I. Rotation Description

Pediatrics is the medical specialty focused on the health and care of children from infancy to adolescence. Pediatrics embraces preventive health including careful observation of the growth and development of a child, anticipatory guidance about safety specific to each age, and acute and chronic care for neonates, infants, children, and adolescents in all areas of medical specialties. Pediatricians are passionate advocates for their patients and are intimately involved in the care of the entire family by facilitating and coordinating services for the child. Pediatricians are a diverse group of physicians working in a variety of practice settings, medical subspecialties, and geographical regions. The practice of pediatric medicine occurs in the outpatient office setting, in the inpatient setting caring for both acute and chronic illnesses, in the delivery room, and newborn nursery caring for neonates in the first days of life and in the emergency room. Students should review their specific site instructions for a more detailed description of their specific practice setting and be prepared to have a schedule that may include overnight call, early mornings, late evenings, and some weekend responsibilities.

The Department of Pediatrics wishes to provide an exciting unique experience for the clinical student while developing competent and compassionate student physicians capable of caring for this extraordinary group of patients.

During the third year pediatrics rotation, students expand their knowledge of Pediatric Medicine and gain the ability to apply this knowledge in the clinical setting. The curriculum is taught through VCOM TV online lectures, on-line case modules (CLIPP cases) and through one-on-one student-preceptor experience in
caring for patients in the clinical setting. Students are expected to complete their assignments for both pediatric medicine and the longitudinal OMM course.

II. Course Goals and Objectives

A. Goals of the Course

1. Demonstrate an ability to provide age-appropriate anticipatory guidance about nutrition, behavior, immunizations, injury prevention, pubertal development, sexuality and substance use and abuse.
2. Learn to measure and assess growth including height/length, weight, head circumference and body mass index using standard growth charts in the context of well child examination or a child with a known disorder.
3. Demonstrate ability to assess psychosocial, language, physical maturation, and motor development in pediatric patients.
4. Be able to provide nutrition advice to families with neonates, infants, toddlers, school age children and adolescents.
5. Interview and conduct a physical exam on an adolescent demonstrating respect for privacy, asking sensitive questions about lifestyle choices and giving appropriate counseling.
6. Perform a complete physical examination of the newborn infant.
7. Become familiar with both common genetic and non-genetic congenital disorders and genetic disorders presenting later in childhood.
8. Learn to consider the age, physical growth, developmental stage and family environment when assessing a pediatric patient with an acute illness and constructing a differential diagnosis and therapeutic plan for each problem identified.
9. Understand the long term medical needs, implications and complications of a pediatric patient with a chronic illness or disability.
10. Demonstrate skills necessary to calculate a drug dose, write a medication prescription, and calculate intravenous fluid requirements for a pediatric patient.

B. Clinical Performance Objectives

While the end-of-rotation exam is derived from the didactic curriculum and objectives described above in the “Clinical Modules – Required Curriculum” section, the end-of-rotation evaluation completed by your pediatrics preceptor is based on clinical core competencies. These core competencies reflect student performance in 6 key areas: communication, problem solving, clinical skills, medical knowledge, osteopathic medicine and professional and ethical considerations. Your end-of-rotation evaluation from your preceptor will be based directly on your performance in these 6 core competencies as described below.

1. **Communication** - the student should demonstrate the following clinical communication skills:
   a. Effective listening to patient, family, peers, and healthcare team
   b. Demonstrates compassion and respect in patient communications
   c. Effective investigation of chief complaint, medical and psychosocial history specific to the rotation
   d. Considers whole patient: social, spiritual & cultural concerns
   e. Efficiently prioritizes essential from non-essential information
   f. Assures patient understands instructions, consents & medications
   g. Presents cases in an accurate, concise, well organized manner

2. **Problem Solving** – the student should demonstrate the following problem solving skills:
   a. Identify important questions and separate data in organized fashion organizing positives & negatives
   b. Discern major from minor patient problems
c. Formulate a differential while identifying the most common diagnoses
d. Identify indications for & apply findings from the most common radiographic and
diagnostic tests
e. Identify correct management plan considering contraindications & interaction

3. **Clinical Skills** - the student should demonstrate the following problem solving skills:
   a. Assesses vital signs & triage patient according to degree of illness
   b. Perform good auscultory, palpatory & visual skills
   c. Perform a thorough physical exam pertinent to the rotation

4. **Osteopathic Manipulative Medicine** - the student should demonstrate the following skills in regards to osteopathic manipulative medicine
   a. Apply osteopathic manipulative medicine successfully when appropriate
   b. Perform and document a thorough musculoskeletal exam
   c. Utilize palpatory skills to accurately discern physical changes that occur with various clinical disorders
   d. Apply osteopathic manipulative treatments successfully

5. **Medical Knowledge** – the student should demonstrate the following in regards to medical knowledge
   a. Identify & correlate anatomy, pathology and pathophysiology related to most disease processes
   b. Demonstrate characteristics of a self-motivated learner including demonstrating interest and enthusiasm about patient cases and research of the literature
   c. Are thorough & knowledgeable in researching evidence based literature
   d. Actively seek feedback from preceptor on areas for improvement
   e. Correlate symptoms & signs with most common disease

6. **Professional and Ethical Behaviors** - the student should demonstrate the following professional and ethical behaviors and skills:
   a. Is dutiful, arrives on time & stays until all tasks are complete
   b. Consistently follows through on patient care responsibilities
   c. Accepts & readily responds to feedback, is not resistant to advice
   d. Assures professionalism in relationships with patients, staff, & peers
   e. Displays integrity & honesty in medical ability and documentation
   f. Acknowledges errors, seeks to correct errors appropriately
   g. Is well prepared for and seeks to provide high quality patient care
   h. Identifies the importance to care for underserved populations in a non-judgmental & altruistic manner

III. **Rotation Design**

A. **Educational Modules**
   Educational modules using lectures, cases, and other forms of delivery are used for third year curriculum. Each student must complete a post-rotation exam to assure that the expected basic content or medical knowledge has been acquired during the rotation. In addition to the experiences received in the clinical training sites, students are expected to read the content of the assigned textbooks and on line materials in order to complete the entire curriculum assigned for the clinical module.

B. **Formative Evaluation**
   Student competency based rating forms are used by the preceptor to evaluate each student’s clinical skills and the application of medical knowledge in the clinical setting. These forms are only completed by the clinical faculty member or preceptor. Performance on rotations will be evaluated by the primary clinical faculty member precepting the student. VCOM uses a competency based evaluation form which includes the osteopathic core competencies. These competencies evaluated include:
a. Medical knowledge;
b. Communication;
c. Physical exam skills;
d. Problem solving and clinical decision making;
e. Professionalism and ethics;
f. Osteopathic specific competencies; and
g. Additional VCOM values.

