northwest Hospital, Randallstown, MD
METHODS OF EVALUATION	Attendance Attitude, professional behavior, Patient evaluation, case presentation and summaries [written and oral] Knowledge of differential diagnosis, initial and ongoing therapies Technical skills, where required Oral and written quizzes NBME Clinical clerkship examination

	Mid-course [three week] formal feedback session [not part of final grade]
GRADING	75% - Preceptor Evaluation
	10% - Clinical Logs
	10% - Final Examination [NBME] 5% - Attendance
	Notes: A minimum passing grade on each area listed above is required to receive a final grade.
	No grade will be given until complete clinical logs and multimedia assignments have been completed and submitted
On-call	No more than two times per week

Note: See the XUSOM Academic Policies and Procedures Manual for students for information on overall academic and financial policies governing all rotations.

2. COURSE DESCRIPTION:

Pediatric ambulatory and in-patent services provide the Clinical Clerk with the opportunity to observe the more serious medical and surgical disorders of a patient beyond the newborn period. Admission histories and physical examinations teach the student how to approach the patient and family. The student must learn additional skills (to those learned in Medicine and Surgery) to interview parents and pediatric patients and to examine children from infancy through adolescence. The adequacy as well as accuracy of the students is checked by the resident physicians and preceptors. Fundamentals of pediatric management are learned from the resident staff. Attendance at lectures, seminars, and conferences expands the student's view of the sick and well children.

In the well child outpatient services, the student learns the milestones of growth and development, infant feeding, child nutrition, preventative pediatrics including immunization, and the common minor ailments of childhood. In the pediatric specialty clinics, the student observes the management and progression of a wide variety of serious and chronic illnesses.

Emergency department and urgent care experience permits the student to be the first to evaluate infants and children with previously undiagnosed acute illness, such as asthma exacerbation, otitis, pneumonia and similar problems.

The initial management of the newborn is learned in the delivery room. In the nurseries, the student practices the examination of the newborn and learns about the initiation of feeding, neonatal physiological changes, and minor difficulties. In the newborn intensive care unit, the student is an observer of the management of the premature and term infant with a serious or potentially serious aliment.

This course will be taught through a series of lectures, group discussions, observation, Grand Rounds, clinical/ hospital interaction, assignments, and case studies under the direction of the doctors and/or senior residents at the hospital, clinic, or private office. Students will further demonstrate knowledge of the core through completion of case studies and assignments as determined by the doctors and/or senior residents.

3. COURSE OBJECTIVES:

Upon successful completion of this course the student will be able to:

- Demonstrate competency in taking a history and performing a physical examination of infants, children and adolescents;
- Develop the skills needed to effectively communicate with children, adolescents and their families;
- Assess a child's overall condition with or without a medical complaint, including the importance of age, growth, development, major developmental milestones;
- Understand the importance of selection, use and interpretation of all historic, physical, laboratory and other test data for common pediatric conditions;
- Understand the importance of a professional and compassionate doctor/patient relationship and continue to develop the necessary skills to achieve this;
- Present an initial differential diagnosis from among the common pediatric diseases for pediatric patients, based on the information gathered;
- Develop an initial plan to advise and educate the patient and families about the disease process, diagnostic tests, initial therapy and expected outcome;
- Understand the influence of the family, community and society on the child, during both health and illness.

4. OBJECTIVES OF CLINICAL SKILLS TRAINING (MODIFIED AND ADOPTED FROM ASSOCIATION OF AMERICAN MEDICAL COLLEGE (AAMC) GUIDELINES FOR UNDERGRADUATE MEDICAL EDUCATION (UME):

