

**THE UNIVERSITY OF JORDAN**  
**FACULTY OF MEDICINE**  
**DEPARTMENT OF PEDIATRIC MEDICINE**

**ROTATION OUTLINE**

<b>Classification:</b>	Medicine
<b>Course Code:</b>	0509501
<b>Course Title:</b>	Pediatrics-1
<b>Year Level :</b>	5 <sup>th</sup> . Year
<b>Round Schedule:</b>	Arranged by individual teachers
<b>Duration (Weeks):</b>	8 Weeks
<b>Tutorial schedule</b>	8am-4pm (sun-thurs)
<b>Credit Hours</b>	9
<b>Course Coordinator:</b>	Dr. Abeer Alassaf
<b>Prepared by:</b>	Dr. Amira Masri
<b>Date of Outline Preparation:</b>	19-05-2005
<b>Date of Last Revision:</b>	29-11-2012
<b>Checked by:</b>	Members of Department
<b>Approved by Head of Department:</b>	Dr. Amira Masri

# Instructions:

## Attendance and logbooks

- Daily attendance 8 am – 4 pm.
- 1- All students should be in the seventh floor by 9:15 am after finishing the 8 am seminar.
  - 2- If the student shows up late ,this will be counted as half day absence, if more than half an hour , will counted full day absene.
  - 3- A student should contact the consultant on the team or the senior resident if he/she is expected to come late or to be absent and explain the reason.
  - 4- All the cases the student take during the rotation should be written on the log book.
  - 5- The log book should be signed by the consultant, **day by day**, the resident signature won't count unless there is special circumstances and with special request. Signing the log book in retrograde is not allowed at any circumstance. If the consultant didn't sign the logbook at the same day for any reason or if you forgot to bring your logbook – which should **NOT** happen-, you should leave it blank and inform the teaching assistant who will gather the logbooks at the end of each month with the excuse, which may or may not be accepted and your evaluation may be penalized.
- **Note:**
- The students attendance/absence will be tracked daily by the staff, teaching assistant or the senior resident, and will be compared with the log book at the end of the month.
- 6- Each 2 weeks (or single rotation) should have only one paper from the log book.
  - 7- A student who fails to deliver the log book at the time and date which will be announced at the end of each month, the department won't evaluate that student unless the dean accept that.

## **Fifth Year Rotation: is 2 months.**

- One month: inpatient ward rotation at JUH according to the announced schedule.
- One month: At Queen Rania Children's Hospital/ KHMC
- Students will be assigned into groups for afternoon daily physical examination with the residents or the teaching assistant. Each student should hand over the physical examination evaluation form of the 4 major systems with the log book at the end of the JUH rotation.

- There will be daily seminars in JUH and KHMC rotations according to the provided schedules. The attendance will be tracked, and will be counted in the rotation's evaluation by the consultants.

### **Dress code:**

Please refer to the faculty of medicine dress code

General roles:

- 1- Blue jeans are forbidden.
- 2- Females should not be in above knee skirts, their accessories should be simple and the make up should be light one, there should not be any exaggeration in any of the mentioned above.
- 3- Students should not use perfumes as employee and patients might have allergies. please Help us to make our hospital scent free
- 4- The shoes should cover the toes
- 5- All students should take care of their hygiene

### **Interviewing the parents:**

- 6- when the student approach the family to take history , to do physical exam , or to follow a clinical condition , they should introduce themselves every time and ask for permission each time even if the family knows them from previous day or visits
- 7- the students should be considerate and try not to bother the kids or their parents if the kid is so sick and the parents are anxious may be you can postpone the interview or come back with the resident
- 8- the student can use a toy to facilitate the exam, but it should be a safe one, not easily breakable, doesn't have small pieces
- 9- Male students should have a female nurse /a female doctor or female colleague accompany them when interviewing a mother if she was in a room where no other parents present.

### **Relationship with consultants, residents, and the nursing staff:**

- 1- respect is the foundation of all relationships
- 2- the consultants are there to help you , teach you from their experience , be respecting and perform all assignments given to you
- 3- in order to get the most benefit of the clinical rounds, prepare your case and read about it

- 4- residents are much experienced than you, they are the best one to learn from, even by staying around and observing the way they work or think or do procedures
- 5- nursing staff are also a very helpful part of the medical team , things that you can not learn from doctors you can learn from them, you need to be patient as nurses are overwhelmed with job duties you can ask permission to watch intravenous lines insertion , NG tube insertion , etc

**What to do if you need help?**

- 1- If you have academic issues please come to us at the beginning of your rotation, we can certainly help you to improve your grades and performance
- 2- If you have social issues, in the family or with your colleagues we also can help you

**Important:**

Each student is responsible to check daily the announcements' board near the pediatric lectures room in the outpatient building, floor ( - 1 ), to check for the new announcements and updates.

# CURRICULUM

**FOR LIST OF TOPICS PLEASE REFERE TO APPENDIX (A) AT THE END OF THIS DOCUMENT**

## SKILLS

### ➤ **Conduct a Patient/Parent Interview**

- Obtain a history from a second party (parent), as well as directly from the patient
  - Understand the peculiarities of pediatric medical history and differences from the adult medical history
  - Use different styles of questioning - open ended, directed, follow-up and summary.
- Communicate information to parents/ patients.
  - Insure that both the child and the parent understand the diagnosis and treatment, and have an opportunity to ask questions.
  - Incorporate parent counseling and guidance (follow up visits, feeding, environment safety, developmental milestones, vaccination counseling, etc) as a part of medical care and discharge planning from both the pediatric ward and newborn nursery.
  - Direct an interview and exam for an acute specific complaint, or for a specific purpose (e.g., evaluation of heart disease, well baby visit, etc...)

