



Edward Via College of Osteopathic Medicine

3rd Year Clinical Rotation: Pediatric Medicine

ROTATION SYLLABUS



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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 on-line 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 auscultatory, 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. Procedure Log

Students are required to maintain a log to identify the procedures performed, and the number of essential patient encounters. The faculty member will verify the information at the end of the rotation either online using a password signature, or by signing the log.

IV. Credits

5 credit hours

V. Course Texts

A. Required Textbooks

- Marcdante, K.J. (2015). *Nelson essentials of pediatrics* (7th ed.). Philadelphia, PA: Elsevier. ISBN-13: 978-1455759804
- Kuchera, M. & Kuchera, W. (1994). *Osteopathic considerations in systemic dysfunction* (Rev 2nd ed.). Dayton, OH: Greyden Press. ISBN: 978-1570741548
- American Osteopathic Association, & Chila, A. *Foundations of osteopathic medicine* (3rd ed.). Baltimore, MD: Lippincott Williams & Wilkins. ISBN: 978-0781766715
Available in electronic format on the VCOM Library – on LWW Osteopathic Medicine Collection

B. Recommended Textbooks

- Zitelli, B.J., McIntire, S.C., & Nowalk, A.J. (2012). *Zitelli and Davis' atlas of pediatric physical diagnosis* (6th ed.). Philadelphia, PA: Elsevier. ISBN-13: 978-0323079327

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”.
- Procedure Log
 - Please submit completed procedure logs electronically on the VCOM Portal by the last day of the rotation.
 - [Please print out a copy of the procedure log.](#)
 - During the rotation, keep track of the number of each procedures you perform or witness.
 - At the end of the rotation, your preceptor must review and sign the procedure log.
 - Input the number of each procedure into the electronic log on the Portal once rotation has been completed. Please see the website at: www.vcom.edu/sites/default/files/clinical/files/Online%20Procedure%20Logs%20Instructions.pdf for instructions. Note: Once this information is submitted, you cannot re-enter the log on the Portal.
 - Keep the signed paper copy for your records. (It does not need to be turned into the site coordinator or VCOM.)
- Rotation Evaluations:
 - Student Site Evaluation: Students must complete and submit at the end of rotation. See the VCOM website at: <http://intranet.vcom.vt.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						
OMS 3 End-of-Rotation Exam Grades			OMS 3 AND OMS 4 Clinical Rotation Grades		Other Grades	
A	90-100	4.0	H	Honors	IP	In Progress
B+	85-89	3.5	HP	High Pass	INC	Incomplete
B	80-84	3.0	P	Pass	CP	Conditional Pass
C+	75-79	2.5	F	Fail	R	Repeat
C	70-74	2.0			Au	Audit
F	<70	0.0				

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 30 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 second attempt at the end-of-rotation exam, an F is recorded for the exam grade, and the student will be brought before the Promotion Board.

- **Failure of a Rotation**

The student who does not receive a satisfactory evaluation for a clinical rotation in the second semester will receive a failing 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 first 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 a 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. Those students who continually score in the "unsatisfactory" category or repeated "performs some of the time, but needs improvement" and who do not improve over

time 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.

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.

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>

A. Attendance

Attendance for all clinical rotations is mandatory. Students are required to work a minimum of 20 days in a four week rotation period but should not work greater than 12 out of every 14 days or more than 12 hours daily exclusive of call assignments. Students may be required to work up to 24 days in a 4 week period or 25 days in a one month rotation including call and weekends at the discretion of the clinical faculty member providing the educational experience. For those rotations consisting of shift work such as Emergency Medicine or Hospitalist services, students should work a minimum of 160 and up to 200 hours for the month as required by the clinical site.

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.

Students must complete an Excused Absence Clinical Rotations Approval form. Forms are available at: www.vcom.edu/academics/clinical-forms. The Office of Clinical Affairs requires that the medical student complete and submit this form for any time "away" from clinical rotations. The student must have this form signed by their preceptor and others designated on the form to obtain an excused absence. 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 by 8:00 AM of the day they will be absent due to an illness or emergency and contact the Site Coordinator and preceptor(s). 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 complete a minimum of 160 hours.

OMS 3 students who have any unexcused absences will be referred to the Promotion Board and/or Professional and Ethics Standards Board as determined by the Associate Dean. Clinical site coordinators and preceptors document attendance on the student's rotation evaluation form. This information is reviewed by the Director of 3rd Year Clinical Rotations and the Associate Dean for Clinical Affairs.

