I. Rotation Description
As clinicians, teachers, and researchers, our internal medicine faculty members are committed to the college's mission to provide medical education and research that prepares globally minded, community-focused physicians and to improve the health of those most in need.

The Internal Medicine clinical faculty are practicing in affiliated teaching hospitals for VCOM. The Internal Medicine faculty are passionate about medicine and medical education. The Internal Medicine faculty include those practicing primary care internal medicine, hospital medicine, and those who practice in the full range of sub-specialties. Sharing the college's mission, and leading by example, members of our faculty provide volunteer care for the under-served in regional free clinics, and on international medical missions.
During the third year internal medicine rotations, students expand their knowledge of adult health and wellness, preventative, primary, secondary and tertiary care. They learn about the treatment of acute and chronic medical conditions, palliative and end of life care and gain the ability to apply this knowledge in the clinical setting. The curriculum is taught through on-line interactive SIMPLE cases, assigned readings, bedside and clinic teaching, journal clubs, tumor boards, grand rounds, 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 internal medicine and the longitudinal OMM course. The Core Internal Medicine rotations include inpatient and outpatient exposure, as well as general internal medicine and medical sub-specialty exposure. The practice of internal medicine occurs in the private, public and governmental clinic settings, in long-term care facilities, in inpatient institutional settings and in the emergency departments of hospitals and institutions. Due to the variety of practice opportunities and formats in internal medicine rotations, students should review their specific site instructions for a more detailed description of their specific practice setting.

II. Course Goals and Objectives

A. Goals of the Course

- Identify the symptoms and signs of chest pain characteristic of angina pectoris.
- Categorize the patients’ symptoms as angina pectoris, atypical angina, or non-cardiac chest pain.
- Obtain, document, and present an appropriately complete medical history that differentiates among the common etiologies of chest pain.
- Obtain a history of a patient with chest pain that contains information about those clinical characteristics that are typical of angina pectoris and includes risk factors of coronary heart disease.
- Perform a physical exam that includes identifying the presence of dyspnea and anxiety, obtaining accurate vital signs, and performing heart, lung, and vascular exams.
- Order appropriate laboratory and diagnostic studies based on patient demographics and the most likely etiologies of chest pain.
- Recommend primary and secondary prevention of ischemic heart disease through the reduction of cardiovascular risk factors (e.g. controlling hypertension and dyslipidemia, aggressive diabetes management, avoiding tobacco, and aspirin prophylaxis).
- Prescribe appropriate anti-anginal medications when indicated and communicate potential adverse reactions.

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 family medicine 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
  Electronic format is available only if purchased or if hard copy of text is purchased.
  Available in electronic format on the VCOM Library – on LWW Osteopathic Medicine Collection

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 10 Aquifer Internal Medicine cases from the Required Curriculum. Ten (10) cases must be completed during the IM 2 rotation (the Introductory case does not count as one of your cases). Please note: To get full credit for each case you complete, please be sure to click to the page at the end of the case that states “Summary of Your Case Session” in the upper left hand corner. 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.

<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 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 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.

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 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
    - Student 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 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. 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

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

1. Hypertension
Reading Assignment:
- IM Essentials Text
  - Chapter 12 (Endocrinology and Metabolism: Adrenal Disease)
  - Chapter 31 (General Internal Medicine: Hypertension)
Online Case: Aquifer Internal Medicine Case 6
Learning Objectives:
- i. Identify the rule of 10’s for pheochromocytoma including how to diagnose and therapy prior to surgery.
- ii. Differentiate for the most common causes of secondary hypertension, including associated characteristics with presentation.
- iii. Classify the stages of hypertension in adults:
  - a. Normal
  - b. Prehypertension
  - c. Stage 1
  - d. Stage 2
- iv. Distinguish between Hypertensive Urgency and Emergency.
- v. Recognize the various drug classes of Antihypertensive Medications, indications, contraindications, and side effects.
- vi. Identify patient lifestyle modifications to reduce risk of end-organ damage.