1. The ability to understand the nature of, and demonstrate professional and ethical behavior in, the act of medical care. This includes respect, responsibility and accountability, excellence and scholarship, honor and integrity, altruism, leadership, cultural competency, caring and compassion, and confidentiality.
2. The ability to engage and communicate with a patient, develops a student-patient relationship, and communicate with others in the professional setting, using interpersonal skills to build relationships
3. For the purpose of information gathering, guidance, education, support and collaboration.
4. The ability to apply scientific knowledge and method to clinical problem solving.
5. The ability to take a clinical history, both focused and comprehensive.
6. The ability to perform a mental and physical examination;
7. The ability to select, justify and interpret selected clinical tests and imaging;
8. The ability to understand and perform a variety of basic clinical procedures;
9. The ability to record, present, research, critique and manage clinical information.
10. The ability to diagnose and explain clinical problems in terms of pathogenesis, to develop basic differential diagnosis, and to learn and demonstrate clinical reasoning and problem identification;
11. The ability to understand and select clinical interventions in the natural history of disease, including basic preventive, curative and palliative strategies
12. The ability to understand and to formulate a prognosis about the future events of an individual's health and illness based upon an understanding of the patient, the natural history of disease, and upon known intervention alternatives.

5. LINKAGE WITH THE EDUCATIONAL OBJECTIVES OF XUSOM:

XUSOM Educational objective	Course objectives	Learning methods	Assessment methods
The Science and Practice Of Medicine • Apply scientific principles and a multidisciplinary body of scientific knowledge to the diagnosis, management, and prevention of clinical, epidemiologic, social and behavioral problems in patient care and related disciplines. • Understand the variation in the expression of health and disease through critical evaluation of both patients and the scientific literature.	• Present an initial differential diagnosis from among the common pediatric diseases for pediatric patients, based on the information gathered;	Lectures Group discussions Observation	Preceptor Evaluation Log books Multimedia assignments

• Apply knowledge of study design and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness		Grand rounds Clinical/ hospital interaction, Assignments Case studies	On-call evaluation
Clinical Competence • Obtain a sufficient level of medical knowledge to understand the basic facts, concepts, and principles essential to competent medical practice. • Exhibit the highest level of effective and efficient performance in data gathering, organization, interpretation and clinical decision making in the prevention, diagnosis, and management of disease. • Communicate effectively using caring and respectful behaviors when interacting with patients, families and members of the health care team. • Perform all technical procedures accurately and completely, to the extent considered essential for the area of practice and level of education • Understand and appropriately use medically related information technology • Effectively use the resources of the entire health care team in treating disease, preventing future health problems and maintaining the health of individuals	• Demonstrate competency in taking a history and performing a physical examination of infants, children and adolescents; • Develop an initial plan to advise and educate the patient and families about the disease process, diagnostic tests, initial therapy and expected outcome;	Lectures Group discussions Observation Grand rounds Clinical/ hospital interaction, Assignments Case studies	Preceptor Evaluation Log books Multimedia assignments On-call evaluation
The Social Context Of Medicine • Understand and respond to factors that influence the social, behavioral, and economical factors in health, disease and medical care working to be able to provide care that is of optimal value. • Advocate for quality patient care and assist patients in dealing with system complexities • Begin to understand the complexities of the entire health care practice and delivery system, managers, payers, providers, organizations and bureaucracy in defining access, cost, value and outcomes	• Assess a child's overall condition with or without a medical complaint, including the importance of age, growth, development, major developmental milestones	Lectures Group discussions Observation Grand rounds Clinical/ hospital interaction, Assignments Case studies	Preceptor Evaluation Log books Multimedia assignments On-call evaluation
Communication • Demonstrate effective and compassionate interpersonal communication skills toward patients and families necessary to form and sustain effective medical care. • Present information and ideas in an organized and clear manner to educate or inform patients, families, colleagues and community. • Understand the complexity of communication including non-verbal, explanatory, questioning and writing in a culturally appropriate context	• Develop the skills needed to effectively communicate with children, adolescents and their families	Lectures Group discussions Observation Grand rounds Clinical/ hospital interaction, Assignments Case studies	Preceptor Evaluation Log books Multimedia assignments On-call evaluation
Professionalism • Display the personal attributes of compassion, honesty and integrity in relationship with patients, families, and the medical community.	• Understand the importance of a professional and compassionate doctor/patient	Lectures Group discussions	Preceptor Evaluation Log books