Student competency is judged on clinical skill performance. Each skill is rated as to how often the student performs the skill appropriately (i.e. unacceptable, below expectation, meets expectation, above expectation, exceptional).

C. Logging Patient Encounters and Procedures

Students are required to maintain a log to identify the procedures performed and the number of essential patient encounters in the CREDO application. All students must review these logs with their preceptors prior to the end of the rotation period, as required by the final preceptor evaluation form. Students are encouraged to periodically review their CREDO entries with their preceptor during the rotation period.

IV. Credits

5 credit hours

V. Course Texts

A. Required Textbooks


B. Recommended Textbooks


VI. Course Grading and Requirements for Successful Completion

A. Requirements

- Attendance according to VCOM and preceptor requirements as defined in the College Catalog and Student Handbook.
- Completion of all Clinical Modules in the required curriculum.
- Completion of a minimum of 11 Aquifer Pediatrics (CLIPP) Cases from the Required Curriculum. The students can choose any of the 11 cases from the following list to maximize their learning based on their exposure at their clinical third year site. Make sure to touch the last card in the case to complete the case.
  - Choose 11 of the following Aquifer Pediatrics (CLIPP) Cases:
    - Nursery – 1, 7, 8, 9, 18, 29
    - Inpatient – 15, 16, 10, 13, 22, 12, 25, 11, 19, 23, 24, 30
    - Outpatient – 2, 3, 4, 5, 6, 14, 13, 17, 20, 21, 26, 27, 28, 31, 32
  - Register for the Aquifer cases:
    - Go to https://www.aquifer.org
    - If you are a first-time user:
      - Click “Sign in” in the top right corner.
      - Enter your institutional email address in the email box. Then click on the “Register” button at the bottom of the page.
      - You will be sent an email with a link to complete registration. Upon receipt of the registration email, click on the link “Click
Here“. You will then be brought to the profile setup page. An email will be sent to you. Follow the instructions in the email to setup your account.

- You will be asked to fill in your profile information and set up a password (8 character minimum). Once you have completed your user profile and created a password, you will receive a welcome email with links to useful information and guides. You would also be logged into the Aqueduct learning management system.
- Once your profile is completed successfully, you will be brought to your institution’s Course page.
- You will also receive a “Thank you for registering with Aquifer” email with links to tools, resources, and Aquifer news.

If you are a returning user:
- Click “Sign in” in the top right corner.
- Please log in with your institutional email and account password and click “Sign In”.

- Logging Patient Encounters and Procedures in CREDO:
  - Students are required to log all patient encounters and procedures into the CREDO application. All students must review these logs with their preceptors prior to the end of the rotation period, as required by the final preceptor evaluation form. Students are encouraged to periodically review their CREDO entries with their preceptor during the rotation period. These reviews should stimulate discussions about cases and learning objectives, as well as identify curriculum areas the student may still need to complete. CREDO can be accessed at: https://credo.education/

- Rotation Evaluations:
  - Student Site Evaluation: Students must complete and submit at the end of rotation. See the VCOM website at: http://intranet.vcom.edu/clinical/Login/index.cfm?fuseaction=LoginInfo&LoginPage=ViewStudentSchedule to access the evaluation form.
  - Third-Year Preceptor Evaluation: It is the student's responsibility to ensure that all clinical evaluation forms are completed and submitted online or turned in to the Site Coordinator or the Clinical Affairs Office at the completion of each rotation. Students should inform the Clinical Affairs Office of any difficulty in obtaining an evaluation by the preceptor at the end of that rotation. See the VCOM website at: www.vcom.edu/academics/clinical-forms to access the evaluation form.
  - Mid-Rotation Evaluation: The mid-rotation evaluation form is not required but highly recommended. See the VCOM website at: www.vcom.edu/academics/clinical-forms to access the mid-rotation evaluation form.

- Successful completion of the end-of-rotation written exam. The end-of-rotation exam questions will be derived directly from the specific objectives presented in each of the below modules.
B. Grading

Students must pass both the "module" and "rotation" portions of the course. All rotations have a clinical rotation grade and clinical modules/exam grade. The clinical rotation grade uses the Honors, High Pass, Pass, Fail system; these grades are not calculated in the GPA. The rotation modules are assigned an exam grade.

### Clinical Grading Scale and GPAs

<table>
<thead>
<tr>
<th>OMS 3 End-of-Rotation Exam Grades</th>
<th>OMS 3 AND OMS 4 Clinical Rotation Grades</th>
<th>Other Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 90-100</td>
<td>H Honors</td>
<td>IP In Progress</td>
</tr>
<tr>
<td>B+ 85-89</td>
<td>HP High Pass</td>
<td>INC Incomplete</td>
</tr>
<tr>
<td>B 80-84</td>
<td>P Pass</td>
<td>CP Conditional Pass</td>
</tr>
<tr>
<td>C+ 75-79</td>
<td>F Fail</td>
<td>R Repeat</td>
</tr>
<tr>
<td>C 70-74</td>
<td></td>
<td>Au Audit</td>
</tr>
<tr>
<td>F &lt;70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. Remediation

Students who fail one or more rotations or one or more end-of-rotation exams twice will be referred to the Promotion Board. If a student fails the professionalism and ethics portion of the evaluation he or she may be removed from the rotation and referred to the Professionalism and Ethics Standards Board. No grade will be changed unless the Office of Clinical Affairs certifies to the Registrar, in writing, that an error occurred or that the remediation results in a grade change.

- **Failure of an End-of-Rotation Exam**
  Students must pass each end of rotation exam with a C (70%) or better to receive a passing grade for the clinical medical knowledge module. Students who fail an end of rotation exam but pass the clinical rotation evaluation component have a second opportunity to pass the exam within 28 days of notification. If the student passes the remediation exam, the remediated exam grade will be the grade recorded on the transcript and be GPA accountable. If the student fails the end of rotation exam a second time, the student will receive an “F” grade for the rotation and will be brought before the Promotion Board. If the student is allowed to repeat the rotation, all components of the rotation must be repeated. In this case, the “F” grade remains the permanent grade for the initial rotation and the student will receive a new grade for the repeated rotation. The grade will be recorded in a manner that designates that it is a repeated rotation (eg. R-pass).

- **Failure of a Rotation**
  If a student fails the clinical rotation evaluation the student will receive an “F” grade for the rotation and will be brought before the Promotion Board. If the student is allowed to repeat the rotation, all components of the rotation must be repeated. In this case, the “F” grade remains the permanent grade for the initial rotation and the student will receive a new grade for the repeated rotation. The grade will be recorded in a manner that designates that it is a repeated rotation (eg. R-pass).