### **II. Perform a physical exam**

- Adjust the approach to the exam using the patient's age.
  - Adjust the content, sequence and focus of exam based on the patient's age.
  - Assess the child's developmental level, modify the exam accordingly, and use strategies to improve rapport with the patient
- Demonstrate age specific exam skills for the:
  - \* Newborn:
    - assess the stability of vital functions, e.g. respirations, heart rate, temperature, feeding and bowel movements.
    - assess and interpret APGAR scores.
    - assess infant maturity ( Ballard score )
  - \* Toddler, pre-school child
    - Use techniques for building rapport with children who have stranger anxiety.
    - assess motor, language, and social development
  - \* Adolescent:

- assess and stage secondary sexual characteristic
- Measurement/Recording:
  - Measure height, weight, and head circumference
  - Plot and interpret data on growth chart
- Specify how specific parts of the physical exam change with the patient's age and differ from the adult, including:
  - Obtain vital signs i.e., heart rate, respiratory rate, blood pressure, and temperature. Specify how normal values change for different ages.
  - Elicit newborn reflexes and state when they disappear.
  - Examine the tympanic membranes of an infant and child and identify abnormal hearing.
  - Examine the eyes for strabismus and identify an abnormal light reflex
  - Palpate nodes and specify the area(s) they drain; identify nuchal rigidity.
  - Distinguish between inspiratory and expiratory obstruction.
  - Auscultate for murmurs and palpate femoral pulses.
  - Palpate the abdomen for:
    - liver
    - spleen
    - abdominal masses
  - assess for rebound tenderness
  - Perform a rectal exam when indicated
  - Examine hips in the newborn and the young infant. Identify arthritis and abnormal gait
  - Identify skin disorders:
    - jaundice
    - petechiae
    - urticaria
    - vesicles
    - vascular malformation

### **III. Written and verbal communication skills**

- Produce a written record of the history and physical examination.

The record must:

- Identify the chief complaint
- Chronologically organize the present illness.
- Specify the past history with specific emphasis on areas which are unique to pediatrics, to include:

\* neonatal history (birth weight, approximate gestational age, complications of pregnancy in mother, exposure to drugs, alcohol, medications, infections and complications of the newborn period such as prematurity, respiratory distress, jaundice, infections).

\* immunizations

\* development (6-7 milestones to ask about - social smile, roll over, sit alone, transfer object, stand alone, walk, say first words)

\* diet (breast fed, formula)

- Detail a review of systems

- Document the physical exam to include patient's appearance, vital signs, height, weight, head circumference, and percentiles.

- Complete a problem assessment:

- Define and assess each problem.

- Develop a plan to evaluate and treat each problem

Plan for work-up and treatment for each problem

- Give an oral presentation that includes the essential elements of the patient's history in a chronological sequence and a summary of the pertinent physical exam findings.

#### **IV. Problem solving skills**

- Identify the medical problems during the history and physical exam
- Recognize patterns of illness sharing a unified etiology (e.g. fever, vomiting, irritability or fever and refusal to walk or pallor and petechiae...)
- Develop a differential diagnosis for each problem or group of problems which seem to logically group together and describe how age affects the differential diagnosis
- Describe the usefulness of laboratory tests which may help to confirm or disprove the clinical hypothesis for the illness under consideration.
  - State how normal values change with age
  - Discuss cost versus usefulness, limitations. and costs of various studies
- Discuss the usefulness, limitations and costs of various studies
- Interpret basic studies such as the chest X-ray
- Discuss the role of consultants as adjuncts to patient management

#### **ATTITUDES**

**The student should possess specific attitudes desirable in a physician. Specifically, the student should acquire the following attitudes:**

- Caring and compassion
- Commitment to work and learning
- Ethical sensitivity
- Moral integrity
- Cultural sensitivity

- Enthusiasm for patient care
- Ability to work as a team member
- Communication skills
- Commitment to the principle of disease prevention
- Respect for patients, family members and other health care workers
- Respect for other's opinions

## **KNOWLEDGE**

**Throughout his/her learning, the student should acquire and use knowledge of the mechanisms and developmental variations in normal values, disease manifestations. By the end of the clerkship, the student should, at a minimum, be able to:**

### **I. Growth**

- Demonstrate ability to plot accurately height, weight, and head circumference measurements in a growth chart.
- Discuss the significance of growth percentiles, with particular attention to an appreciation of why growth is a good index of health.
- Discuss the adverse effects on growth in intrauterine factors, malnutrition, maternal deprivation and social/cultural factors.

### **II. Development**

- Describe the developmental changes that occur as the preterm baby matures.
- Identify and discuss major developmental milestones and developmental assessment.
- Discuss at least one developmental disorder.
- Discuss the concept of cognitive and emotional maturation.

### **III. Health Maintenance**

- Discuss the importance of "health maintenance" or well-child visits.
- State the recommended schedule for well-child visits for ages from birth to 18 years, and list ideas for anticipatory guidance for each age.
- List the routine schedule of childhood immunizations and which vaccines are given, their common side effects and contraindications to their administration.
- List when lead levels, blood pressure checks, vision testing and hematocrits are recommended.

### **IV. Nutrition**

- Describe the importance and benefits of breast feeding.
- Counsel and provide emotional support a breastfeeding mother.
- Describe what constitutes a normal diet at different age groups and list the caloric requirements for growth at different ages.
- Describe common nutritional disorders in the US including iron deficiency anemia and obesity.
- State common food formulas for infants and their use and limitations.
- Describe the causes of failure to thrive.