• Adhere to the highest ethical standards of judgment, conduct and accountability as each applies to the health care milieu. • Demonstrate a critical self-appraisal in his/her knowledge and practice of medicine, as well as received and give constructive appraisal to/from patients, families, colleagues and other healthcare professionals. • Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices • Demonstrate sensitivity and responsiveness to patients' culture, age, gender and disabilities	relationship and continue to develop the necessary skills to achieve this;	Observation Grand rounds Clinical/ hospital interaction, Assignments Case studies	Multimedia assignments On-call evaluation
Lifelong Learning • Understand the limits of personal knowledge and experience and demonstrate the intellectual curiosity to actively pursue the acquisition of new scientific and clinical knowledge and skills necessary to refine and improve his/her medical practice, assure excellent care of patients, or to contribute to the scientific body of medical knowledge throughout a career. • Understand the concepts of analyzing practice experience and perform practice-based improvement activities using a systematic methodology • Understand methods to obtain and use information about their own population of patients and the larger population from which their patients are drawn	• Understand the importance of selection, use and interpretation of all historic, physical, laboratory and other test data for common pediatric conditions • Understand the influence of the family, community and society on the child, during both health and illness.	Lectures Group discussions Observation Grand rounds Clinical/ hospital interaction, Assignments Case studies	Preceptor Evaluation Log books Multimedia assignments On-call evaluation

6. OVERALL CURRICULUM:

Note to the student:

- This is a suggested weekly curriculum undertaking a minimum of two modules or topics per week.
- By the end of the rotation, the student should have covered all topics listed.
- The individual preceptor, based on scheduling, patient population and other factors may alter the order of the topics or assignments.
- In addition, the student should complete all Skills Modules
- At the end of week 3, the student should request a **formal feedback session** from the preceptor on their progress.
- At the end of week 4, or beginning of week 5, the student should **ensure that Comprehensive Examination has been scheduled.**

Week 1:

- An introduction to Pediatrics. Infancy and Childhood. - Normal Infant and Childhood Growth and Development.
  - Child-Parent Interaction.
  - Well-child Care.
  - Physician-Child-Parent Communication.
- Immunizations - General Notes.
  - Hepatitis B.
  - Diphtheria-Tetanus-Pertussis.
  - Haemophilus influenzae Type B.
  - Polio.

- Measles-Mumps-Rubella
- Herpes.

Week 1 Assignments

Hay – Chapters 1, 2, 3, 9, 10, 15 OR
Nelson Essentials – Sections 1, 2, 11, 25
Taylor and Kelly's Dermatology of Skin of Color 2e, Chapter 84, Section1 Newborn conditions

Vanderbilt Internal Medicine and Pediatrics Curriculum, (go to Access Medicine, select the tab "cases", scroll down to Vanderbilt Internal Medicine and Pediatrics Curriculum)
Chapter"Dermatology" , section "Birthmarks in Infants" Cases 1-4,
Chapter" Health maintenance", section "Pediatric vaccinations" , all cases, section "Developmental milestones" all cases

Week 2:

- Congenital and Prenatal Infections.
  - TORCH Infections.
  - Congenital Toxoplasmosis.
  - Congenital Rubella.
  - Cytomegalovirus.
  - Neonatal Herpes Simplex Virus.
  - Neonatal Hepatitis B Infection.
  - Congenital Syphilis.
  - Congenital Varicella.
  - Neonatal Sepsis.
  - Infectious Mononucleosis.
  - HIV in Infants and Children.
- Neonatal jaundice.
- Substance-exposed Infants.
- Fetal Alcohol Syndrome.
- Narcotic Exposure.
- Cocaine Exposure.
- Approach to the child with a possible inherited disorder.
- Review of clinical genetics – chromosomal, point mutation and polygenic disorders.
- Childhood Trauma, Abuse and Neglect.

Week 2 Assignments

Hay - Chapters 12, 37, 39, 40, 41, 42, 43, 44 OR
Nelson, Essentials Sections 8, 9, 13, 16
Vanderbilt Internal Medicine and Pediatrics Curriculum, Chapter "Multisystem" , section "Evaluation of suspected abuse" Cases 1,2
Chapter "infectious disease", section "fever of unknown origin", Case 1, section" human immunodeficiency virus " case 2, section "preexposure prophylaxis for HIV" case 1
Chapter "Health maintenance", section "Care for patients with Down Syndrome (Trisomy 21)" Cases 1,2

Case Files: Pediatrics Child abuse

Graber and Wilbur's Family Medicine Examination and Board Review: Case 13.08(TORCH infections), 13.02 (neonatal hyperbilirubinemia), 13.05 (child abuse), 13.09(neonatal herpes)

