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Student Research and Scholarly Activity and Research (Elective) Rotations during 3rd and 4th year

Students are encouraged to participate in research or other types of scholarly activity either as an elective rotation or while completing regular rotations. The federal Common Rule defines research as “a systematic investigation including research development, testing and evaluation designed to develop or contribute to generalizable knowledge”. (Source: Code of Federal Regulations 45CFR46.102). Other types of scholarly activity include Quality Assurance/Quality Improvement (QA/QI) projects, case reports and literature reviews. Students should consult with their Regional Assistant Dean to determine which types of scholarly activity may qualify as an elective rotation. Regulatory and approval processes will differ depending on the type of project as described below.

Students involved in research projects or other scholarly activity must work with a WVSOM employee who will help guide the student through the approval process and ensure that required permissions are in place prior to starting the work, even if the project is not being done as part of an elective rotation. This employee may or may not be the Principal Investigator (PI). For example, if a student works with a PI at a remote clinical facility, the PI at that facility is entirely responsible for the proper conduct of the study. In consultation with the PI, the WVSOM Regional Assistant Dean or other Dean-designated employee will assist the student in obtaining required institutional permissions and will monitor the educational aspects if the project is being done as an elective rotation. Research/Scholarly electives may only be taken in the second six months of the third year during an elective or during the fourth year. All requirements outlined in this document apply to both third and fourth year students who are on-campus or off-campus. No more than a total of eight (8) weeks of elective rotations and/or vacation time may be utilized for a research elective. (Refer to Policy E-16)

Approval Process Overview

The approval process for scholarly activity depends on the nature of the project (summarized in the diagram below). The first step is to determine if the project meets the regulator definition of research. Guidance on determining if a project is research or other, non-research scholarly activity such as case reports or QA/QI can be found at the end of this section and on the ORSP web page. The IRB may be consulted for assistance in making this determination. Steps that must be taken for approval of research projects and other scholarly activity are described below.
Research Project

Yes

Submit ORSP-1 Form to the Regional Assistant Dean and ORSP@osteo.wvsom.edu.

No

Submit Student Non-Research Scholarly Activity Form to the Regional Assistant Dean and ORSP@osteo.wvsom.edu.

No

Upon review, the ORSP will provide the student and Regional Assistant Dean with guidance on required approvals (IRB, IACUC, etc.).

Yes

Written confirmation from the Regional Assistant Dean or ORSP that the project is not research.

Yes

Except for literature review projects, the student must consult with the Privacy or Compliance Officer of the facility where the scholarly activity is being done to ensure HIPAA compliance and obtain necessary approvals or authorizations.
Case reports involving 3 or fewer cases and literature reviews are not considered to be research for regulatory purposes. Refer to the guidance document available on the ORSP web page (https://www.wvsom.edu/Research/) for additional information on the differences between QA/QI and research.

These forms are available on the ORSP web pages at https://www.wvsom.edu/Research/orsp-forms

Contact the WVSOM IRB at irb@osteo.wvsom.edu if assistance in making this determination is needed or to request an official non-human subjects research determination letter.

Timely preparation of all required materials should begin well in advance of project initiation to ensure review and approval by the appropriate Regional Assistant Dean, the PI or supervisor and other administrative departments as needed based on the nature of the project. It is recommended that you begin the approval process at least 60 days prior to the expected start date.

Approval Process for Research Projects

1. A project initiation request form (ORSP-1) must be submitted to the ORSP (ORSP@osteo.wvsom.edu) for all research projects. For projects on which the PI is a WVSOM employee and ORSP approval is already in place, the PI can simply request to the ORSP that the student be added to the study team. For projects on which the PI is not a WVSOM employee, submit the Project Initiation Request-form (ORSP-1) to ORSP@osteo.wvsom.edu, including all requested details. The form must be approved and signed by the Principal Investigator and the WVSOM liaison (typically the Regional Assistant Dean). WVSOM students may not serve as the Principle Investigator.