## V. Fluids and Electrolytes

- Recognize and clinically evaluate dehydration.
- Write maintenance fluid orders for any pediatric patient with normal renal function.
- Write fluid orders (both intravenous and oral) for uncomplicated gastroenteritis.
- Describe basic physiologic principles and apply them in the management of acute dehydration and acute metabolic acidosis.

## VI. Common Pediatric Illnesses

The following list identifies the problems that commonly prompt patients to seek medical care (i.e. presenting complaints or symptom complexes). Each complaint, diagnosis, physical finding/ laboratory test result (problem) is accompanied by a list of the most common related diagnoses as well as a list of less common but significant other diagnoses that may need to be considered. Although more rare conditions may occasionally need to be considered, they are not included in this core list.

<b>Common Complaint / Dx</b>	<b>Common Related Diagnoses</b>	<b>Significant Other Dx to Consider</b>
<b>Heart murmur</b>	innocent murmurs cardia septal defects	acute rheumatic fever coarctation of the aorta valvular stenosis
<b>Lymphademopathy</b>	infectious mononeucleosis bacterial adenitis viral infections	Kawasaki's disease lymphoma/leukemia HIV/AIDS cat scratch disease mycobacterial infections
<b>Splenomegaly</b>	systemic infectious disease mononeucleosis	tumors hemolytic anemias sickle cell disease
<b>Hepatomegaly</b>	Hepatitis	congestive heart failure cirrhosis
<b>Impaired vision</b>	strabismus/amblyopia myopia/hyperopia leucocoria	retinoblastoma cataracts
<b>Pallor/anemia</b>	iron deficiency anemia lead poisoning	hemolytic anemia - hereditary acquired malignancy sickle cell disease occult blood loss

<b>Bruising/petechiae</b>	Trauma Vasculitis	hemophilia/Von Willebrand's HS purpura leukemia secondary to infection
<b>Hematuria</b>	Trauma UTI	acute glomerulonephritis post streptococcal hemolytic uremic syndrome HS purpura Lupus
<b>Proteinuria</b>	orthostatic proteinuria	nephrotic syndrome glomerulonephritis lupus

<b>Common Related Diagnoses</b>	<b>Common Complaint / Dx</b>	<b>Significant Other Dx to Consider</b>
Pneumonia croup bronchiolitis bronchitis asthma sinusitis	<b>Cough</b>	cystic fibrosis pertussis tuberculosis foreign body aspiration GE reflux Chlamydia pneumonitis
occult bacteremia UTI, pyelonephritis viral exanthems varicella measles fifth disease roseola scarlet fever	<b>Fever</b>	Osteomyelitis meningitis febrile convulsions septic arthritis Kawasaki's disease JRA viral exanthem - rubella tuberculosis
pharyngitis, strep scarlet fever pharyngitis, other mononucleosis	<b>Sore throat</b>	rheumatic fever cervical adenitis pharyngeal and retropharyngeal abscesses recurrent tonsillitis
middle ear effusion recurrent otitis media otitis media otitis externa	<b>Otitis</b>	deafness speech and language delay mastoiditis
Conjunctivitis allergic rhinitis sinusitis	<b>URI</b>	periorbital/orbital cellulitis

<p>Appendicitis  UTI/pyelonephritis  gastroenteritis  constipation  PID  gastritis  colic</p>	<p><b>Abdominal pain</b></p>	<p>intussusception  vasculitis, e.g. HS purpura  pregnancy  encopresis  inflammatory bowel disease  ulcer  hepatitis  ovarian/testicular torsion  psychogenic abdominal pain  abdominal mass/malignancy  Wilm's tumor  neuroblastoma  lymphoma  hydronephrosis  incarcerated hernia</p>
<p>GE reflux  pyloric stenosis  gastroenteritis  2nd to infections -  strep pharyngitis</p>	<p><b>Vomiting</b></p>	<p>volvulus/bowel obstruction  diabetic ketoacidosis  increase intracranial pressure  hepatitis  pyelonephritis</p>
<p>Gastroenteritis  viral  bacterial  Giardia</p>	<p><b>Diarrhea +/- vomiting</b></p>	<p>failure to thrive  hemolytic uremic syndrome  dehydration</p>
<p>acute urticaria  atopic dermatitis  contact dermatitis  Monilia skin infections  scabies  impetigo/cellulitis  tinea infections</p>	<p><b>Skin problems</b></p>	<p>anaphylaxis  drug reaction rash  Stevens Johnson syndrome  seborrheic dermatitis</p>
<p>Cellulitis  animal wounds  trauma  burns  child abuse</p>	<p><b>Skin wounds</b></p>	<p>tetanus  rabies</p>
<p>ankle injury  knee injury  congenital hip dislocation  non-accidental trauma</p>	<p><b>Lower extremity problems</b></p>	<p>Osgood-Schlatter disease  Legg-Calvé-Perthes disease  slipped femoral capital epiphysis</p>
<p>Tendonitis  toxic synovitis  infectious -  septic arthritis  osteomyelitis  cellulitis</p>	<p><b>Limp/limb pain</b></p>	<p>Nurse's maid elbow  arthritis (JRA)  sickle cell crisis  rheumatic fever  leukemia/tumors</p>

Headaches migraine tension seizure disorders febrile convulsions	<b>CNS problems</b>	increased intracranial pressure
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## **VII. Physical Findings/Laboratory Findings**

The following section deals with the more common physical findings that merit further exploration. Sometimes the effort is to determine if a normal variant or minor vs. significant disease is occurring. The list is not exhaustive, but the primary emphasis is on diagnoses unique to pediatrics.