Week 3:

- Gastroenterology. - Neonatal Diarrhea.
  - Tracheoesophageal Fistula.
  - Diaphragmatic Hernia.
  - Pyloric Stenosis.
  - Necrotizing Enterocolitis.
  - Meconium Ileus.
  - Hirschsprung's Disease.
  - Intussception.
  - Encopresis.
- Failure to Thrive,
- Nutrition, Fluid and Electrolyte management.
- Cardiovascular Disorders.
  - Atrial Septal Defect.
  - Ventricular Septal Defect.
  - Patent Ductus Arteriosus.
  - Transposition of the Great Vessels.
  - Tetralogy of Fallot.
  - Pulmonary Stenosis.
  - Atrioventricular Septal Defect.

Week 3 Assignments

Hay - Chapters 18, 20, 21, 22, 23 OR
Nelson, Essentials Sections 6, 7, 10, 17, 19

Vanderbilt Internal Medicine and Pediatrics Curriculum, Chapter"Gastroenterology" , section "Vomiting in children and adolescents" Cases 1-3, section Abdominal Pain in Children and Adolescents**.** Cases 1-3 Chapter "Multisystem" , section "Pediatric failure to thrive " Case 1

Case Files: Pathology. Ventricular septal defect

Graber and Wilbur's Family Medicine Examination and Board Review: Case 13.04 (intussusception), 13. 17 (gastroesophageal reflux, food allergy), 13.01 (encopresis), 13.03 (failure to thrive, fluids and electrolytes), 13.14 (pyloric stenosis)

In addition, student should have formal mid-clerkship feedback meeting with preceptor. 14

Week 4:

- Respiratory Disorders. - Meconium Aspiration Syndrome.
  - Transient Tachypnea of the Newborn.
  - Respiratory Distress Syndrome of the Newborn.
  - Neonatal Pneumonia.

    - Epiglottitis.
    - Laryngotracheitis.
    - Bronchiolitis.
    - Cystic Fibrosis.
- Approach to the Child with Allergy.
- Urology/Renal. - Circumcision.
    - Hypospadias.
    - Cryptorchidism.
    - Enuresis.
    - Ureteral Reflux.
    - Nephrotic syndrome.
    - Post-streptococcal glomerulonephritis.
    - Wilm's Tumor (Nephroblastoma)
        - Endocrinology
    - Congenital Hypothyroidism (Cretinism).
    - Juvenile Diabetes mellitus.
    - Adrenogenital and Related Syndromes.

Week 4 Assignments

Hay Chapters 18, 19, 24, 34, 35 OR
Nelson, Essentials Sections 14, 18, 22, 23

Vanderbilt Internal Medicine and Pediatrics Curriculum, Chapter" Pulmonary", section "Pneumonia in children" Case 1, section "Wheezing" cases 1, 3
Chapter "Allergy, immunology" section" food allergies", all cases, section "hypersensitivity reactions" cases 1, 3
Chapter "Urology", section "Hematuria", cases 2 and 3 , Section "Enurisis", cases1,2,
Chapter "Renal", section "Glomerulonephritis", cases 1 and 2, section "Hypernatremia" case 2, section "Hypocalcemia" case 2, section "proteinuria in children" case1
Chapter "Endocrine ", section "hypothyroidism "cases 1 and 2, section "hyperthyroidism "case1 , section "Type 1 diabetes" case1

Case Files: Pediatrics. Acute post streptococcal glomerulonephritis. Cystic fibrosis. Acute asthma exacerbation
Graber and Wilbur's Family Medicine Examination and Board Review: Case 13.18(RDS of the newborn), 13.06 (enuresis) 15

Week 5:

- Hematology - Hemolytic Disease of the Newborn (Erythroblastosis fetalis).
    - Anemias – Iron deficiency, G-6-PD deficiency, Sickle Cell Disease, Thalassemia.
- Hemophilia.
- Urinary Incontinence. Gynecologic Neoplasms. - Vulvar Neoplasms
    - Cervical Dysplasia
    - Cervical Cancer
    - Uterine Myoma
    - Endometrial Cancer
    - Ovarian Neoplasms