2. Following review by the ORSP, students are notified of next steps, including referral for IRB approval and CITI training (which must be completed prior to IRB approval of the project). IRB approval may require a reliance agreement with a remotely located IRB as explained below. Projects that do not involve human subjects may require other approvals such as HIPAA authorization, Animal Care and Use Committee approval or Biosafety Committee approval. Guidance regarding necessary approvals will be provided by the ORSP. Once a student has completed all the required trainings/approvals, an email stating such will be provided to the student and the WVSOM mentor or PI.

3. If the research is being done as an elective rotation, a Research Plan must then be reviewed and approved by the Regional Assistant Dean. The completed Research Plan must be submitted to your Regional Statewide Campus a minimum of 30 days prior to initiation of the project.
The Research Plan must include:

a. The name of the Principal Investigator with contact address, phone and e-mail;
b. A copy of the ORSP-1 form and ORSP approval;
c. A copy of IRB or other approval letters or exempt determination letter;
d. A detailed description of the student’s role in the project; and
e. Written acceptance of the student into the project by the PI.

All research involving human subjects must be reviewed by the WVSOM IRB, which will make a determination regarding approval and assess whether an IRB agreement is needed with any local IRB. Such an agreement may be needed if a student plans to work under the supervision of a PI who has received IRB approval from a local IRB. If this is the case, then a reliance agreement must be in place between WVSOM’s IRB and the local IRB. Note: Any such agreement must be in place before the student may begin working on the study.

QA/QI Projects and other Scholarly Activity

A Non-Research Scholarly Activity form must be submitted to the Regional Assistant Dean who will confirm, in consultation with the ORSP or IRB as needed, that the project is not classified as research. The student will be notified in writing of this assessment. An official non-human subjects research determination letter may be requested of the IRB by checking the correct box on this form. These letters are required by some journals for publication and must be written prior to initiation of the study. If the project is determined to be research, the student must follow the procedures described in the above section. If the project is not classified as research, the student must still consult with the Privacy Officer of the facility where the project is being done to obtain any necessary authorizations or waivers regarding use of private health information data.

For scholarly activity being done as an elective rotation, a project plan must then be reviewed and approved by the Regional Assistant Dean. This plan must be submitted a minimum of 30 days prior to initiation of the project and must include

a. a copy of the Non-Research Scholarly Activity Form
b. A detailed description of the project and the student’s role in the project
c. For projects involving use of patient data, a copy of any necessary agreements, authorizations, waivers and/or a letter from the facility Privacy Officer approving use of data for the project.
d. Written agreement from the supervisor/mentor to oversee the student project.
As this is an elective portion of the WVSOM program, the following must be understood and agreed to:

• All expenses associated with a special elective or other scholarly activity are borne by the student, i.e., travel, meals, board, and required or optional materials.
• Proof of active health insurance is required.
• Scheduled rotations will not be revised to accommodate a special elective.
• Elective rotations must be overseen by a DO or MD for grading.
• For elective rotations, the final data, article or report must be submitted to the Regional Assistant Dean and the Associate Dean for Predoctoral Clinical Education within 6 weeks of completion of the rotation. For research projects, a copy must also be sent to the Associate Dean for Research and Sponsored Programs who must approve it in order for the student to receive credit for the rotation.
• The term “research” should not be used in any presentations or publications regarding QA/QI projects, case studies or other non-research scholarly activity.
• Students can consult with the Principal Investigator or Associate Dean for Research and Sponsored Programs to inquire about potential funding or travel expenses to present scholarly activity. Potential funding through WVSOM is available only if the ORSP has approved the project in advance of it being undertaken, all permissions for travel are in place, and your SWC Dean has signed off on the project and travel.

Summary Checklist for Research or Scholarly Activity Elective Rotations

Submit the following documentation to the Regional Assistant Dean:

A. Copy of the ORSP-1 or Student Non-Research Scholarly Activity form and letters of approval
B. Copy of any additional necessary approvals (IRB approval, HIPAA authorization, etc.)
C. Verification/evidence that the PI has approved student participation in the research project and added the student to the IRB protocol when relevant. For other types of scholarly activity, verification that a supervisor/mentor has agreed to oversee the project
D. Copy of the research protocol or project plan
E. A one-page summary of the educational benefit of the rotation and a signed Elective/Selective Rotation (ESR) Form approving the scholarly activity with the evaluation form.