## **VIII. Other Pediatric Problems**

- Describe the indications for prophylaxis for bacterial endocarditis.
- Describe the presentation and principles of treatment of diabetes mellitus.
- Describe the content of the newborn disease screen and interpret screening results for hypothyroidism.
- Develop an organized approach to the dysmorphic child.
- Evaluate the child with hypertension.
- Describe disorders of altered tone and reflexes and recognize upper versus lower motor neuron disorders.
- Evaluate the child with recurrent infections.
- Recognize the different forms of shock and describe the principles of management.
- Recognize and evaluate respiratory failure in children.
- Describe normal growth patterns and recognize deviations from these patterns.

## **IX. Unique Issues of the Newborn**

- Assign APGAR scores.
- Recognize and assess respiratory distress in the newborn.
- Recognize and assess cyanosis in the newborn.
- Recognize and assess pallor in the newborn.
- Recognize the features of congenital infections.
- Recognize and assess shock in the newborn.

## **X. Unique Issues of Adolescents**

- Assess physical growth and development.
- Describe different stages of acne and approaches to its treatment.
- Screen adolescents for the presence of scoliosis.

- Give anticipatory guidance regarding adolescent pregnancy and its effects, birth control, sexually transmitted diseases, drugs, alcohol, accident prevention and firearms.

### **XI. Behavioral Problems**

- Interact with patients referred for behavioral/emotional problems including obtaining a non-judgmental history and beginning to develop a plan for further evaluation and treatment.
- Describe developmental patterns of child behavior, including colic, sleep patterns, stranger anxiety, toilet mastery.
- Describe the impact on the family when the child has an acute, chronic or potentially fatal illness.
- Evaluate the child's social competence in the family, in school, and with peers.
- Observe and record parent-infant and parent-child interactions

### **XII. Poisoning**

- Describe the extent and prevention of accidental poisoning in children less than 5 years of age.
- Describe the importance of anticipatory guidance in prevention.
- Obtain accurate history of poisonings while maintaining a non-judgmental approach.
- Identify common types of poisonings at various ages.
- Describe the general principles of management of ingested poisons.
- State the etiology, identification and management of the child with lead poisoning.

### **XIII. Accidents and Injuries**

- State the extent to which accidents are responsible for more than one half of all childhood deaths.
- Describe the role and value of anticipatory guidance in prevention of the majority of diseases.
- State age-specific measures for accident prevention.

### **XIV. Pediatric Therapeutics**

- Discuss dosing of medications in children based on differences in patient size and drug absorption, distribution, metabolism and excretion.
- Discuss why retin-A, tetracycline, the quinolones and chloramphenicol are not used in certain pediatric patients.
- Describe practical considerations related to drug administration and compliance in pediatrics.

### **XV. Child Abuse**

- List risk factors in the family and child that put a child at risk for abuse (non-accidental injury).
- Identify specific injuries or patterns of injury that should alert the physician to the possibility of child and/or sexual abuse.
- List the components of the work-up and immediate management of a child suspected of being abused.

### **XVI. Major Evaluation Dates**

Rotation Final Evaluation	Evaluation of both skills and theory (short cases)
End of Year Final Exam	Written (multiple choice questions)

# Appendix (A)

<b>List of Topics for 5<sup>th</sup> and 6<sup>th</sup> year students and their objectives</b>		
<b>No.</b>	<b>Topic</b>	<b>Objectives</b>
<b>Part I: General</b>		
1	Pediatric history and physical examination	<ol style="list-style-type: none"> <li>1. To determine the differences between normal adults history taking skills and that for the pediatrics.</li> <li>2. To be able to deal with pediatric patients.</li> <li>3. To be able to carry out physical examination for the pediatric patients.</li> <li>4. To be able to deal with pediatric patients having serious problems.</li> <li>5. To be able to analyze different complaints in a logical problem solving way.</li> </ol>
2	Growth and development	<ol style="list-style-type: none"> <li>1. Developmental milestones.</li> <li>2. Determining chronological age, developmental age, and their interpretations.</li> <li>3. Developmental delay ,causes, diagnoses ,management</li> <li>4. Growth charts analysis</li> <li>5. Correlating developmental delay problems to other important organic diseases.</li> </ol>
3	Short stature	<ol style="list-style-type: none"> <li>1. Definition of short stature in pediatrics.</li> <li>2. Short stature diagnoses using growth charts, causes.</li> <li>3. Causes of adrenal insufficiency in childhood.</li> <li>4. Correlating short stature to important organic.</li> <li>5. Treatment of curable forms of short stature.</li> </ol>
4	Fluids and electrolytes	<ol style="list-style-type: none"> <li>1. Review of body fluids distribution.</li> <li>2. Different types of fluids to be given, crystalloids vs. colloids.</li> <li>3. Approach to dehydrated pediatric patients.</li> <li>4. Problem solving to determine how much fluids exactly do dehydrated patients with different levels of dehydration need.</li> <li>5. To determine when to give which type of fluids.</li> </ol>
<b>Part II: Neonatology</b>		
5	Neonatal Examination	<ol style="list-style-type: none"> <li>1. How to examine primitive reflexes.</li> <li>2. Important skills in neonatal examination.</li> <li>3. Interpretation of abnormal findings like the absence of red reflex.</li> <li>4. Important investigations to be carried out for patients with abnormal physical examination.</li> </ol>
6	Prematurity	<ol style="list-style-type: none"> <li>1. Definition of prematurity</li> <li>2. Types, Causes, Diagnoses.</li> <li>3. Complications of prematurity and important interventional managements.</li> </ol>
7	Surgical problems in pediatrics	<ol style="list-style-type: none"> <li>1. Important life threatening diseases as Intussusception, congenital malformations,</li> </ol>