2. Depression
Reading Assignment:
- IM Essentials Text
  - Chapter 11 (Endocrinology and Metabolism: Thyroid Disease)
  - Chapter 37 (General Internal Medicine: Depression)
Online Case: Aquifer Internal Medicine Case 5
Learning Objectives:
- i. Recall common screening techniques for identifying depression including the 2 question method and SIG E CAPS.
- ii. Develop a differential diagnosis of major depression including:
  - a. Major depressive disorder
  - b. Dysthymia
  - c. Minor/subsyndromal depression
  - d. Situational adjustment reaction with depressed mood
  - e. Bipolar disorder
f. Seasonal affective disorder
g. Premenstrual dysphoric disorder
h. Grief reaction
i. Dementia
j. Hypothyroidism
k. Medication effects

iii. Recognize treatment goals and appropriate follow-up for patients with depression.
iv. Identify major barriers to treatment of depression.
v. Assess the risk for suicide by identifying risk factors and protective measures.
vi. Recognize when to obtain consultation of a psychiatrist.
vii. Indicate appropriate follow-up for managing major depression with suicidal features.
viii. Recognize the symptoms, physical exam findings and laboratory diagnosis of hypothyroidism.
ix. Define Graves disease and identify the type of dysfunction it causes.
x. Define “apathetic thyrotoxicosis” and identify the features that differentiate it from other forms of hyperthyroidism
xi. Recall the evaluation of hyperthyroidism and identify the best test to differentiate between thyrotoxicosis due to hyperthyroidism versus thyroiditis.

xii. Identify the treatment of hypothyroidism and hyperthyroidism and the potential side effects.

3. Diabetes Mellitus (outpatient)

Reading Assignment:
- IM Essentials Text
  - Chapter 13 (Endocrinology and Metabolism: Diabetes Mellitus)
  - Chapter 32 (General Internal Medicine: Dyslipidemia)
  - Chapter 33 (General Internal Medicine: Obesity)

Online Case: Aquifer Internal Medicine Case 8

Learning Objectives:

i. Recall the normal physiological function of the endocrine systems, especially the insulin, glucagon and incretin systems effect on regulation of carbohydrates, lipids, protein, water and electrolytes, as well as energy production and utilization in the body.

ii. Identify the pathophysiologial mechanism/defects associated with type I and type II diabetes.

iii. Define how diabetes is determined by laboratory data and glucose testing.

iv. Interpret and apply clinical and diagnostic findings to make a diagnosis of glucose intolerance, metabolic syndrome, diabetes, as well as be able to identify complications and natural history for progression of these conditions, etc.

v. Identify the role/contributions of genetic history, obesity, metabolic syndrome, and lack of exercise in development and advancement of diabetes.

vi. Define the epidemiology of diabetes in the USA and worldwide.

vii. Classify the multiple pharmacological agents for the treatment of type I and type II diabetes, their indications, complications, interactions, and limitations.

viii. Categorize the different types of Insulin including rapid, short, intermediate, and long acting as to onset, peak and duration of therapy.

ix. Recognize the relationship between obesity and diabetes, including associated anti-diabetic drugs and their relationship.

x. Identify the guidelines for hyperlipidemia in relationship to diabetes and goals of therapy.

xi. Interpret and identify the appropriate diagnostic and treatment evaluations of patients with complications common to patients with type I and type II diabetes (eye, renal, extremities, fertility, etc.).

xii. Identify the causes and outcomes of complications of type I and type II diabetes.

xiii. Identify co-existing socio-economic or genetic factors impacting the patient with type I and type II diabetes.

xiv. Recognize the dietary and exercise recommendations for the patient with diabetes.
xv. Develop an appropriate treatment plan for the patient with controlled and uncontrolled diabetes, including process to prevent progression or complications common to the conditions, i.e. ketoacidosis, hyperosmotic, hyperglycemic encephalopathy or coma, dyslipidemia, CAD, cerebral vascular disease, pancreatitis.

xvi. Recognize the value of a team approach to the management of diabetes.

xvii. Recognize the impact diabetes mellitus has on a patient’s quality of life, well-being, ability to work, and their family.

xviii. Identify key osteopathic diagnostic and treatment principles associated with the conditions and be able to apply them to the patient.