- **Failure to Make Academic Progress**
  Repeated poor or failing performance in a specific competency area on the evaluation form across more than one rotation may also be a reason for a required remediation at the discretion of the Associate Dean for Clinical Affairs in consultation with the clinical chair, the preceptor, and the Promotion Board. In general, rotations should show a progression of improvement in clinical performance. Those students who receive a mere “Pass” on multiple rotations and/or maintain a “CP” on one or more rotations after final grades are received, will be counseled about overall performance.
performance and may be required to complete an additional rotation at the end of the year. Any additional curriculum or required remediation will be based on the performance measure. In general, rotations should show a progression of improvement in performance. Those students who continually score in the "unsatisfactory" category or repeated "performs some of the time, but needs improvement" consistently and do not improve over time or who fail one or more rotations may be deemed as not making academic progress and, as a result, may be referred to the Promotion Board and be required to complete additional curriculum. Multiple rotation failures may result in dismissal.

Poor ratings on the clinical rotation evaluation in the professional and ethical areas of the assessment are addressed by the Associate Dean for Clinical Affairs. The Associate Dean may design a remediation appropriate to correct the behavior or if needed may refer the student to the Professionalism and Ethics Board. In the case of repeated concerns in a professional and/or ethical area, the Associate Dean for Clinical Affairs may refer the student to the Campus Dean for a Behavioral Board or Promotion Board hearing. The Campus Dean will act upon this referral depending on the severity and the area of the performance measure. Poor ratings in this area will include comments as to the exact nature of the rating. Repeated poor failing performance in a specific competency area on the evaluation form across more than one rotation may also be a reason for a required remediation at the discretion of the Associate Dean for Clinical Affairs in consultation with the clinical chair and the preceptor, and the Promotion Board. In general, rotations should show a progression of improvement in clinical performance.

VII. Academic Expectations
Grading policies, academic progress, and graduation requirements may be found in the College Catalog and Student Handbook at: [http://www.vcom.edu/handbooks/catalog/index.html](http://www.vcom.edu/handbooks/catalog/index.html)

A. Attendance
Attendance for all clinical rotation days is mandatory. The clinical site will determine the assigned days and hours to be worked within the rotation period. Students are required to attend any orientation the clinical site sets as mandatory prior to any rotation or the clinical year. The orientation sessions vary by site and are required to maintain assignment to the site. Although the clinical site determines the assigned days and hours to be worked, VCOM has established the following guidelines:

- 4 week rotations may not be less than 20, eight hour days for a total of a minimum of 160 hours and often average 180 hours or greater.
  - Students may be required to work up to 24 days in a 4-week period or 25 days in a 1-month rotation, including call and weekends at the discretion of the clinical site.
  - If the clinical site requires longer daily hours or shift work, the student may complete the required hours in less than 20 days with the following specifications:
    - Students should not work greater than 12 out of every 14 days
    - Students should not work more than 12 hours daily, exclusive of on-call assignments.
    - If on-call hours are required, the student should not be on duty for greater than 30 continuous hours.
    - Students may be required to work weekends but in general should have 2 weekends per month free and 2 of 7 days per week free.
- 2 week rotations may not be less than 10, eight hour days for a total of a minimum of 80 hours and often average 100 hours or greater.
  - If the clinical site requires longer daily hours or shift work, the student may complete the required hours in less than 10 days with the following specifications:
    - Students should not work greater than 12 out of every 14 days.
- Students should not work more than 12 hours daily, exclusive of on-call assignments, and may not complete the 2 week rotation in less than 1 week.
- If on-call hours are required, the student should not be on duty for greater than 30 continuous hours.
- Students may be required to work weekends but in general should have 2 of 7 days per week free.

It should be noted that preceptors will have final determination of the distribution of hours, which may vary from this policy but should not in general be less than 160 hours for a 4 week rotation or less than 80 hours for a 2 week rotation. The institution’s DSME and assigned clinical faculty determine clinical duty hours. Students are responsible to the assigned clinical faculty and are expected to comply with the general rules and regulations established by the assigned clinical faculty, and/or the core hospital(s), or facility associated with the rotation.

The average student clinical day begins at 7 am and ends at 7 pm. Students are expected to work if their assigned clinical faculty is working. Some rotations assign students to shifts and in such cases the student may be required to work evening or night hours. If on-call hours are required, the student must take the call; however, the student should not be on duty for greater than 30 continuous hours. Students may be required to work weekends, but in general should have two weekends per month free and two of seven days per week free. Student holidays are determined by the clinical site and follow those of other students and/or residents from the clinical site. Students must be prompt and on time for the clinical rotation.

Students are expected to arrive on time to all clinical rotations. If a student is late, he or she must notify the site coordinator and the preceptor prior to or at the time they are scheduled to arrive. Students must have a reason for being late such as illness or vehicle issues and it is not anticipated that this would occur more than one occasion AND it is important the student call in prior to being late. Repeated tardiness is considered as unprofessional behavior and is a reason for dismissal from a rotation. Students with repeated tardiness will be referred to the PESB. Tardiness is defined as more than 5 minutes after the scheduled time the preceptor designates as the expected arrival time.

The Office of Clinical Affairs requires that the medical student complete and submit an Excused Absence Clinical Rotations Approval form for any time "away" from clinical rotations. Forms are available at: [www.vcom.edu/academics/clinical-forms](http://www.vcom.edu/academics/clinical-forms). The student must have this form signed by their preceptor and others designated on the form to obtain an excused absence and must be provided to the DSME and the Office of Clinical Affairs through the site coordinator. The form must be completed prior to the beginning of the leave. If an emergency does not allow the student to submit this prior to the absence, the “Excused Absence Clinical Rotations Approval” form must be submitted as soon as the student is physically able to complete the form. In addition to completion of the form, students must contact the Department of Clinical Affairs, the Site Coordinator, and the preceptor’s office by 8:30 AM of the day they will be absent due to an illness or emergency. No excused absence will be granted after the fact, except in emergencies as verified by the Associate Dean for Clinical Affairs.