		<ol style="list-style-type: none"> <li>2. Which congenital malformations need urgent surgical management and why.</li> <li>3. Complications of different surgical procedures.</li> </ol>
8	Common neonatal problems	<ol style="list-style-type: none"> <li>1. Apgar score</li> <li>2. Meconium aspiration causes, clinical features, complications, and management.</li> <li>3. Respiratory distress syndrome.</li> <li>4. Erbs palsy and other neonatal traumas such as caput succedaneum.</li> </ol>
9	Asphyxia	<ol style="list-style-type: none"> <li>1. Definition of Asphyxia.</li> <li>2. Approach to Asphyxia, clinical manifestations, and diagnosis.</li> <li>3. Possible preventive measures for Asphyxia</li> <li>4. Complications of Asphyxia.</li> <li>5. Outline the stepwise approach to management of Neonates with low Apgar score</li> </ol>
10	Neonatal Seizures	<ol style="list-style-type: none"> <li>1. Review of the pathophysiology of seizures.</li> <li>2. List of causes for Neonatal seizures</li> <li>3. Complications</li> <li>4. Treatment and list of Medications to be given with their side effects.</li> </ol>
11	Breast Feeding	<ol style="list-style-type: none"> <li>1. Components of the Human milk</li> <li>2. Comparison between Human milk and Cow milk.</li> <li>3. Benefits of Human Milk.</li> <li>4. Review of Studies done to prove how beneficial Human milk is, and how does it prevents common morbidities as obesity and diabetes mellitus.</li> </ol>
12	Neonatal Jaundice	<ol style="list-style-type: none"> <li>1. Definition of Neonatal jaundice.</li> <li>2. Types of Neonatal jaundice, and how to distinguish between them.</li> <li>3. Features of physiological and pathological jaundice.</li> <li>4. Current treatment.</li> <li>5. Complications and prognosis.</li> </ol>
13	Shock in Newborn	<ol style="list-style-type: none"> <li>1. Approaching shock in Newborn according to international guidelines.</li> <li>2. Types of shock and their pathophysiology.</li> <li>3. Stepwise Management in shocked newborns and possible complications.</li> </ol>
14	Care of the newborn	<ol style="list-style-type: none"> <li>1. Head to toe examination during the first neonatal visit.</li> <li>2. Screening tests that should be done to all neonates.</li> </ol>
15	Failure to thrive	<ol style="list-style-type: none"> <li>1. Definition.</li> <li>2. Growth charts interpretation.</li> <li>3. Causes; physiological and pathological.</li> <li>4. Diagnostic work up.</li> <li>5. Management.</li> </ol>
16	Infants Formulas	<ol style="list-style-type: none"> <li>1. Different types of Formulas.</li> <li>2. When to give which type of Formula.</li> <li>3. The importance of Formulas in the management of important metabolic disorders as Galactosemia.</li> </ol>

17	Respiratory Distress Syndrome	<ol style="list-style-type: none"> <li>1. Definition.</li> <li>2. Causes of Respiratory Distress Disorder.</li> <li>3. Clinical features and investigations.</li> <li>4. Outline of management.</li> </ol>
18	Congenital Infections	<ol style="list-style-type: none"> <li>1. Epidemiology.</li> <li>2. Different congenital infections as TORCH infections.</li> <li>3. Diagnoses and complications.</li> <li>4. Management of congenital infections.</li> </ol>
19	Neonatal Sepsis	<ol style="list-style-type: none"> <li>1. Pathophysiology.</li> <li>2. Clinical picture.</li> <li>3. Stepwise Management.</li> </ol>
20	Management of patients at increased risk for sepsis	<ol style="list-style-type: none"> <li>1. List of diseases that could increase the risk of developing Neonatal sepsis.</li> <li>2. Management of patients at risk of developing neonatal sepsis.</li> </ol>
21	Newborn Resuscitation	<ol style="list-style-type: none"> <li>1. A stepwise algorithm for the Resuscitation of newborns.</li> <li>2. Important medications with the doses to be given during Resuscitation.</li> <li>3. Indications for Resuscitation.</li> </ol>
<b>Part III: Infectious Diseases</b>		
22	Pertussis, Diphtheria, and Tetanus	<ol style="list-style-type: none"> <li>1. Causative agent and pathophysiology.</li> <li>2. Epidemiology.</li> <li>3. Clinical manifestations and laboratory work up.</li> <li>4. Complications.</li> <li>5. Treatment and Prevention.</li> </ol>
23	Common Childhood Exanthems (Measles, Rubella, Varicella-Zoster, Erythema Infectiosum, Roseola infantum, Scarlet Fever)	<ol style="list-style-type: none"> <li>1. The Causative agent and spread out of each disease.</li> <li>2. Clinical features.</li> <li>3. Diagnosis and Investigations.</li> <li>4. Complications.</li> <li>5. Management and follow up.</li> </ol>
24	Acute Bacterial Meningitis	<ol style="list-style-type: none"> <li>1. Causative agents and pathophysiology.</li> <li>2. Clinical manifestations and physical examination according to different age groups.</li> <li>3. Diagnosis and laboratory work up and imaging studies.</li> <li>4. The importance of Lumber puncture and its indications.</li> <li>5. Complications and Prognosis.</li> <li>6. Treatment and follow up.</li> </ol>
25	Viral Meningoencephalitis	<ol style="list-style-type: none"> <li>1. Definition, Etiology and Epidemiology.</li> <li>2. Clinical manifestations and physical examination.</li> <li>3. Diagnosis and laboratory work up and imaging studies.</li> <li>4. Treatment and follow up.</li> </ol>
26	Vaccinations	<ol style="list-style-type: none"> <li>1. Types of immunization (active vs. passive).</li> <li>2. Knowing the types of antigens in general.</li> <li>3. Knowing the types of vaccines used in Jordan and in other countries and Routine and non-routine vaccines.</li> <li>4. Characteristics of each vaccine from Safety, Protections, Side effects, contraindications, cost, Administration and Timing.</li> </ol>
27	Gastroenteritis	<ol style="list-style-type: none"> <li>1. Definition and causative agents of Diarrhea.</li> </ol>