4. Healthy Patient

Reading Assignment:
- IM Essentials Text
  - Chapter 15 (Endocrinology and Metabolism: Osteoporosis)
  - Chapter 81 (Oncology: Lung Cancer)
  - Chapter 82 (Oncology: Breast Cancer)
  - Chapter 83 (Oncology: Colorectal Cancer)
  - Chapter 84 (Oncology: Cervical Cancer)
  - Chapter 99 (Rheumatology: Osteoarthritis)

Online Case: Aquifer Internal Medicine Case 13

Learning Objectives:

i. Recall the goals of screening for osteoporosis while understanding the risk factors that are modifiable. Recognize the DEXA scan as a screening tool and how to interpret a positive result.

ii. Recognize the indications for measuring Bone Mineral Density.

iii. Identify the common causes of secondary osteoporosis.

iv. Recognize the pharmacologic and non-pharmacologic therapies available for treatment of osteoporosis with particular attention to drug classes, how they work and when to use them.

v. Recognize the screening guidelines for lung cancer in current and former smokers.

vi. Identify paraneoplastic syndromes associated with lung cancer.

vii. Recognize the basic treatment protocols for lung cancer based on stage.

viii. Identify the risk factors for breast cancer including the “main” factor.

ix. Identify the prevention strategies available for women at high risk of breast cancer.

x. Recall the current screening guidelines for breast cancer, including evaluation of breast abnormalities based on patient age and abnormality characteristics.

xi. Identify the guidelines for colon cancer screening in average risk and high risk patients, including those with a family history of colon cancer.

xii. Recognize the screening guidelines for cervical cancer.

xiii. Identify the common symptoms of cervical cancer, including the “terrible triad”.

xiv. Identify the common conditions that are in the differential diagnosis for cervical cancer and how these may be evaluated.

xv. Recognize the recommendations and utility of the HPV vaccine in prevention of cervical cancer.

xvi. Define osteoarthritis in terms of symptomatology and x-ray findings.

xvii. Differentiate conditions which may mimic osteoarthritis and its symptoms as well as secondary causes of osteoarthritis.

xviii. Identify the pharmacologic options for treating osteoarthritis including contraindications and side effects of medicines with particular attention to NSAIDs.
5. Epidemiology
Reading Assignment:
- IM Essentials Text
  - Chapter 28 (General Internal Medicine: Diagnostic Decision Making)
  - Chapter 29 (General Internal Medicine: Therapeutic Decision Making)
  - Chapter 30 (General Internal Medicine: Health Promotion, Screening, and Prevention)

Learning Objectives:
  i. Define and interpret the following testing principles. Recognize how each affects the utility of a given test and its ability to evaluate for the presence or absence of disease, assisting with clinical decision making.
    a. Sensitivity
    b. Specificity
    c. Positive predictive value
    d. Negative predictive value
    e. Likelihood ratio
  ii. Relate and breakdown the concept of continuous variables in clinical tests.
  iii. Predict the effects of increasing and decreasing the abnormal cut-off values for a given test in terms, specifically in terms of the resulting sensitivity and specificity.
  iv. Recognize the importance of a pretest probability when applying test results to patient care.
  v. Identify the principles of screening which are widely accepted.
  vi. Differentiate between lead-time bias and length bias as they pertain to screening tests and how they make a test appear to perform better than it actually does.