A student is 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 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 a reason for a referral to the Promotion Board and/or Professional and Ethics Standards Board as determined by the Associate Dean.

Any time missed must be remediated during the course of the month 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.

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>

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>

IX. Clinical Modules

Note: Additional resources and additional reading assignments below can be found in the VCOM Portal under “Rotation and Department Info”, then “Pediatric Medicine”, then “Resources.

1. Health Supervision

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 9 & 94

Additional Resources: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html#printable

Online Cases: [Aquifer Pediatrics CLIPP Cases 2, 3, 4, 5, & 6](#)

Learning Objectives:

- i. Describe the rationale for childhood immunizations and list the immunizations currently recommended from birth through adolescence
- ii. Describe the general indications and contraindications of immunizations
- iii. Discuss the rationale for screening tests such as urinalysis, blood lead level, PPD, anemia screen, developmental screening, hearing and vision screening
- iv. Describe the components of a health supervision visit for newborns, infants, toddlers, school aged children and adolescents

2. Growth

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 5, 6, & 21

Online Cases: [Aquifer Pediatrics CLIPP Cases 2, 3, 4, 5, & 6](#)

Learning Objectives:

- i. Describe variants of normal growth such as constitutional delay and familial short stature
- ii. Identify failure to thrive and overweight/obesity in a child or adolescent using BMI and standard growth curves
- iii. Know the differential diagnosis of an infant or child with failure to thrive
- iv. Be able to interpret a growth curve and recognize abnormal growth patterns

3. Development

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 7 & 8

Additional Reading: [Denver II Developmental Milestones.pdf](#)

VCOM TV Video: [Childhood development](#)

Online Cases: [Aquifer Pediatrics CLIPP Cases 2, 3, 4, 5, & 28](#)

Learning Objectives:

- i. Describe the four developmental domains of childhood (gross motor, fine motor, language and social development)
- ii. Know critical developmental milestones in infants, toddlers and school age children and describe how these are evaluated in the office setting
- iii. Describe how abnormal findings on developmental screening tools would suggest a diagnosis of developmental delay, autism, pervasive developmental delay and mental retardation

4. Behavior

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 7, 11, 12, 13, 14, 15, & 17

Online Cases: [Aquifer Pediatrics CLIPP Cases 2, 3, 4, 5 & 6](#)

Learning Objectives:

- i. Know normal patterns of behavior in the developing child
 - a. Newborns: development and evolution of social skills
 - b. Toddler: autonomy
 - c. School Age: independence
 - d. Adolescent: abstract thinking
- ii. Describe how somatic complaints may represent psychosocial problems (e.g. recurrent abdominal pain, headache, fatigue and neurologic complaints)
- iii. Know typical presentation of common behavioral problems in different age groups:
 - a. Newborns/Infants: colic, sleep problems
 - b. Toddler: temper tantrums, toilet training, feeding problems
 - c. School age: enuresis, attention deficit, encopresis
 - d. Adolescents: eating disorders, risk taking behaviors, conduct disorders

5. Nutrition

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 27, 28, 29, 30, & 31

Additional Reading: [Breastfeeding.pdf](#)

Online Case: [Aquifer Pediatrics CLIPP Case 1](#)

Learning Objectives:

- i. Describe the advantages of breastfeeding and describe common difficulties experienced by breastfeeding mothers.
- ii. Identify the known benefits of feeding human breast milk to infants
- iii. Know the signs and symptoms of common nutritional deficiencies in infants and children such as iron, vitamin D, fluoride.
- iv. Describe nutritional factors that contribute to the development of childhood obesity and failure to thrive
- v. Discuss the endocrine, cardiovascular and orthopedic consequences of childhood obesity
- vi. Know the risk factors for the development of cardiovascular disease and diabetes in children

6. Adolescent Medicine

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 67, 68, 70, 71, & 116

Additional Reading:

- [Adolescent screening for risky behaviors.pdf](#)
- [Bright Futures-Promoting-Healthy-Sexual-Development.pdf](#)

Online Case: [Aquifer Pediatrics CLIPP Case 22](#)

Learning Objectives:

- i. Identify and describe the sequence of the physical changes of puberty in both males and females (Tanner Stages)
- ii. Describe the common risk taking behaviors of adolescents, such as alcohol and other drug use, sexual activity and violence and the consequences of these activities
- iii. Describe the common mental health problems in adolescence, including school failure, attention deficit, body image, eating disorders, depression and suicide
- iv. Know how to interview an adolescent using the HEADSS method
- v. Know the components of the pre-participation sports exam