		<ol style="list-style-type: none"> <li>2. Mechanism of diarrhea.</li> <li>3. Classifications of diarrhea (infections vs. noninfectious).</li> <li>4. Clinical manifestations and physical examination.</li> <li>5. The importance of Signs and Symptoms of Dehydration and Rehydration therapy.</li> <li>6. Management with different Medications (Antimicrobial, Antiemetic, and Anti-diarrheal agents)</li> </ol>
28	Pneumonia and other Respiratory Tract Infections	<ol style="list-style-type: none"> <li>1. Epidemiology according to age.</li> <li>2. Clinical assessment and differentiating features between viral and bacterial pneumonia.</li> <li>3. Antibiotic treatment.</li> <li>4. Treatment and prevention.</li> <li>5. Etiology, clinical picture, management of: Croup, bacterial Tracheitis and Epiglottitis.</li> </ol>
29	Tuberculosis	<ol style="list-style-type: none"> <li>1. Epidemiology of childhood TB.</li> <li>2. Risk factors of reactivation.</li> <li>3. Clinical features of primary TB, TB after primary; both pulmonary and extrapulmonary.</li> <li>4. Diagnosing TB infection.</li> <li>5. Antituberculosis drugs and treatment.</li> </ol>
<b>Part IV: Gastroenterology</b>		
30	GI functions and Malabsorption	<ol style="list-style-type: none"> <li>1. Review of process of digestion through GI tract.</li> <li>2. Clinical features, laboratory test, and causes of fat, protein and carbohydrate Malabsorption.</li> <li>3. Celiac Disease: Different presentations, appropriate investigations and treatment.</li> <li>4. Cow milk protein intolerance: Different presentations, diagnosis and treatment.</li> </ol>
31	Metabolic Disorders	<ol style="list-style-type: none"> <li>1. Glycogen storage diseases: Listing major types, typical symptomatology and diagnosis.</li> <li>2. Galactosemia: symptomatology and complications, diagnosis and treatment.</li> <li>3. Amino acid disorders: Major types and their pathophysiology and treatment.</li> </ol>
32	Cholestasis	<ol style="list-style-type: none"> <li>1. Differential diagnosis of cholestatic jaundice.</li> <li>2. Laboratory and imaging evaluation.</li> <li>3. Biliary Atresia: pathophysiology, diagnosis, and management.</li> </ol>
<b>Part V: Hematology, Oncology and Genetics</b>		
33	Anemia	<ol style="list-style-type: none"> <li>1. Classifying anemias.</li> <li>2. Historical clues and physical findings in the evaluation of anemia.</li> <li>3. Iron Deficiency Anemia: Epidemiology, clinical features, typical laboratory findings, and treatment.</li> <li>4. Alpha- and Beta-Thalassemia.</li> <li>5. Discussion of other types.</li> </ol>
34	Pediatric tumors	<ol style="list-style-type: none"> <li>1. CNS tumors.</li> <li>2. Neuroblastoma.</li> <li>3. Nephroblastoma.</li> </ol>