6. Dysuria
Reading Assignment:
- IM Essentials Text
  - Chapter 60 (Infectious Disease Medicine: Urinary Tract Infection)
  - Chapter 61 (Infectious Disease Medicine: Sexually Transmitted Diseases)
  - Chapter 72 (Nephrology: Nephrolithiasis)

Online Case: Aquifer Internal Medicine Case 14
Learning Objectives:
  i. Recall the normal structure and physiological function of the renal and urinary tract systems.
  ii. Identify pathophysiological mechanism of common disease conditions of the renal and urinary tract systems that are associated with dysuria, pain, hematuria, and nephrolithiasis (list below).
  iii. Indicate the appropriate evaluation of patients with complaints common to the systems as listed below.
  iv. Interpret and apply clinical and diagnostic findings for treatment of patient with the conditions listed below.
  v. Identify the common causes of dysuria, pain, hematuria, renal failure, in the adult patient.
  vi. Identify the key diagnostic criteria for each of the conditions detailed below.
  vii. Identify and relate co-existing socio-economic or genetic factors contributing to the patient with dysuria, pain, hematuria, and nephrolithiasis.
  viii. Develop an appropriate treatment plan for the patient with each of the conditions detailed below.
  ix. Identify key osteopathic diagnostic and treatment principles associated with the conditions and apply them to the patient.
  x. Recognize the following conditions:
    a. Cystitis
    b. Urethritis
    c. Pyelonephritis
    d. Urethral syndrome
    e. Glomerulonephritis
    f. Nephrolithiasis
xi. Recall the strategies that can be used for the prevention of STDs.

xii. Recognize the risk factors for acquiring STDs.

xiii. Recall the diseases that should be screened for in patients engaged in high risk sexual behaviors including unprotected intercourse.

xiv. Identify the clinical features of the common STDs and those which cause genital ulcers.

7. Cough, URI, Tobacco Use

Reading Assignment:
- IM Essentials Text
  - Chapter 35 (General Internal Medicine: Approach to Cough)
  - Chapter 36 (General Internal Medicine: Smoking Cessation)
  - Chapter 56 (Infectious Disease Medicine: Common Upper Respiratory Infections)

Online Case: Aquifer Internal Medicine Case 15

Learning Objectives:

i. Define acute cough and familiarize with associated conditions including viral URI, Influenza, Bordetella pertussis, and bacterial pneumonias.

ii. Recognize the association of cough with asthma.

iii. Categorize chronic cough with particular attention to history, differential diagnosis, and investigations.

iv. Identify chronic diseases and cancers associated with long-term tobacco abuse.

v. Contrast the pathophysiology and symptomatology of allergic rhinitis and the clinical features that may help differentiate it from the common cold and acute sinusitis.

vi. Relate the pathophysiological mechanism of common disease conditions of the pulmonary and upper respiratory system that are associated with cough, dyspnea or orthopnea, wheeze, fever, productive sputum, infection, etc.

vii. Categorize the differential diagnosis of Upper Respiratory Infection, highlighting the relative frequencies of viral and bacterial etiologies.

viii. Predict the testing and treatment guidelines for Adult Pharyngitis.

ix. Recognize treatment for URIs and the major side effects/contraindications of treatments including: decongestants, non-selective antihistamines, mucolytics, cough suppressants, and pain relievers, and determine when to prescribe antibiotics and select the most appropriate antibiotic if warranted.

8. Dermatology

Reading Assignment:
- IM Essentials Text
  - Chapter 46 (General Internal Medicine: Common Dermatologic Disorders)
  - Chapter 86 (Oncology: Skin Cancer)

Online Case: Aquifer Internal Medicine Case 17

Learning Objectives:

i. Classify dermatologic lesions in terms of description, definition and be able to give an example.

ii. Distinguish common bacterial skin infections in terms of presentation such as cellulitis, folliculitis, furuncles, impetigo, and ecthyma.

iii. Recognize the prevalence of MRSA (methicillin resistant Staph Aureus) and various treatments available for skin-related infections.

iv. Classify various fungal infections in terms of body location by name, location, common organisms and treatment options.

v. Recognize the pathophysiology of shingles as well as treatment options for sequelae and indications for vaccination.