7. Newborn Exam

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 58, 59, 60, 61, 62, 65, & 66

VCOMTV Video: [Newborn Conditions and Pearls: Newborn Exam](#)

Online Cases: [Aquifer Pediatrics CLIPP Cases 1, 7, 8, & 9](#)

Learning Objectives:

- i. Understand the important elements of a prenatal history as they relate to the health of the unborn child, including the importance of maternal age
- ii. Recognize factors in the perinatal and newborn history that may put a neonate at risk for medical problems
- iii. Describe the transition from the intrauterine to the extrauterine environment, including temperature regulation, cardiovascular/respiratory adjustment, glucose regulation and initiation of feeding
- iv. Identify the key concepts used in the clinical evaluation of gestational age and stability at birth (e.g., the Ballard score and Apgar score). Use weight and gestational age to categorize potential clinical problems
- v. Be familiar with the newborn exam and the underlying pathology of certain exam findings (e.g. scalp swelling, absence of the red reflex, heart murmur, skin findings, positive ortolani/barlow)
- vi. List the complications and differential diagnosis for the following common problems that occur in the newborn
 - a. Jaundice
 - b. Respiratory distress
 - c. Poor feeding
 - d. Large and small for gestation infants
 - e. Sepsis
 - f. Hypoglycemia
 - g. Drug withdrawal/exposure
 - h. Prematurity
- vii. Demonstrate knowledge of the indication for newborn screening for TORCH infections, including HIV
- viii. Identify what medications are routinely given to all newborns (e.g., vitamin K, hepatitis B vaccine, eye prophylaxis).
- ix. Identify treatment options for hyperbilirubinemia and be aware of the American Academy of Pediatrics' practice guideline "Management of Hyperbilirubinemia in the Healthy Term Newborn."
- x. Understand the clinical manifestations of congenital hypothyroidism
- xi. Be able to provide anticipatory guidance about breastfeeding, normal sleep patterns, appropriate car seat use, prevention of SIDS and the role of circumcision

8. Dysmorphology/Genetics

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 47, 48, & 49

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:

- i. Describe the genetic basis and clinical manifestations of the following syndromes
 - a. Autosomal Trisomies (trisomy 21, trisomy 18, trisomy 13)
 - b. Turner Syndrome
 - c. Klinefelter syndrome
 - d. Fragile X
 - e. Chromosome 22Q11 deletion
 - f. Fetal alcohol syndrome
- ii. List the common medical and metabolic disorders (e.g. hearing loss, hypothyroidism, PCU, cystic fibrosis, hemoglobinopathy) detected through newborn screening programs
- iii. Describe the use of chromosomal studies in the diagnosis of genetic disorders

9. Common Acute Pediatric Illness

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 96, 97, 100, 102-110, & 112

Online Cases: [Aquifer Pediatrics CLIPP Cases 10, 12, 14, 15, 16, 17, 19, 20, 22, & 23](#)

Learning Objectives:

- i. List the age appropriate differential diagnosis for pediatric patients presenting with each of the following symptoms:
 - a. Abdominal pain
 - b. Cough/Wheeze
 - c. Diarrhea
 - d. Fever and rash
 - e. Fever without a source
 - f. Headache
 - g. Lethargy or irritability
- ii. Recognize common viral exanthems
- iii. Describe findings associated with a normal tympanic membrane, acute otitis media (AOM) and otitis media with effusion (OME) using proper techniques and skills.
- iv. List management options for uncomplicated AOM

10. Fluid and Electrolyte Management

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 32, 33, & 40

Online Cases: [Aquifer Pediatrics CLIPP Cases 16 & 23](#)

Learning Objectives:

- i. Estimate the percent dehydration based upon relevant physical exam findings.
- ii. Discuss 3 types of dehydration and appropriate rehydration method for each.
- iii. Calculate the bolus fluids, volume deficit and daily maintenance needs based on the child's weight.
- iv. Describe the impact and management of ongoing losses.
- v. Understand the management of septic shock in the pediatric patient

11. Common Chronic Illness and Disability

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 78, 79, 80, 125, 137, 171, & 180

Additional Reading:

- [Asthma Action Plan.pdf](#)
- Chronic conditions: www.healthychildren.org/English/health-issues/conditions/chronic/Pages/default.aspx