Regardless of an excused absence, students must still complete a minimum of 160 hours for a 4 week rotation and 80 hours for a 2 week rotation in order to pass the rotation. Any time missed must be remediated during the course of the rotation for credit to be issued. Students may remediate up to four missed days or 48 hours missed during any rotation period by working on normal days off. OMS 3 and OMS 4 students who have any unexcused absences will be referred to the PESB.
VIII. **Professionalism and Ethics**

It is advised that students review and adhere to all behavioral policies including attendance, plagiarism, dress code, and other aspects of professionalism. Behavioral policies may be found in the *College Catalog and Student Handbook* at: [http://www.vcom.edu/handbooks/catalog/index.html](http://www.vcom.edu/handbooks/catalog/index.html)

A. **VCOM Honor Code**

The VCOM Honor Code is based on the fundamental belief that every student is worthy of trust and that trusting a student is an integral component in making them worthy of trust. Consistent with honor code policy, by beginning this exam, I certify that I have neither given nor received any unauthorized assistance on this assignment, where “unauthorized assistance” is as defined by the Honor Code Committee. By beginning and submitting this exam, I am confirming adherence to the VCOM Honor Code. A full description of the VCOM Honor Code can be found in the *College Catalog and Student Handbook* at: [http://www.vcom.edu/handbooks/catalog/index.html](http://www.vcom.edu/handbooks/catalog/index.html)

IX. **Clinical Modules**

Care of the Well Child

1. **Health Supervision**

   **Reading Assignment:** Nelson Essentials of Pediatrics, 8th Edition, Chapters 5, 6, 7, 8, 9, 11, 12, & 67

   **Additional Resources:**
   - [www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html# printable](http://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html# printable)
   - [https://m-chat.org/](https://m-chat.org/)
   - [https://agesandstages.com/](https://agesandstages.com/)
   - [https://www.healthychildren.org/English/safety-prevention/on-the-go/Pages/Car-Safety-Seats-Information-for-Families.aspx](https://www.healthychildren.org/English/safety-prevention/on-the-go/Pages/Car-Safety-Seats-Information-for-Families.aspx)

   **Online Cases:** *Aquifer Pediatrics CLIPP Cases 2, 3, 4, 5, & 6*

   **Learning Objectives:**
   - A. Recall the components of a health supervision visit for newborns, infants, toddlers, school aged children, and adolescents
     - I. Health promotion
     - II. Disease and Injury prevention
     - a. Recall the most common preventable morbidities in childhood and explain strategies for prevention
       - i. Accidents
         - 1. Accidental discharge of a firearm
         - 2. Bicycle accidents
         - 3. Burns
         - 4. Drowning
         - 5. Firework injuries
         - 6. House fire
         - 7. Ingestions
         - 8. Motor vehicle collisions
         - 9. Pedestrian injuries
         - 10. Recreational vehicle accidents
         - 11. Trampoline related injuries
       - ii. Intentional Injuries
         - 1. Child Abuse
         - 2. Homicide
         - 3. Suicide
b. Recall how risk of illness and injury changes during growth and development and identify examples of the age-and development-related illnesses and injuries

III. Recall the indications, appropriate use, interpretation, and limitations of the following screening tools and tests
   a. Anemia screening/CBC
   b. Developmental screening
      i. ASQ
      ii. Denver
      iii. MCHAT
   c. Environmental lead questionnaire and Blood lead level
   d. Hearing screening
   e. Tuberculosis testing
   f. Urinalysis
   g. Vision Screening

IV. Immunizations
   a. Explain the rationale for childhood immunizations
   b. Explain the limited contraindications to childhood immunizations
   c. Recall the immunizations currently recommended from birth through adolescence
   d. Distinguish a child with delayed immunization

V. Define anticipatory guidance and explain how it changes based on the age of the child

VI. Identify unique features of children with chronic medical conditions and special needs that should be addressed during health supervision visits
   a. Access to adequate child restraints for motor vehicles
   b. Ability to perform activities of daily living and need for specialized equipment or services
      i. Educational services
      ii. Feeding supplies
      iii. Mobility aids
      iv. Toileting needs
      v. Therapy services

2. Growth
   **Reading Assignment:** Nelson Essentials of Pediatrics, 8th Edition, Chapters 5, 6, & 21
   **Online Cases:** Aquifer Pediatrics CLIPP Cases 2, 3, 4, 5, & 6
   **Learning Objectives:**
   A. Understand the use of growth charts in assessing and determining patterns of growth
   B. Explain normal growth patterns in neonates, infant, children, and adolescents.
   C. Distinguish variants of normal growth in healthy children
      I. Constitutional delay
      II. Familial short stature
   D. Identify abnormal patterns of growth and recall the differential diagnosis for these
      I. Failure to thrive
      II. Overweight/obesity
3. Development
   Reading Assignment: Nelson Essentials of Pediatrics, 8th Edition, Chapters 7 & 8
   Additional Reading: Denver II Developmental Milestones.pdf
   Online Cases: Aquifer Pediatrics CLIPP Cases 2, 3, 4, 5, & 28
   Learning Objectives:
   A. Recall and define the five developmental domains of childhood as per the Ages and Stages Questionnaire
      I. Gross motor
      II. Fine motor
      III. Language
      IV. Personal-social development
      V. Problem solving
   B. Recall the critical developmental milestones in infants, toddlers and school age children
   C. Interpret findings on developmental screening tools that may suggest a diagnosis of developmental delay and/or autism spectrum disorders
   D. Specify the initial evaluation and step wise approach in management of developmental delays and autism spectrum disorders

4. Mental Health and Behavior
   Reading Assignment: Nelson Essentials of Pediatrics, 8th Edition, Chapters 7, 11, 12, 14, 15, 17-20, 27, 28, 29, 68, & 70
   Online Cases: Aquifer Pediatrics CLIPP Cases 2, 3, 4, 5 & 6
   Learning Objectives:
   A. Explain normal patterns of behavior in the developing child
      I. Birth - 2 years
         a. Sensorimotor stage
         b. Development of social skills
         c. Object permanence and function
         d. Representational play
         e. Newborn Dependence to Toddler autonomy
      II. 2 -7 years
         a. Preoperational Stage
         b. Independence
         c. Imagination
         d. Symbolic Play
      III. 7-11 years
         a. Concrete Operational Stage
         b. Logical thinking
      IV. >11 years
         a. Formal Operational Stage
         b. Abstract thinking
   B. Recall the common mental health and behavioral problems in different age groups, explain the necessary evaluation, treatment options, and anticipatory guidance relevant to the topic
      I. Newborns/Infant
         a. Colic
         b. Sleep problems
      II. Toddler
a. Autism spectrum disorders  
b. Temper tantrums  
c. Toilet training  
d. Picky eating  
e. Speech delay

III. School age  
a. Anxiety  
b. Attention deficit hyperactivity disorder  
c. Conduct disorder  
d. Encopresis  
e. Enuresis  
f. Learning disabilities  
g. Oppositional defiant disorder  
h. Tic disorder

IV. Adolescents  
a. Body image and disordered eating  
b. Depression and suicide  
c. Mood disorders  
d. Risk taking behaviors  
e. School failure  
f. Substance abuse

C. Explain how somatic complaints such as recurrent abdominal pain, headache or fatigue may represent underlying psychosocial problems

5. Nutrition  
Reading Assignment: Nelson Essentials of Pediatrics, 8th Edition, Chapters 21, 27, 28, 29, 30, & 31  
Additional Reading: Breastfeeding.pdf  
Online Case: Aquifer Pediatrics CLIPP Cases 1, 2, 3, 4, 8, 9, &26