vi. Identify and indicate the risks for and treatments of the following common rashes:
   a. Atopic Dermatitis
   b. Contact Dermatitis
c. Venous Stasis Dermatitis
d. Seborrheic Dermatitis
e. Psoriasis
f. Erythema Multiforme
g. Cutaneous Drug reactions
h. Pityriasis rosea
vii. Recognize the various signs and symptoms of common acneiform lesions and treatment options as they pertain to acne vulgaris, acne rosacea, and perioral dermatitis.
viii. Recognize the signs, symptoms and risk factors for urticaria including treatment options.
ix. Recognize the signs, symptoms and treatments for infestations such as scabies and pediculosis.
x. Recognize the various benign growths and treatment options
xi. Recognize the common cutaneous manifestations of Internal Disease such as HCV, sarcoidosis, Tuberculosis, malignancies and systemic lupus erythematosus.
xii. Identify methods of prevention of skin cancer as well as screening recommendations and techniques in term of at risk populations.
xiii. Distinguish melanoma in terms of the ABCDE method. Recognize the major subtypes of melanoma and how they differentiate from non-melanotic lesions.
xiv. Differentiate basal cell carcinomas from non-basal cell lesions in the differential.
xv. Recognize treatment options for skin cancers with particular attention to melanoma and surgical treatment.

9. Geriatrics

Reading Assignment:
- IM Essentials Text
  - Chapter 43 (General Internal Medicine: Comprehensive Geriatric Assessment)
  - Chapter 76 (Neurology: Altered Mental Status, Dementia, and Delirium)

Online Case: Aquifer Internal Medicine Case 18

Learning Objectives:
   i. Relate the proper history and physical exam of the geriatric pt with attention to their functional ability and cognitive function.
   ii. Identify and familiarize at risk conditions and behaviors in the elderly population including depression, sensory impairment, falls, urinary incontinence, driving, and pressure ulcers.
   iii. Recognize the end of life issues including: goals of care, living wills, advanced directives and Health care power of attorney.
   iv. Define dementia and classify various differential diagnosis in relation to dementia.
   v. Apply tools such as; MMSE (Mini Mental State Exam) and MoCA (Montreal Cognitive Assessment) for screening and diagnosis of dementia.
   vi. Distinguish between delirium and dementia in terms of signs and symptoms.
   vii. Identify the laboratory and radiologic workup associated with dementia.
   viii. Recognize up to date treatment options for dementia both pharmacologic and non-pharmacologic and their associated complications or limitations.

10. Anemia

Reading Assignment:
- IM Essentials Text
  - Chapter 47 (Hematology: Anemia)
  - Chapter 48 (Hematology: Sickle Cell Disease)
  - Chapter 49 (Hematology: Thrombocytopenia)
  - Chapter 52 (Hematology: Bleeding Disorders)

Online Case: Aquifer Internal Medicine Case 19

Learning Objectives:
   i. Define anemia in terms of peripheral blood smear findings and their association.
ii. Recall the diagnostic characteristics and etiologies of the anemias listed below. Identify the features of patients most commonly identified with the following anemias.
   a. Macrocytic
   b. Microcytic
   c. Normochromic

iii. Differentiate the pathophysiologic causes of the following anemias:
   a. Thalassemia
   b. Sickle cell anemia
   c. Pernicious anemia
   d. Myleoplastic anemia
   e. Hemolytic anemia

iv. Recognize the common causes associated with prolonged bleeding times both diseases and medications.

v. Differentiate between primary and secondary hemostasis disorders.

vi. Predict DIC (disseminated intravascular coagulation) based on physical exam findings and lab data.

vii. List the associated major complications of sickle cell disease related to underlying pathophysiology.

viii. Recognize treatment options for sickle cell disease in the acute crisis and chronic maintenance stages.

ix. Classify thrombocytopenia in terms of diseases that cause decreased platelet production, and accelerated platelet destruction.

x. Define ITP (Idiopathic Thrombocytopenic Purpura) in terms of causes, lab testing and various treatment modalities depending on platelet counts.

xi. Define Heparin induced thrombocytopenia in terms of pathophysiology.

xii. Define thrombotic thrombocytopenic purpura and the hemolytic syndrome in terms of associated disorders, clinical signs and symptoms, lab tests and treatment options. Recognize the association of O157:H7 and HUS (Hemolytic Uremic Syndrome).