For elective rotations, a final article or report must be submitted to the Regional Statewide Campus Office upon completion in order to receive academic credit.
For research projects, a copy of the report must also be forwarded to the Associate Dean for Research and Sponsored Programs in order to receive credit.
1. PURPOSE
The purpose of this guidance is to assist faculty, students and other personnel on the definition of Research versus Quality Assurance/Quality Improvement (QA/QI). In addition, the guidance provides resources to support the development of QA/QI projects. Whenever there is uncertainty as to whether a...
project is considered to be research or QI, the project leader should request guidance from the WVSOM Institutional Review Board (IRB). The IRB cannot retroactively approve research.

It is the responsibility of the project leader who initiates a project to determine if it is research or QA/QI. Research projects must comply with specific policies and regulations designed to protect human subjects and privacy rights. However, it may be difficult for a project leader to determine if his or her project is research or QA/QI. Since this determination may have a significant impact on the project design, procedures, and regulatory compliance, the project leader should not hesitate to ask the IRB for guidance. There are serious consequences for not following WVSOM research policies and procedures and federal regulations when conducting research.

2. APPLICABILITY
This guidance applies to all quality assurance/quality improvement projects undertaken by staff, faculty or students at WVSOM.

3. HOW TO USE THIS GUIDE
The first section provides definitions for Research and Quality Improvement. The second section provides certain characteristics typically associated with research and QI projects. Once you review the definitions and characteristics, you should be able to determine the appropriate category for your project. If you determine that the project is similar to both definitions, the project is research.

Section 1. Definitions

What is research? The federal Common Rule defines research as “a systematic investigation including research development, testing and evaluation designed to develop or contribute to generalizable knowledge”. (Source: Code of Federal Regulations 45CFR46.102).

What is Quality Improvement (QI)? Quality improvement is defined as “a systematic pattern of actions that is constantly optimizing productivity, communication, and value within an organization in order to achieve the aim of measuring the attributes, properties, and characteristics of a product/service in the context of the expectations and needs of customers and users of that product. The Institute of Medicine (IOM) defines quality in health care as a direct correlation between the level of improved health services and the desired health outcomes of individuals and populations. Source: Institute of Medicine

Section 2: Characteristics of Research Projects and Quality Improvement Projects

<table>
<thead>
<tr>
<th>Research</th>
<th>Quality Improvement</th>
</tr>
</thead>
</table>
Research projects must meet IRB requirements for protection of human subjects. Researchers conducting research must also meet HIPAA and FERPA requirements regarding authorization to use or disclose protected health information.

<table>
<thead>
<tr>
<th>Characteristics of Research:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• One of the main goals of the project is to advance general knowledge in the academic, scientific, or professional community.</td>
</tr>
<tr>
<td>• The project will have a specific hypothesis or research question.</td>
</tr>
<tr>
<td>• The project involves a comprehensive review of relevant literature.</td>
</tr>
<tr>
<td>• The project will be conducted using a research design that will lead to scientifically valid findings. Elements of a research design include: control groups; random selection of subjects, statistical tests, sample design, etc.</td>
</tr>
<tr>
<td>• Most of the patients/subjects are not expected to derive a personal benefit from the knowledge gained.</td>
</tr>
<tr>
<td>• One goal of the project is to generate, evaluate or confirm an expletory theory or conclusion and invite critical appraisal of that conclusion by peers through presentation and debate in public forums.</td>
</tr>
</tbody>
</table>

Quality Improvement projects are not covered by IRB requirements. Members of the workforce are allowed by HIPAA to use protected health information for Quality Improvement projects without patient authorization.