Online Cases: [Aquifer Pediatrics CLIPP Cases 13, 26, & 28](#)

Learning Objectives:

- i. Describe the clinical features of chronic medical conditions seen in children with the following:
 - a. Asthma
 - b. Atopic dermatitis
 - c. Cerebral palsy
 - d. Cystic fibrosis
 - e. Diabetes mellitus
 - f. Obesity
 - g. Seasonal allergies
 - h. HIV/AIDS
 - i. Sensory impairment
- ii. Describe how chronic illness can influence a child's growth and development, educational achievement and psychosocial functioning

12. Congenital Heart Disease

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 139, 143, 144, & 145

Additional Reading: Heart Sounds: www.med.ucla.edu/wilkes/intro.html

Online Case: [Aquifer Pediatrics CLIPP Case 18](#)

Learning Objectives:

- i. Evaluation of a heart murmur in infancy or childhood.
- ii. Recognition of congestive heart failure in an infant.
- iii. Understand the pathophysiology of ventricular septal defect and atrial septal defect
- iv. Know the management of CHF in an infant
- v. Know the congenital cyanotic heart lesions
- vi. Understand the role of the ductus arteriosus and the clinical manifestations of a patent ductus arteriosus

13. Seizures and Epilepsy

Reading Assignment: Nelson Essentials of Pediatrics, Chapter 181

Online Case: [Aquifer Pediatrics CLIPP Case 19](#)

Learning Objectives:

- i. Understand the differential diagnosis of a first time seizure in a child
- ii. Be able to explain the evaluation, workup and treatment of a febrile seizure
- iii. Become comfortable with the key historical questions and physical exam in a child with seizures
- iv. Understand the classification of epileptic seizures and the characteristics of both neonatal and childhood epilepsy syndromes

14. Pediatric Dermatology

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 81, 87, 188, 189, 191, 192, & 196

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

VCOM TV Video: [Pediatric Rashes](#)

Online Cases: [Aquifer Pediatrics CLIPP Cases 21 & 32](#)

Learning Objectives:

- i. Outline the key history and physical findings associated with the following common pediatric dermatologic conditions: urticaria, seborrheic dermatitis, contact dermatitis, acne, superficial fungal infections, and scabies.
- ii. List a prioritized differential diagnoses for an urticarial rash.
- iii. Discuss the diagnosis and management of acne.
- iv. Discuss the general approach to choosing a topical steroid and the common side effects associated with their use.
- v. List three at least three conditions in the differential diagnosis of diaper rash.
- vi. Formulate a differential diagnosis for petechiae and purpura in a school-aged child.

- vii. Summarize clinical features, lab findings, natural history, and complications of Henoch-Schönlein Purpura

15. Childhood Malignancies

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 153 - 160

Online Cases: [Aquifer Pediatrics CLIPP Cases 17, 20, & 21](#)

Learning Objectives:

- i. Formulate a differential diagnosis for petechiae and purpura in a school-aged child.
- ii. Differentiate normal and abnormal findings on examination of the lymph nodes, liver, and spleen
- iii. Know the differential diagnosis of an abdominal mass in a pediatric patient and the necessary workup for this finding (e.g. wilms tumor, neuroblastoma)
- iv. Know the location and manifestations of primary CNS tumors in the pediatric population
- v. The principles of effectively breaking bad news to a patient and a patient's parents

16. Child Abuse

Reading Assignment: Nelson Essentials of Pediatrics, Chapter 22

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

Online Case: [Aquifer Pediatrics CLIPP Case 25](#)

Learning Objectives:

- i. List the characteristics of the history and physical examination that should trigger concern for possible physical, sexual and psychological abuse and neglect such as inconsistency in the history, unexplained delays in seeking care, injuries with specific patterns or distributions on the body
- ii. Describe physical signs and symptoms of shaken-baby syndrome.
- iii. Order appropriate laboratory and radiological studies for an infant with suspected physical abuse and shaken-baby syndrome.