		<ol style="list-style-type: none"> <li>4. Leukemia.</li> <li>5. Lymphoma.</li> <li>6. Retinoblastoma.</li> </ol>
35	Down Syndrome	<ol style="list-style-type: none"> <li>1. Typical clinical features.</li> <li>2. Investigations.</li> <li>3. Comorbidities.</li> </ol>
36	Idiopathic Thrombocytopenic Purpura (ITP)	<ol style="list-style-type: none"> <li>1. Epidemiology of ITP.</li> <li>2. Typical clinical features.</li> <li>3. Treatment: General measures, medical and surgical.</li> <li>4. Prognosis.</li> </ol>
<b>Part VI: Endocrinology</b>		
37	Congenital Hypothyroidism	<ol style="list-style-type: none"> <li>1. Revision of thyroid gland physiology and embryology.</li> <li>2. Different etiologies of congenital hypothyroidism.</li> <li>3. Clinical manifestations.</li> <li>4. Screening and laboratory work up.</li> <li>5. Treatment and prognosis.</li> </ol>
38	Diabetes Mellitus	<ol style="list-style-type: none"> <li>1. Criteria to define DM.</li> <li>2. Classification of DM in childhood.</li> <li>3. Diabetic Ketacidosis; pathophysiology and management.</li> <li>4. Hypoglycemia and morning hyperglycemia.</li> <li>5. Outpatient management and follow up.</li> </ol>
39	Adrenal Gland Dysfunction	<ol style="list-style-type: none"> <li>1. Revision of enzymatic pathways of adrenal hormones synthesis.</li> <li>2. Clinical manifestations of adrenal insufficiency.</li> <li>3. Causes of adrenal insufficiency in childhood.</li> <li>4. Basic management.</li> <li>5. Review of Addison Disease and Cushing Syndrome.</li> </ol>
40	Disorders of Sexual Differentiation	<ol style="list-style-type: none"> <li>1. Review of normal sexual development.</li> <li>2. Tanner staging of sexual maturation.</li> <li>3. Approach to Ambiguous genitalia.</li> <li>4. Male and female pseudohermaphroditism.</li> </ol>
<b>Part VII: Immunology</b>		
41	Approach to patient with recurrent infections	<ol style="list-style-type: none"> <li>1. Non immunogenic causes of recurrent infections.</li> <li>2. When to think of immunodeficiency.</li> <li>3. Causes of secondary immunodeficiency.</li> <li>4. Evaluation of patient with recurrent infections.</li> </ol>
42	Immunodeficiency Disorders - 1	<ol style="list-style-type: none"> <li>1. Characteristics of various categories of Immunodeficiency Disorders.</li> <li>2. Sensitive and specific tests for these categories.</li> <li>3. Review of Combined Immunodeficiency Disorders.</li> </ol>
43	Immunodeficiency Disorders - 2	<ol style="list-style-type: none"> <li>1. Review of B-cell Immunodeficiency Disorders.</li> <li>2. Review of Phagocytic defects.</li> <li>3. Review of Complement defects.</li> </ol>
44	Allergic Rhinitis	<ol style="list-style-type: none"> <li>1. Epidemiology of Allergic Rhinoconjunctivitis.</li> <li>2. Typical symptoms and signs.</li> <li>3. Differential diagnosis.</li> <li>4. Treatment: General measures, pharmacologic and immunotherapy.</li> </ol>
<b>Part VIII: Respiratory System</b>		

45	Childhood Asthma	<ol style="list-style-type: none"> <li>1. Epidemiology of bronchial asthma in pediatric patients.</li> <li>2. List triggering and risk factors of asthma.</li> <li>3. Describe clinical features of asthma with emphasis on indicators of severity.</li> <li>4. Define the investigations used to diagnose asthma.</li> <li>5. Outline the stepwise approach to management of asthma based on international guidelines.</li> </ol>
46	Cystic Fibrosis	<ol style="list-style-type: none"> <li>1. Etiology and epidemiology.</li> <li>2. Clinical manifestation; respiratory, gastrointestinal and others, as well as complications.</li> <li>3. Diagnostic and screening tests.</li> <li>4. Treatment and prognosis.</li> </ol>
47	Bronchiolitis	<ol style="list-style-type: none"> <li>1. Causative agents and Epidemiology among pediatric patients.</li> <li>2. Typical signs, symptoms and laboratory findings.</li> <li>3. Treatment for hospitalized patients and outpatients.</li> <li>4. Prevention through active and passive immunity.</li> </ol>
<b>Part IX: Rheumatology</b>		
48	Familial Mediterranean Fever (FMF)	<ol style="list-style-type: none"> <li>1. Epidemiology and Genetic etiology.</li> <li>2. Clinical manifestations.</li> <li>3. Current treatment.</li> <li>4. Complications and prognosis.</li> </ol>
49	Juvenile Rheumatoid Arthritis (JRA)	<ol style="list-style-type: none"> <li>1. Criteria for diagnosis.</li> <li>2. Categories of disease according to type of onset: Pauciarticular, Polyarticular and systemic onset (Still's disease).</li> <li>3. Typical laboratory findings.</li> <li>4. Modalities of treatment.</li> </ol>
50	Systemic Lupus Erythematosus (SLE)	<ol style="list-style-type: none"> <li>1. Autoimmune basis for etiology.</li> <li>2. Affection of various body systems, demonstrating various signs and symptoms.</li> <li>3. Criteria for diagnosis.</li> <li>4. Treatment.</li> </ol>
<b>Part X: Cardiology</b>		
51	Kawasaki Disease (KD) and Rheumatic Fever (RF)	<ol style="list-style-type: none"> <li>1. Definition and Criteria of diagnosis of KD.</li> <li>2. Management and follow up of KD patients.</li> <li>3. Etiology of RF.</li> <li>4. Jones criteria to diagnose RF.</li> <li>5. Treatment, follow up and prevention of RF.</li> </ol>
52	Infective Endocarditis (IE)	<ol style="list-style-type: none"> <li>1. Definition IE according to Duke's criteria.</li> <li>2. Causative agents and risk factors for IE.</li> <li>3. Clinical picture.</li> <li>4. Treatment; medical and surgical.</li> </ol>
53	Heart Failure in Children	<ol style="list-style-type: none"> <li>1. Basic mechanisms of heart failure.</li> <li>2. Causes of heart failure in children.</li> <li>3. Clinical features and investigations.</li> <li>4. Outline of management.</li> </ol>
54	Left-to-right Congenital Heart Diseases	<ol style="list-style-type: none"> <li>1. Concept of shunting of blood.</li> <li>2. Hemodynamics, presentation, diagnosis and basic management for: ASD, VSD &amp; Patent Ductus Arteriosus.</li> </ol>