<table>
<thead>
<tr>
<th>Characteristics of Quality Improvement:</th>
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</thead>
<tbody>
<tr>
<td>• The project identifies specific services, protocols, clinical or educational practices, or clinical processes or outcomes within a department, clinical program or facility for improvement.</td>
</tr>
<tr>
<td>• The project team may review available literature and comparative data, or clinical programs, practices or protocols at other institutions in order to design improvement plan, but do not plan a full comprehensive literature review.</td>
</tr>
<tr>
<td>• The project design uses established quality improvement methods (such as DMAIC, PDSA cycle) aimed at producing change within a health center, hospital and/or community setting.</td>
</tr>
<tr>
<td>• The project design does not include sufficient research design elements to support a scientifically valid finding.</td>
</tr>
<tr>
<td>• Most of the patients who participate in the project are expected to benefit from the knowledge gained.</td>
</tr>
<tr>
<td>• The project does not impose any risk or burden to individuals.</td>
</tr>
<tr>
<td>• The main goal of the project is to improve patient care, clinical care or services, and/or educational processes.</td>
</tr>
</tbody>
</table>

### 4. WORKING ON QUALITY IMPROVEMENT PROJECTS WITH CLINICS, HOSPITALS AND OTHER COMMUNITY ORGANIZATIONS

Contacting a clinical mentor or faculty member and also the health care provider (clinic, hospital, social-service agency administrator) where you will be completing a QA/QI project is a good starting point. Health care providers must all meet Health Information and Patient Protection Act (HIPAA) guidelines and may have specific policy and procedure about accessing health care information at their site. They also will discuss HIPAA training requirements if applicable.
5. OTHER QUALITY IMPROVEMENT RESOURCES

http://www.carnegiefoundation.org/resources/publications/continuous-improvement-education/


http://www.squire-statement.org


*Guidance developed by WVSOM Ad Hoc Statewide Campus Research Committee in July 2016; revisions at August 2016 Committee meeting; Committee revised document in December 2016.

Stookey Rotations OLM

Students are required to complete a minimum of one “James R. Stookey” OMT rotation in each of their 3rd and 4th years. This requirement will be met using six OPP modules from the A.T. Still University series and two presentations that you can access on eMedley. The modules and presentations represent an osteopathic approach for common diagnoses that you may encounter in Family Medicine or Internal Medicine. Step by Step instructions to access the modules and presentations on eMedley are below:

1. Go to Applications
2. Go to Educate
3. Go to Sections
4. Type/Select 005-1: Statewide Campus Information CO 2020 & CO 2021
5. Select OLM—Stookey Rotation (each presentation and module are listed)
In the 4th year, the Stookey requirement must be completed and submitted for grading no later than the end of April.

Electronic Health Record (EHR) Stookey OMT SOAP Note:

As a mandatory requirement for successful completion of your OMT Stookey Rotations you will be required to submit 1 SOAP note during your Year 3 Stookey rotation and 1 SOAP note during your Year 4 Stookey rotation on a patient encounter included on eMedley (see below for accessing). The Stookey note must be documented in the WVSOM Greenway PrimeSuites' EHR.

Step by Step instructions for completion of the assignment can be found on eMedley:

1. Go to educate
2. Go to Sections
3. Type/Select 005-1: Statewide Campus Information CO 2020 & CO 2021
4. Select OLM—Stookey Rotation
5. Open the first pdf file in the post (EHR_StookeyCase_Instructions_2020)
Internal Medicine III

Course Number: 910, 916, 917, 911, 912, 913 OLM

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents an alternate syllabus to the course.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other.

A. Introduction

This is an extension of the internal medicine rotations taught during the student’s third year. It is expected that the student has grasped the basics of the earlier medicine experience and is now adequately prepared to devote time to improving these skills and becoming more involved with the diagnosis and treatment of conditions commonly seen by the general internist and subspecialist.

B. Course (Rotation) Objectives and Core Competencies

1. Medical Knowledge

   a. The student will be able to demonstrate understanding of patient presentation and pathophysiology of common presenting complaints seen in the adult patient.
   b. The student will demonstrate the ability to evaluate and develop a differential diagnosis for each of the following symptoms/conditions:

      • Chest Pain
      • Syncope
      • Edema
      • Anemia
      • Fatigue
      • Headache
      • Cough
      • Shortness of Breath
      • Fever
      • Abdominal Pain
      • GI bleed
      • Constipation
      • Diarrhea
      • Dizziness
      • Back Pain
      • Joint Pain
      • Rash
c. The student will demonstrate an understanding of the basic principles and current recommendation for adult Immunizations based on ACIP or CDC guidelines. Age appropriate cancer screenings ex: Breast, Colon, Cervical, Prostate Screenings and their utilization of the USPSTF Database.