11. HIV

Reading Assignment:
- IM Essentials Text
  - Chapter 41 (Approach to Lymphadenopathy)
  - Chapter 55 (Infectious Disease Medicine: Approach to Fever)
  - Chapter 62 (Infectious Disease Medicine: HIV Infection)

Online Case: Aquifer Internal Medicine Case 20

Learning Objectives:

i. Define fever of unknown origin (FUO).

ii. Predict etiologies of fever in normal hosts and in special populations (e.g., patients with human immunodeficiency virus [HIV], recent travel or immigration, intravenous drug use).

iii. Develop an appropriate treatment plan for patient with FUO.

iv. Define features of benign vs. pathologic lymphadenopathy.

v. Relate the Centers for Disease Control’s (CDC’s) criteria to diagnose AIDS.

vi. Identify the principles of antiretroviral therapy, including importance of regimen adherence.

vii. Describe the relationship between the CD4+ lymphocyte count and risk of opportunistic infection.

viii. Recognize common HIV-associated infections.

ix. Identify appropriate diagnostic tests for HIV-positive patient presenting with fever.
12. **Cancer**

   **Reading Assignment:**
   - IM Essentials Text
     - Chapter 15 (Endocrinology and Metabolism: Osteoporosis)
     - Chapter 34 (General Internal Medicine: Approach to Low Back Pain)
     - Chapter 44 (General Internal Medicine: Palliative Care)
     - Chapter 50 (Hematology: Hematopoietic Stem Cell Disorders)
     - Chapter 51 (Hematology: Multiple Myeloma)
     - Chapter 85 (Oncology: Prostate Cancer)

   **Online Case:** Aquifer Internal Medicine Case 27

   **Learning Objectives:**
   i. Recognize red flags in history of back pain.
   ii. Identify helpful techniques to use when it is necessary to give bad news to a patient.
   iii. Devise the evaluation and management of fever in a neutropenic patient.
   iv. Recognize the lab and x-ray findings that are diagnostic of Multiple Myeloma (MM).
   v. Identify the common adult leukemias and their typical CBC findings.
   vi. Recall the current recommendations for prostate screening, including the limitations of the tests used.
   vii. Relate the subsequent steps of the evaluation of an abnormal DRE (Digital Rectal Exam) or PSA (Prostate Specific Antigen) test.
   viii. Recognize the treatment strategies for prostate cancer, including androgen deprivation therapy.
   ix. Recall the World Health Organization’s (WHO) three step analgesic ladder for chronic pain control.

13. **Tuberculosis**

   **Reading Assignment:**
   - IM Essentials Text
     - Chapter 42 (General Internal Medicine: Approach to Involuntary Weight Loss)
     - Chapter 58 (Infectious Disease Medicine: Tuberculosis)
     - Chapter 90 (Pulmonary Medicine: Approach to Dyspnea)
     - Chapter 91 (Pulmonary Medicine: Pleural Effusion)

   **Online Case:** Aquifer Internal Medicine Case 29

   **Learning Objectives:**
   i. Distinguish the common causes of tachypnea.
   ii. Recall indications for thoracentesis.
   iii. Differentiate transudative and exudative effusions based on laboratory findings.
   iv. Relate the indications for performing a purified protein derivative (PPD) test or IGRA and how results should be interpreted given a range of clinical scenarios and patient histories.
   v. Recall the principles of treatment of active and latent tuberculosis.
   vi. Identify prevention and isolation strategies for the patient with active tuberculosis.
   vii. Recall the common causes of involuntary weight loss.