Learning Objectives:  
A. Breastfeeding  
   I. Recall the advantages of breastfeeding for both mother and baby  
   II. Recall the common difficulties experienced by breastfeeding mothers  
B. Know the prevention, signs, symptoms, and medical management of common nutritional deficiencies in infants and children  
   I. Fluoride  
   II. Iron  
   III. Vitamin B  
   IV. Vitamin B12  
   V. Vitamin C  
   VI. Vitamin D  
   VII. Niacin  
C. Explain the nutritional factors that contribute to failure to thrive  
D. Identify the clinical presentation and medical management of pediatric undernutrition such as kwashiorkor and Marasmus  
E. Understand the underlying physiology and analyze the electrolyte derangement noted with refeeding syndrome
F. Childhood Obesity
   I. Explain the nutritional factors that contribute
   II. Recall the endocrine, cardiovascular and orthopedic consequences
   III. Explain the risk factors for the development of cardiovascular disease and diabetes in children

6. Newborn

**Reading Assignment:** Nelson Essentials of Pediatrics, 8th Edition, Chapters 53, 58, 59, 60, 61, 62, 63, 64, 65, 66, 134, & 137

**Additional Resources:** [http://www.medcalc.com/ballard.html](http://www.medcalc.com/ballard.html)

**VCOMTV Video:** [Newborn Conditions and Pearls: Newborn Exam](http://www.medcalc.com/ballard.html)

**Online Cases:** [Aquifer Pediatrics CLIPP Cases 1, 7, 8, & 9](http://www.medcalc.com/ballard.html)

**Learning Objectives:**

A. Recall the effects of maternal health, medications, and substances abuse on the fetus and child
   I. Maternal age
   II. Diabetes
   III. Hypertension
   IV. Alcohol consumption
   V. Smoking
   VI. Illicit drug use
   VII. Prescription medication use (phenytoin, valproate, retinoic acid)
   VIII. Previous history of stillbirth, fetal loss, or early neonatal death

B. Recall the factors in the perinatal and newborn history that may put a neonate at risk for medical problems
   I. Fetal conditions
      a. Prematurity
      b. Postmaturity
      c. Congenital anomalies
      d. Intrauterine growth restriction
      e. Multiple gestations
   II. Antepartum complications
      a. Placental anomalies
         i. Previa
         ii. Abruptio
      b. Abnormal amniotic fluid levels
         i. Oligohydramnios
         ii. Polyhydramnios
   III. Delivery complications
      a. Transverse lie or breech presentation
      b. Chorioamnionitis
      c. Meconium-stained amniotic fluid
      d. Antenatal asphyxia with abnormal fetal heart rate pattern
      e. Maternal administration of a narcotic within four hours of birth
      f. Deliveries that require instruments such as vacuum or forceps
      g. Cesarean delivery for maternal or fetal compromise

C. Explain the transition from the intrauterine to the extrauterine environment
   I. Temperature regulation
   II. Cardiovascular and respiratory systems
   III. Glucose regulation
IV. Initiation of feeding

D. Apply the APGAR scoring system to newborn care and need for resuscitation

E. Explain the key concepts used in the clinical evaluation of gestational age (Ballard score)

F. Recall how gestational age and weight affect risks of morbidity or mortality in the newborn period
   I. Need for respiratory assistance/lung disease
   II. Temperature regulation
   III. Ability to feed and glucose homeostasis

G. Explain the key components of the routine newborn exam

H. Explain the underlying pathology and management of the following exam findings
   I. Absence of the red reflex
   II. Ear pit and/or tag
   III. Epstein Pearl
   IV. Heart murmur (Patent ductus arteriosus)
   V. Hemangioma
   VI. Scalp swelling
   VII. Newborn rash
   VIII. Positive Ortolani and/or Barlow
   IX. Sacral dimple
   X. Slate grey patch

I. Explain the pathophysiology, differential diagnosis, screening, and management for the following newborn concerns
   I. Prematurity
   II. Small for gestational age
   III. Large for gestational age
   IV. Respiratory distress
   V. Poor feeding
   VI. Hypoglycemia
   VII. Hyperbilirubinemia
   VIII. Sepsis
   IX. Neonatal TORCH infections
   X. Drug exposure and neonatal abstinence syndrome

J. Explain the key components of routine newborn care
   I. Recall the routine newborn medications and rationale for these medications
      a. Vitamin K
      b. Eye Prophylaxis
      c. Hepatitis B vaccination
   II. Recall the standard components of newborn screening and the purpose of each test
      a. Blood spot
      b. Hearing screening
      c. Pulse oximetry
   III. Recall the common medical and metabolic disorders detected through the blood spot newborn screening test and explain their management
      a. Congenital Adrenal Hyperplasia
      b. Cystic Fibrosis
      c. Galactosemia
      d. Hemoglobinopathies
      e. Hypothyroidism
f. Phenylketonuria
g. Sickle cell disease

IV. Explain anticipatory guidance specific to the newborn
   a. Breastfeeding
   b. Normal sleep patterns
   c. Appropriate car seat use
   d. Prevention of SIDS
   e. The role of circumcision

7. Adolescent Medicine


Additional Reading:
- Adolescent screening for risky behaviors.pdf
- Bright Futures-Promoting-Healthy-Sexual-Development.pdf

Online Case: Aquifer Pediatrics CLIPP Cases 5 & 6

Learning Objectives:
A. Explain the unique features of the physician-patient relationship during adolescence including confidentiality and consent.
B. Explain the characteristics of early, mid, and late adolescents in terms of cognitive and psychosocial development
C. Explain methods to obtain a thorough social history in an adolescent (HEADSS)
D. Explain the sequence of the physical maturation (Tanners Scales) in both males and females
E. Anticipatory guidance and Health promotion
   I. Recall the common risk-taking behaviors of adolescents and explain the consequences of these activities
      a. Substance abuse
      b. Sexual activity
      c. Violence
   II. Explain the contributions of unintentional injuries, homicide and suicide to the morbidity and mortality of adolescents
   III. Specify the key components of a pre-participation sports physical
F. Identify the unique difficulties encountered by adolescents with chronic diseases, including adherence, and issues of autonomy vs dependence

8. Gender Identify and Sexual Orientation

Reading Assignment: Nelson Essentials of Pediatrics, 8th Edition, Chapter 23

Additional Reading: Office-Based Care for Lesbian, Gay, Bisexual, Transgender, and Questioning Youth

Learning Objectives:
A. Recall the developmental stages associated with emerging gender identity and sexual orientation
B. Identify issues faced by the GLBTQ youth
C. Explain ways health care providers can promote acceptance and respect of all patients regardless of their gender identity and/or sexual orientation
9. **Social Determinants of Health**

**Reading Assignment:** Nelson Essentials of Pediatrics, 8th Edition, Chapters 22, 23, 24, 25, & 26

**Additional Reading:** Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults The Adverse Childhood Experiences (ACE) Study by Vincent J. Felitti, MD, FACP