55	Right-to-left Congenital Heart Diseases	<ol style="list-style-type: none"> <li>1. General causes of cyanosis in pediatric patients.</li> <li>2. Hemodynamics, presentation, diagnosis and basic management for: Tetralogy of Fallot, Transposition of great arteries &amp; tricuspid atresia.</li> </ol>
56	Other Congenital Heart Diseases	<ol style="list-style-type: none"> <li>1. Hemodynamics, presentation, diagnosis and basic management for: Aortic stenosis, Mitral regurgitation, Coarctation of aorta, Ebstein anomaly and Total Anomalous Pulmonary Venous Return.</li> </ol>
57	Pediatric Arrhythmias	<ol style="list-style-type: none"> <li>1. Discussion about irregular rhythms: Artifacts, Premature atrial, junctional and ventricular contractions.</li> <li>2. Slow rhythms: Sinus bradycardia, 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> degree heart blocks.</li> <li>2. Fast rhythms: Ventricular and supraventricular (Re-entry &amp; Non re-entry).</li> </ol>
<b>Part XI: Nephrology</b>		
58	Acute Renal Failure (ARF)	<ol style="list-style-type: none"> <li>1. Pathogenesis of different mechanisms of ARF.</li> <li>2. Review of different causes of ARF.</li> <li>3. Distinguishing between pre-renal, renal and post-renal causes from clinical features and laboratory investigations.</li> <li>4. Treatment: Medical management and dialysis.</li> </ol>
59	Chronic Kidney Disease	<ol style="list-style-type: none"> <li>1. Etiology: Congenital and acquired.</li> <li>2. Pathophysiology.</li> <li>3. Long term clinical manifestations.</li> <li>4. Stages of CKD.</li> <li>5. Management of various aspects, including indications and types of renal dialysis.</li> </ol>
60	Nephrotic Syndrome and proteinuria	<ol style="list-style-type: none"> <li>1. Differential diagnosis of childhood proteinuria.</li> <li>2. Clinical picture of Nephrotic syndrome.</li> <li>3. Description of major causes: Minimal Change Disease, Focal segmental glomerulosclerosis, Membranous nephropathy and Congenital nephrotic syndrome.</li> <li>4. Diagnostic workup for proteinuria.</li> </ol>
61	Glomerulonephritis (GN) and Hematuria	<ol style="list-style-type: none"> <li>1. Presentation of Glomerular diseases.</li> <li>2. Differential diagnosis of Hematuria.</li> <li>3. Pathogenesis, clinical and laboratory findings of: Acute Postinfectious GN, IgA nephropathy, Henoch–Schönlein Purpura, Alport Syndrome and Thin basement membrane nephropathy.</li> </ol>
62	Urinary Tract Infection (UTI) and Reflux	<ol style="list-style-type: none"> <li>1. Epidemiology and gender difference in incidence.</li> <li>2. Pathogenesis and risk factors.</li> <li>3. Symptoms and signs according to age.</li> <li>4. Suitable laboratory findings.</li> <li>5. Indications for imaging</li> <li>6. Treatment and prophylaxis.</li> </ol>
63	Renal Tubular Disorders	<ol style="list-style-type: none"> <li>1. Overview of proximal and distal tubular disorders.</li> <li>2. Characteristics of Fanconi syndrome, Proximal RTA, Distal RTA, Type IV RTA and Hypokalemic metabolic alkalosis.</li> </ol>
64	Hemolytic-uremic Syndrome (HUS)	<ol style="list-style-type: none"> <li>1. Etiology: <i>E.coli</i> O157:H7</li> <li>2. Clinical manifestations and development of symptoms over</li> </ol>

		time. 3. Complications. 4. Treatment, with emphasis on meticulous fluid management. 5. Course and prognosis.
65	Childhood Hypertension (HTN)	1. Stages of HTN in children and adolescents. 2. Clinical evaluation: History, Physical exam, and investigations. 3. Listing of Causes. 4. Treatment options.
66	Henoch–Schönlein Purpura (HPS)	1. Pathogenesis. 2. Clinical findings and involvement of several systems. 3. Differential diagnosis. 4. Treatment and prognosis.
<b>Part XII: Neurology</b>		
67	Neurological History and Examination	1. Peculiarities of neurological history and differentiation between static and progressive diseases. 2. Systematic neurological physical examination.
68	Headache	1. Classification of headache according etiology as well as to onset and progression. 2. Pathophysiology, clinical features, labs and management of Migraine, Tension headache and pseudotumor cerebri.
69	Attention deficit hyperactivity disorder (ADHD)	1. Primary symptoms and criteria of ADHD. 2. Theories behind the etiology. 3. Clinical presentation at different ages. 4. Treatment and prognosis.
70	Pervasive Developmental Disorders	1. DSM-IV list of pervasive disorders. 2. Epidemiology and pathophysiology of Autism. 3. Clinical picture and criteria of diagnosis. 4. Treatment and prognosis.
71	Lower Motor Neuron Disorders	1. Recognition of general clinical picture and lab test of lower motor neuron disorders. 2. Emphasis on Dytrophinopathies, Myasthenia Gravis, guillain-barré syndrome and spinal muscular atrophy.
72	Floppy Infant	1. Differentiation between central and peripheral causes. 2. List central, peripheral, and mixed hypotonia causes.
73	Neurodegenerative Disorders	1. List of possible pathophysiological mechanisms. 2. Approach to the patient: Clinical, anatomical, and chemical. 3. General idea about the treatment.
74	Cerebral Palsy (CP)	1. Definition and major types of CP. 2. Associated comorbidities. 3. Clinical features. 4. Management and prognosis.
75	Epilepsy	1. Listing of major childhood and adolescent epileptic disorders. 2. Importance history and physical examination. 3. Appropriate investigations for patients with seizures. 4. Treatment.
76	Febrile Seizures	1. Definition of febrile seizure.

		2. Prognosis. 3. Management and prevention.
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