14. **Musculoskeletal Complaints**

   **Reading Assignment:**
   - IM Essentials Text
     - Chapter 63 (Infectious Disease Medicine: Osteomyelitis)
     - Chapter 97 (Rheumatology: Approach to Joint Pain)
     - Chapter 98 (Rheumatology: Approach to Knee and Shoulder Pain)
     - Chapter 99 (Rheumatology: Osteoarthritis)
     - Chapter 100 (Rheumatology: Crystal-Induced Arthritis)
     - Chapter 101 (Rheumatology: Infectious Arthritis)
Online Cases: Aquifer Internal Medicine Cases 31 and 34

Learning Objectives:

i. Recall the various etiologies of lower back pain.
ii. Recognize signs and symptoms of the various causes of back pain.
iii. Interpret physical exam findings, including neurologic and specific range of motion testing of the lower extremities.
iv. Define indications for laboratory and radiographic studies in a patient with joint and low back pain.
v. Generate a systematic approach to the evaluation of joint pain.
vi. Identify typical presentations of common causes of knee pain.
vii. Recall indications for and risks of arthrocentesis.
viii. Identify the common risk factors and bacterial agents that cause osteomyelitis.
ix. Interpret synovial fluid assays to guide the diagnosis of joint effusion.
x. Identify nonmedicinal symptomatic treatment for joint pain.

15. Rheumatology

Reading Assignment:
- IM Essentials Text
  - Chapter 102 (Rheumatology: Rheumatoid Arthritis)
  - Chapter 103 (Rheumatology: Systemic Lupus Erythematosus)
  - Chapter 104 (Rheumatology: Spondyloarthritis)
  - Chapter 105 (Rheumatology: Other Rheumatologic Conditions)
  - Chapter 106 (Rheumatology: Systemic Vasculitis)

Online Cases: Aquifer Internal Medicine Cases 32 and 35

Learning Objectives:

i. Formulate an approach to patients with possible rheumatologic disease.
ii. Identify typical clinical and laboratory findings of rheumatoid arthritis, systemic lupus erythematosus (SLE), dermatomyositis, the spondyloarthropathies, and systemic vasculitis.
iii. Compare and contrast the various causes of inflammatory polyarthritis.
iv. Identify extra-articular manifestations of Rheumatoid arthritis.
v. Formulate treatment for a patient with Rheumatoid arthritis.
vi. Classify the types or glomerulonephritis seen in SLE.
vii. Compare and contrast fibromyalgia with RA, poly myalgia rheumatica and ankylosing spondylitis.
viii. Recognize the common clinical and lab findings in vasculitis; including Giant Cell arteritis and Behcet's disease.

16. Obesity/Dyslipidemia

Reading Assignment:
- IM Essentials Text
  - Chapter 32 (General Internal Medicine: Dyslipidemia)
  - Chapter 33 (General Internal Medicine: Obesity)

Online Case: Aquifer Internal Medicine Case 16

Learning Objectives:

i. Relate the health implications of obesity.
ii. Assess risk factors for obesity-related changes.
iii. Distinguish physical findings of hypercholesterolemia.
iv. Identify etiologies of primary and secondary dyslipidemias.
v. Relate screening recommendations for dyslipidemias in adults.
vi. Recognize the management of common dyslipidemias, including therapeutic lifestyle changes and pharmacologic therapies.
vii. Predict the daily caloric requirement to maintain weight and daily caloric requirement for weight loss.

17. Neurology Topics

Reading Assignment:
- IM Essentials Text
  - Chapter 75 (Neurology: Stroke and Transient Ischemic Attack)
  - Chapter 77 (Neurology: Peripheral Neuropathy)
  - Chapter 78 (Neurology: Approach to Selected Movement Disorders)

Learning Objectives:
  i. Identify the most common hyperkinetic movement disorders seen in clinical practice.
  ii. Distinguish the clinical aspects of Parkinson disease and parkinsonism and differentiate them from essential tremor.
  iii. Select the typical drugs used to treat Parkinson’s and their side effects
  iv. Define stroke and TIA (Transient Ischemic Attack).
  v. Identify common risk factors for stroke.
  vi. Recall appropriate laboratory and imaging studies to evaluate the acute stroke patient.
  vii. Recall acute stroke therapy including thrombolysis and infer relative and absolute contraindications.
  viii. Classify the peripheral neuropathies by distribution pattern and their typical etiologies.
  ix. Identify common drugs and toxins that cause acquired peripheral neuropathies.
  x. Identify common drugs to treat peripheral neuropathy.

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.