**Learning Objectives:**
- A. Recall the rationale for screening for social determinants of health (maternal/postpartum depression, poverty, domestic violence)
- B. Infer the types of situations where pathology in the family (alcoholism, domestic violence, depression) contributes to childhood health and behavioral disturbances
- C. Recall examples of Adverse Childhood Experiences (ACEs) and explain how ACEs affect adulthood outcomes

Care of the Sick Child

10. **Dysmorphology/Genetics**

**Reading Assignment:** Nelson Essentials of Pediatrics, 8th Edition, Chapters 47, 48, 49, & 50

**Additional Reading:** Zitelli and Davis’ Atlas of Pediatric Physical Diagnosis, Pages 13-17, 30, & 369

**Online Cases:** Aquifer Pediatrics CLIPP Cases 28 & 29

**Learning Objectives:**
- A. Recall the genetic basis and clinical manifestations of the following
  - I. Angelman syndrome
  - II. Autosomal trisomy (trisomy 21, trisomy 18, trisomy 13)
  - III. Chromosome 22Q11 deletion
  - IV. Fetal Alcohol Syndrome
  - V. Fragile X
  - VI. Klinefelter syndrome
  - VII. Pierre Robin Sequence
  - VIII. Prader-Willi syndrome
  - IX. Treacher Collins syndrome
  - X. Turner syndrome
  - XI. Williams syndrome
- B. Apply the use of chromosomal studies to the diagnosis of genetic disorders

11. **Neurology**

**Reading Assignment:** Nelson Essentials of Pediatrics, 8th Editions, Chapters 10, 179, 180, 181, 182, 183, 184, 185, 186, & 187

**Online Cases:** Aquifer Pediatrics CLIPP Cases 9, 17, 18, 20, 23, 25, & 28

**Learning Objectives:**
- A. Recall the differential diagnosis and clinical approach for the following symptoms and exam findings in children
  - I. Headache
  - II. Lethargy/irritability
  - III. First time seizure
- B. Explain the evaluation, workup and treatment of a febrile seizure
- C. Recall the classification of seizures as per the ILEA guidelines, clinical presentations, and classic EEG findings of each
  - I. Level 1: Seizure Type
    - a. Generalized
i. Motor

ii. Nonmotor (absence)

b. Focal

i. Level of Awareness
   1. Aware
   2. Impaired Awareness
   3. Unknown

ii. Description area affected
   1. Cognitive
   2. Emotional or Affective
   3. Autonomic
   4. Automatisms
   5. Motor
   6. Sensory
   7. Laterality

c. Unknown

II. Level 2: Epilepsy Based on Seizure Type

   a. Generalized
   b. Focal
   c. Combined generalized and focal
   d. Unknown if Generalized or Focal

III. Level 3: Epilepsy Syndrome

   a. West syndrome (Infantile Spasms)
   b. Benign epilepsy with centrotemporal spikes (Benign Rolandic Epilepsy)
   c. Lennox-Gastaut syndrome
   d. Childhood absence epilepsy
   e. Juvenile myoclonic epilepsy

IV. Level 4: Epilepsy with Etiology

   a. Etiologies
      i. Genetic
      ii. Structural
      iii. Metabolic
      iv. Immune
      v. Infectious
      vi. Unknown

   b. Comorbidities

D. Identify the clinical presentation and recall the treatment of status epilepticus

E. Identify the clinical features of cerebral palsy

F. Recall the differential diagnosis, clinical presentation and management of the following conditions associated with hypotonia
   I. Acute Disseminating Encephalomyelitis
   II. Botulism
   III. Duchenne Muscular Dystrophy
   IV. Guillain barre syndrome
   V. Myasthenia Gravis
   VI. Spinal Muscular Atrophy

G. Recall the clinical presentation and management of the following neurodegenerative disorders
   I. Krabbe disease
II. Hunter syndrome
III. Hurler syndrome
IV. Rett syndrome
V. Tay Sachs

H. Recall the clinical presentation and management of the following neurocutaneous disorders
   I. Neurofibromatosis
   II. Sturge Weber Syndrome
   III. Tuberous sclerosis

12. Eye/Ear/Nose/Throat

   Online Case: Aquifer Pediatrics CLIPP Cases 11, 13, & 14

   Learning Objectives:
   A. Recall the differential diagnosis for the following symptoms and exam findings
      I. Red eye
      II. Wandering eye
      III. White pupillary Reflex
      IV. Rhinorrhea
      V. Otalgia
      VI. Sore throat
   B. Apply proper techniques and skills to differentiate between a normal tympanic membrane, acute otitis media (AOM) and otitis media with effusion (OME)
   C. Explain management options for uncomplicated AOM
   D. Recall the clinical presentation, evaluation, management and the complications of Strep pharyngitis
   E. Understand the clinical presentation, systematic diagnostic work up, treatment plan, complications and potential sequelae of tonsillar hypertrophy
   F. Recall the clinical presentation and management of allergic rhinitis and conjunctivitis

13. Pulmonary

   Online Case: Aquifer Pediatrics CLIPP Cases 12, 13, & 28

   Learning Objectives:
   A. Recall the differential diagnosis for the following symptoms and exam findings
      I. Cough
      II. Stridor
      III. Wheezing
   B. Understand the clinical presentation, systematic diagnostic work up, treatment plan, complications and potential sequelae of the following disorders
      I. Upper airway disorders
         a. Choanal atresia
         b. Croup
         c. Epiglottitis
         d. Laryngomalacia
         e. Vocal cord paralysis
      II. Lower airway disorders
         a. Asthma
            i. Recall the classification
            ii. Explain the routine monitoring of severity
1. Frequency of office visits  
2. Asthma control questionnaire  
3. Peak flow meters  
4. Spirometry  

iii. Explain the treatment  
1. Acute exacerbations  
2. Status asthmaticus  
3. Maintenance therapy  

b. Bronchiolitis  
c. Bronchopulmonary Dysplasia (neonatal chronic lung disease)  
d. Cystic Fibrosis  
e. Foreign body aspiration  
f. Pneumonia  
g. Primary ciliary dyskinesia  
h. Pulmonary Hypertension  
i. Tracheoesophageal fistula  
j. Tracheomalacia  

C. Understand the clinical presentation, systematic diagnostic work up, treatment plan, complications and potential sequelae of the following disorders of the chest wall  
   I. Pectus excavatum  
   II. Pectus Carinatum  
   III. Costosternal syndrome (costochondritis)  

14. Cardiac  

**Reading Assignment:** Nelson Essentials of Pediatrics, 8th Edition, Chapters 139, 140, 141, 142, 143, 144, 145, 146, & 147  