17. Pediatric Emergencies

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 38, 39, 40, 42, 44, 45, 135, & 136

Additional Reading: [Poison Control](#)

Learning Objectives:

- i. Be able to identify the infant, child or adolescent with a medical emergency
- ii. Know the initial emergency management of shock, respiratory distress, lethargy, apnea and status epilepticus in pediatric patients
- iii. Describe the age appropriate differential diagnosis and key clinical findings for each of the emergent clinical problems:
 - a. Airway Obstruction (croup, bronchilolitis, asthma, pneumonia, foreign body aspiration, anaphylaxis)
 - b. Altered Mental Status (Head injury, increased ICP, substance abuse, infection, diabetic ketoacidosis, hypoglycemia, abuse, shock and hypoxemia)
 - c. Apnea (ALTE, seizures, respiratory infections, GERD, sepsi)
 - d. Gastrointestinal bleeding (Meckels diverticulum, intussusception)
 - e. Injuries and accidents (Animal bites, minor head injury, nursemaids elbow)
 - f. Shock (sepsis, severe dehydration, DKA, congestive heart failure, electrolyte disturbances)
- iv. Describe the developmental vulnerability for poisoning and accidental ingestion in infants, toddlers, children and adolescents.

18. Pediatric Hematology

Reading Assignment: Nelson Essentials of Pediatrics, Chapter 150

Online Cases: [Aquifer Pediatrics CLIPP Cases 3 & 30](#)

Learning Objectives

- i. Describe health maintenance and expected course for children with sickle cell disease.
- ii. Recognize the complications of sickle cell disease that may lead to additional morbidity and mortality.
- iii. Describe the management of acute chest syndrome
- iv. Discuss the common causes and work-up of anemia in an otherwise healthy child, as well as first-line therapy of iron-deficiency anemia
- v. Understand the clinical manifestations and treatment for Idiopathic Thrombocytopenic Purpura

19. Gastrointestinal Disorders

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 126, 129, & 116

Online Cases: [Aquifer Pediatrics CLIPP Cases 22 & 27](#)

Learning Objectives

- i. Understand and demonstrate the approach to the physical exam in a patient with abdominal pain.
- ii. Understand the differential diagnosis for chronic abdominal pain.
- iii. Understand the differential diagnosis of intestinal blood loss.
- iv. Recognize critical findings ("red flags") that differentiate functional from pathological abdominal pain.
- v. Understand the presentation and basis of therapy for inflammatory bowel disease.
- vi. Know the differential diagnosis of constipation and possible underlying etiologies associated with constipation in children.
- vii. List the differential diagnosis of diarrhea including the different causes of infectious diarrhea.
- viii. Review the presentation of and risk factors for pelvic inflammatory disease in an adolescent.
- ix. Know the differential diagnosis for both non-bilious vomiting (e.g. AGE, pyloric stenosis, GERD, metabolic derangements, increase ICP) and bilious vomiting (e.g. small bowel obstruction, volvulus) in the children of different ages.

20. Pediatric Musculoskeletal Disorders

Reading Assignment: Nelson Essentials of Pediatrics, Chapters 197, 199, 200, 201, & 204

Online Cases: [Aquifer Pediatrics CLIPP Cases 3 & 30](#)

Learning Objectives

- i. Be able to construct a differential diagnosis for limp in a pediatric patient (e.g. trauma, infectious, inflammatory, developmental, neoplastic, and metabolic)
- ii. Recognize the typical history, physical exam and treatment for nursemaid's elbow

21. Osteopathic Manipulative Medicine and Pediatrics

A. The Common Cold

Reading Assignment: Osteopathic Considerations in Systemic Dysfunction, The Common Cold, pp. 23 - 32

Learning Objectives:

- i. Discuss the benefits of using OMT treatment in a patient with a URI
- ii. Recall the effects of the sympathetic and parasympathetic nervous system on congestion and nasal mucosa
- iii. Identify specific areas of the body which may be treated with OMT to help in alleviating URI symptoms
- iv. Describe the effect the cranial rhythmic impulse has on sinus drainage and which bones are most directly involved.

B. Uncontrolled Asthma

Reading Assignment: Foundations of Osteopathic Medicine, Chapter 54: Uncontrolled Asthma, pp. 883-888

Learning Objectives:

- i. Discuss the benefits of using OMT in a patient with asthma.
- ii. Recognize the specific areas of the musculoskeletal system which, if dysfunctional, may contribute to or exacerbate respiration.

C. Ear Pain

Reading Assignment: Foundations of Osteopathic Medicine, Chapter 58: The Child with Ear Pain, pp. 918-930

Learning Objectives:

- i. Identify different etiologies of ear pain.
- ii. Identify the recommended osteopathic treatments for acute otitis media
- iii. Describe the relationship between the cranial base and Eustachian tube.
- iv. Identify the recommended osteopathic treatments for acute otitis media
- v. Describe the relationship between the cranial base and Eustachian tube.