Week 5 Assignments

Hay Chapters 16, 18, 25, 30, 31 OR
Nelson, Essentials Sections 15, 20, 21, 24, 26

Vanderbilt Internal Medicine and Pediatrics Curriculum, Chapter" Hematology", section "anemia evaluation in children" Case 1, section "sickle cell disease" case 1, section "thrombocytopenia" case 1
Chapter" Gynecology", section "dysfunctional uterine bleeding" Case 2, section Polycystic Ovarian Syndrome, case 2
section "contraception" case 2

In addition, student should confirm scheduling of Comprehensive Examination, to be completed no later than one week following the end of clerkship. 16

Week 6:

- Psychiatric Disorders. - Mental Retardation.
  - Communication Disorders.
  - Learning Disorders.
  - Attention-deficit Hyperactivity Disorder.
  - Conduct Disorder.
  - Oppositional Defiant Disorder.
  - Tic Disorders.
  - Separation Anxiety Disorder.
  - Autistic Disorder.
- Adolescence. - Physical Changes of Puberty.
  - Sexuality in Adolescence.
  - Psychological Changes of Adolescence.
  - Physician-Patient Communication in Adolescence.

Week 6 Assignments

Hay Chapters 4, 5, 6, 7, 8 OR
Nelson, Essentials Sections 3, 4, 5, 12

Vanderbilt Internal Medicine and Pediatrics Curriculum, Chapter" Psychiatry", section "Depression in Children and Adolescents " Case 1, section "Eating disorders", all cases, section "Substance use disorders", case 1, section "attention deficit hyperactivity disorder", case 1, section "posttraumatic stress disorder", case 1,

Case Files: Pediatrics
Attention deficit hyperactivity disorder. Adolescent substance use disorder

PROCEDURES

- Students should observe and understand the following procedures - Administration of inhalation therapy
  - Infant and child blood draw
  - Nasopharyngeal swab for bacterial culture

    - Vision and hearing screening
- Students are expected to enter all patient and procedure data into the XUSOM Clinical Log System daily.
- Students are expected to be able to perform a complete newborn, infant, child and adolescent history and physical examination by the end of the rotation.

7. LEARNING RESOURCES:

REQUIRED READING

1. Current Diagnosis & Treatment: Pediatrics, 22e William W. Hay, Jr., MD, Myron J. Levin, MD, Robin R. Deterding, MD, Mark J. Abzug, MD**.** Available through AccessMedicine

Alternative required reading would be similar chapters in

2. NMS Pediatrics (National Medical Series for Independent Study) Fifth Edition Paul H. Dworkin, Paula Algranati MD

3. Nelson Essentials of Pediatrics: With STUDENT CONSULT Online Access, 7e 7th Edition Karen Marcdante MD, Robert M. Kliegman MD

SUPPLEMENTAL OR ALTERNATIVE READING

4. Introduction to Clinical Pediatrics - S.W.Smith, Saunders pub.

5. Core Textbook of Pediatrics - Kay Oskey and Barnes

6. Growth and Development - Watson and Lowrey

7. Essential Pediatrics – Symptoms and Disease in Children - RS Illingworth, Blackpoll Scientific

8. Nelson Textbook of Pediatrics - Berman, Vaughn and Saunders

9. The Harriet Lane Handbook: A Manual for Pediatric House Officers, 19th Edition (Paperback) Johns Hopkins Hospital, Kristin Arcara, Megan Tschudy MD, Mosby

10. Pediatric Pearls: The Handbook of Practical Pediatrics (Paperback) Beryl J. Rosenstein, Patricia D. Fosarelli, M. Douglas Baker, Mosby 4 edition

11. Pediatric Primary Care: Well-Child Care (Core Handbooks in Pediatrics) By: Raymond C., M.D. Baker (Editor), Lippincott Williams & Wilkins; Rev Ed edition

12. Pediatrics: A Primary Care Approach (Paperback), Carol D. Berkowitz, Amer Academy of Pediatrics; 3 edition

13. Zitelli and Davis' Atlas of Pediatric Physical Diagnosis: Expert Consult - Online and Print Basil J. Zitelli MD, Sara C McIntire MD Publisher: Saunders