**Additional Reading:** [Heart Sounds](#)  
**Online Cases:** [Aquifer Pediatrics CLIPP Cases 6, 11, & 18](#)  

**Learning Objectives:**  
A. Recall the differential diagnosis and evaluation for the following symptoms and exam findings  
   I. Syncope  
   II. Chest pain  
   III. Palpitations  
   IV. Heart murmur  
B. Identify the symptoms of congestive heart failure in an infant and explain the management  
C. Recall the clinical presentation, management, and classic EKG findings of common pediatric dysrhythmias  
   I. Premature Atrial beats  
   II. Heart block  
   III. Long QT syndrome  
   IV. Sinus arrhythmia  
   V. Supraventricular tachycardia  
   VI. Ventricular premature beats  
   VII. Ventricular tachycardia  
   VIII. Wolff-Parkinson-White syndrome  
D. Congenital heart disease  
   I. Explain acyanotic and cyanotic heart disease
II. Recall the pathophysiology and clinical presentation of the following congenital acyanotic heart lesions
   a. Patent ductus arteriosus
   b. Atrial septal defect
   c. Ventricular septal defect
   d. Coarctation of the aorta
   e. Endocardial cushion defect

III. Recall the pathophysiology and clinical presentation of the following congenital cyanotic heart lesions
   a. Truncus arteriosus
   b. Transposition of the great vessels
   c. Tetralogy of Fallot
   d. Tricuspid atresia
   e. Total anomalous pulmonary venous return
   f. Double outlet right ventricle
   g. Hypoplastic left heart
   h. Ebstein’s anomaly
   i. Pulmonary atresia
   j. Persistent pulmonary hypertension

IV. Recall the first steps in evaluation and treatment of congenital heart disease
V. Recall the pharmacology of maintaining an open ductus versus closing the ductus
VI. Compare the physiology, clinical presentation and management of dilated, hypertrophic, and restrictive cardiomyopathies

15. Renal
Online Cases: Aquifer Pediatrics CLIPP Case 31
Learning Objectives:
   A. Recall the differential diagnosis for the following symptoms, exam findings, and laboratory results
      I. Dysuria
      II. Abdominal Mass
      III. Hypertension
      IV. Hematuria
      V. Proteinuria
   B. Define renal failure in a child
   C. Recall the clinical presentation, diagnosis, and management of nephrotic syndrome in children
   D. Explain the clinical presentation, diagnosis, and management of post-streptococcal glomerulonephritis in children
   E. Understand the clinical presentation and organize a systematic clinical approach including treatment and management of Hemolytic Uremic syndrome
   F. Determine the clinical presentation, diagnostic approach, and management for the following urinary system anomalies
      I. Posterior urethral valves
      II. Ureteropelvic junction obstruction
      III. Vesicoureteral reflux
      IV. Hydronephrosis
      V. Hypospadias
VI. Recurrent urinary tract infections

16. Fluid and Electrolytes

Reading Assignment: Nelson Essentials of Pediatrics, 8th Edition, Chapter 32 & 33

Additional Reading: Zitelli and Davis’ Atlas of Pediatric Physical Diagnosis, Chapter 6

Online Case: Aquifer Pediatrics CLIPP Cases 15 & 16

Learning Objectives:
A. Hypovolemic dehydration
   I. Identify hypovolemic dehydration and classify it as mild, moderate, or severe based on history and physical exam findings
   II. Explain the appropriate rehydration method for each type of hypovolemic dehydration
B. Derive the following based on the child's weight
   I. Fluid bolus
   II. Volume deficit
   III. Daily maintenance needs
   IV. Impact of ongoing losses

17. Gastroenterology


Online Cases: Aquifer Pediatrics CLIPP Cases 15 & 27

Learning Objectives:
A. Explain the clinical presentation, differential diagnosis, evaluation, and management of the following symptoms, exam findings, and laboratory results
   I. Abdominal pain
      a. Acute
      b. Chronic
   II. Vomiting in children of different ages
      a. Biliary
         i. Small bowel obstruction
         ii. Volvulus
      b. Nonbiliary
         i. Acute gastroenteritis
         ii. Increased Intracranial pressure
         iii. Gastro esophageal reflux
         iv. Gastroesophageal reflux disease
         v. Metabolic derangements
         vi. Peptic Ulcer Disease
         vii. Pyloric stenosis
   III. Diarrhea
      a. Infectious
      b. Noninfectious
   IV. Constipation/Encopresis
   V. Gastrointestinal bleed
      a. Upper
      b. Lower
   VI. Abdominal mass
   VII. Hepatomegaly
   VIII. Elevated alkaline phosphatase, AST, ALT

B. Explain how to examine a patient with abdominal pain
C. Recall critical findings ("red flags") that differentiate functional from pathological abdominal pain
D. Identify the clinical presentation, evaluation, and management for the following gastrointestinal processes
   I. Appendicitis
   II. Celiac Disease
   III. Duodenal atresia
   IV. Food Protein-induced enterocolitis syndrome
   V. Hirschsprung’s disease
   VI. Inflammatory Bowel disease
   VII. Intussusception
   VIII. Gastroschisis
   IX. Malrotation
   X. Meconium ileus
   XI. Omphalocele
   XII. Umbilical hernia

18. Genital/Reproductive
   Online Cases: Aquifer Pediatrics CLIPP Case 22
   Learning Objectives:
   A. Recall the presentation of and risk factors for pelvic inflammatory disease in an adolescent
   B. Explain the screening for and treatment of sexually transmitted infections
   C. Determine the clinical approach to an adolescent with primary or secondary amenorrhea and dysmenorrhea
   D. Recall options for contraception in adolescents including risks and benefits

19. Hematology
   Reading Assignment: Nelson Essentials of Pediatrics, 8th Edition, Chapters 149, 150, 151, & 152
   Online Cases: Aquifer Pediatrics CLIPP Cases 3, 21, 27, & 30
   Learning Objectives:
   A. Recall the differential diagnosis for the following symptoms, exam findings, and laboratory results
      I. Petechiae and/or purpura
      II. Anemia
         a. Microcytic
         b. Normocytic
         c. Macrocytic
      III. Leukopenia
      IV. Thrombocytopenia
   B. Sickle Cell Disease
      I. Recall health maintenance and expected course for children with sickle cell disease
      II. Identify the complications of sickle cell disease that may lead to additional morbidity and mortality
      III. Explain the management of acute chest syndrome
   C. Recall the evaluation of anemia in an otherwise healthy child, as well as first-line therapy for iron-deficiency anemia
   D. Explain the clinical manifestations and treatment for Idiopathic Thrombocytopenic Purpura
E. Recall the clinical features, lab findings, natural history, and complications of Henoch Schönlein Purpura
F. Understand the coagulation pathway, clinical presentation, lab findings, and management for the following conditions
   I. Hemorrhagic disease of the newborn
   II. Factor V Leiden deficiency
   III. Protein C deficiency
   IV. Protein S deficiency
   V. Von Willebrand disease

20. Immunology

Reading Assignment: Nelson Essentials of Pediatrics, 8th Edition, Chapters 72, 73, 74, 75, 88, 89, 90, & 91

Online Cases: Aquifer Pediatrics CLIPP Case 11

Learning Objectives:
A. Understand the clinical presentation, systematic diagnostic work up, and management of each of the following vascular and autoimmune disorders
   I. Kawasaki’s disease
   II. Juvenile Dermatomyositis
   III. Juvenile idiopathic arthritis
   IV. Scleroderma
   V. Systemic Lupus Erythematosus
B. Understand the clinical presentation, systematic diagnostic work up, and management of each of the following immunodeficiencies
   I. Antibody Defects
      a. IgA
      b. IgG
   II. Transient Hypogammaglobulinemia of infancy
   III. Severe combined immunodeficiency
   IV. Common variable immunodeficiency
   V. Leukocyte adhesions deficiency
   VI. Chediak-Higashi syndrome

21. Oncology


Online Cases: Aquifer Pediatrics CLIPP Cases 20 & 21

Learning Objectives:
A. Recall the differential diagnosis for the following symptoms and exam findings
   I. Petechiae and/or purpura
   II. Abdominal mass
   III. Hepatomegaly
   IV. Splenomegaly
   V. Lymphadenopathy
B. Identify the clinical presentation of the common pediatrics cancers
   I. Leukemia
   II. Lymphoma
   III. Neuroblastoma
   IV. Wilms tumor
C. Explain the evaluation of an abdominal mass in a child
D. Recall the location and manifestations of primary CNS tumors in the pediatric population
E. Explain the principles of effectively breaking bad news to a child and to the child’s family

22. Dermatology

**Reading Assignment:** Nelson Essentials of Pediatrics, 8th Edition, Chapters 81, 84, 85, 87, 188, 189, 191, 192, 193, 194, 195 & 196

**Additional Reading:** [Pediatric Acne.pdf](#)

**Online Cases:** [Aquifer Pediatrics CLIPP Case 32](#)

**Learning Objectives:**

A. Recall the clinical presentation, differential diagnosis, and management of diaper rash

B. Organize a systematic approach for these clinical signs café au lait spots, melanocytic nevus, hemangiomas, port wine stains.

C. Recall the key history and physical findings, and organize a systematic approach to treatment of the following common pediatric dermatologic conditions
   
   I. Atopic dermatitis/eczema
   
   II. Contact dermatitis
   
   III. Seborrheic dermatitis
   
   IV. Pityriasis rosea
   
   V. Scabies
   
   VI. Superficial fungal infections
   
   VII. Urticaria
   
   VIII. Viral Exanthems
      
      a. Herpes Simplex Virus
      
      b. Hand Foot and Mouth Syndrome
      
      c. Erythema infectiosum
      
      d. Roseola
      
      e. Varicella

D. Explain the indications, general approach to selection of strength, and the common side effects associated with topical steroid use

E. Recall the clinical presentation and management of the following syndromes
   
   I. Beckwith-Wiedemann Syndrome
   
   II. Klippel-Trenaunay Syndrome

23. Orthopedics

**Reading Assignment:** Nelson Essentials of Pediatrics, 8th Edition, Chapters 197, 199, 200, 201,202, & 203

**Online Cases:** [Aquifer Pediatrics CLIPP Cases 6, 7, & 17](#)

**Learning Objectives:**

A. List the differential diagnosis for limp
   
   I. Developmental
   
   II. Infectious
   
   III. Inflammatory
   
   IV. Metabolic
   
   V. Neoplastic
   
   VI. Trauma

B. Explain the management of developmental dysplasia of the hip

C. Identify the typical history, physical exam, and treatment for nursemaid’s elbow

D. Explain the process of maturation of the skeletal system and the impact this has on the differential diagnosis of musculoskeletal injuries

E. Explain the Salter Harris classification and the associated X-ray findings
F. Explain the impact of skeletal immaturity on certain sports such as weight lifting

G. Explain the clinical manifestation, diagnostic approach and management of the following orthopedic conditions
   I. Adolescent idiopathic scoliosis
   II. Avascular necrosis of the femoral head
   III. Developmental dysplasia of the hip
   IV. Legg calve perthes
   V. Osgood Schlatter
   VI. Severs disease
   VII. Slipped capital femoral epiphysis

24. Endocrine


Online Cases: Aquifer Pediatrics CLIPP Cases 9 & 16

Learning Objectives:
A. Recall the clinical presentation, evaluation, and management of thyroid disorders in infancy and childhood
   I. Hypothyroid
   II. Hyperthyroid
B. Compare the clinical presentation, lab findings and management of type I and type II DM
C. Recall the clinical presentation, systematic evaluation, and management of precocious puberty in childhood
D. Recall the clinical presentation, systematic evaluation, and management of the following endocrine disorders
   I. Addison’s disease (Adrenal insufficiency)
   II. Congenital Adrenal Hyperplasia
   III. Cushing’s syndrome
   IV. Syndrome of inappropriate antidiuretic hormone secretion (SIADH)

25. Emergency Medicine


Additional Reading: https://www.poison.org

Online Cases: Aquifer Pediatrics CLIPP Cases 10, 12, 13, 14, 15, 16, 19, 21, 22, 23, 24, & 25

Learning Objectives:
A. Identify the critically ill child based on history, vital signs, and physical exam findings
B. Recall the presentation and explain the age appropriate steps in management for each of the following emergencies
   I. Respiratory Distress
      a. Anaphylaxis
      b. Asthma
      c. Bronchiolitis
      d. Foreign body aspiration
      e. Croup
      f. Pneumonia
   II. Altered Mental Status
      a. Child abuse/Violence
      b. Diabetic ketoacidosis
c. Head injury
d. Hypoglycemia
e. Hypoxemia
f. Increased ICP
g. Infection
h. Shock
i. Substance abuse

III. Apnea
   a. Brief resolved unexplained event (BRUE)
   b. GERD
   c. Respiratory infection
d. Seizures/Status Epilepticus
e. Sepsis

IV. Gastrointestinal bleeding
   a. Inflammatory bowel disease
   b. Intussusception
c. Meckel’s diverticulum

V. Injuries and accidents
   a. Animal bites
   b. Concussion
   c. Minor head injury

VI. Shock
   a. Congestive heart failure
   b. Diabetic Ketoacidosis
c. Electrolyte disturbances
d. Sepsis
e. Severe dehydration

C. Recall the developmental vulnerability for poisoning, accidental and intentional ingestions in infants, toddlers, children and adolescents.

Osteopathic Manipulative Medicine and the Osteopathic approach to clinical cases are covered in the monthly workshops and tested on the OMM end-of-rotation exams. Students are responsible for reviewing the OMM Syllabus and meeting the learning objectives covered in each month’s workshop.