2. **Patient Care**

a. Develop a differential diagnosis appropriate to the context of the patient care setting and findings.
b. Develop an understanding of the altered physiology of the geriatric patient and aging process.

3. **Interpersonal and Communication Skills**

a. Explain how patient concerns and perspectives including cultural and religious influences impact care
b. Describe how to write the following:
   - different types of medical notes
   - SOAP notes
   - admission history & physicals
   - discharge summaries
   - procedure notes
c. Describe the capabilities of electronic health records.
d. Explain how to share diagnostic plan of care, and prognostic information with patients and families.

4. **Professionalism**

a. Summarize understanding and need for supervision, chaperones and/or assistance.
b. Explain how sensitivity, empathy and responsiveness to diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation impacts care.
c. Explain commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations.
d. Recognize that all patients in emergency situations shall receive care regardless of medical insurance coverage, ethnicity, race, or social economic status.

5. **Practice-Based Learning and Improvement**
a. Apply fundamental epidemiologic concepts.
b. Detail medical informatics, evidence-based medicine, and research.
c. Identify personal knowledge deficits, strengths, and limits through frequent self-reflection.
d. Explore the ability to locate educational resources and strengthen personal medical knowledge.
e. Explain quality improvement.

6. **System-Based Practice**

a. Recognize how patient care and professional practice affect other health care professionals, health care organizations, and the larger society.
b. Be aware of medication and treatment costs (direct patient costs/insurance coverage) and the impact of these factors on the physician's treatment plan.
c. Demonstrate understanding of HIPAA regulations and its impact on the communication of patient care information for patients.
d. Recognize the need to improve your knowledge base, develop and deliver case presentations and demonstrate these skills by utilizing the local electronic medical record, on line resources and local patient instruction protocols to provide patient instructions.
e. Understand the training and certification pathways of sub specialties.
f. Demonstrate an understanding of when it is appropriate to refer to specialists.

7. **Osteopathic Philosophy and Osteopathic Manipulative Medicine**

a. Identify common and preferred pain patterns.
b. Identify key history and physical examination findings pertinent to the working diagnosis and the differential diagnosis.
c. Use appropriate information resources to determine diagnostic evaluations for patients with common and uncommon medical problems.
d. Describe how critical pathways or practice guidelines can be useful in sequencing diagnostic evaluations for the patient.
e. Formulate a differential diagnosis based on findings from the history and physical examination of the patient.
f. Prioritize diagnostic tests and treatment (including OMT) based on sensitivity, specificity, and cost-effectiveness.
g. Apply the 4 tenets of osteopathic medicine to patient care.

C. **Study Plan**

1. Universal notes Adult Medicine Inpatient Practice exams
Go to [https://myuniversalnotes.com](https://myuniversalnotes.com). Login using your WVSOM email and password. Click on the Q in the left hand navigation bar. Then click start a quiz. Then select Clinical for the “Questions by tag.” Then click on the “Clinical Tags” box. Then put a check in the Internal Medicine box. You will then select the number of questions. You will be responsible for completing two 50 question quizzes per 4 week rotation.

Satisfactory course completion requires this monitored assignment to be finished prior to the end of the block.

2. **Universal Notes: Study Plan for Internal Medicine**

Go to [https://myuniversalnotes.com](https://myuniversalnotes.com). Login using your WVSOM email and password. Then you can use this URL: [https://web.myuniversalnotes.com/bibliography/view/3063](https://web.myuniversalnotes.com/bibliography/view/3063), or click on “2 Study Plans & Board Prep, then “Study Plans CLERKSHIPS, COMAT, NBME,” then “Study Plan for Internal Medicine.” Click on and complete the modules in the following sections.

- Renal Acid-Base and Electrolyte Disorders
- Endocrine
- Infectious Agents and Conditions

For each topic you will complete the competencies including: “Read It”, “Test It”, and “Answer It”. You will not be expected to complete the “Log It,” “Upload It,” or “Assess It” competencies.

Satisfactory course completion requires this monitored assignment to be finished prior to the end of the block.

D. **COMAT** There is no COMAT for this course

E. **Required Textbooks**


*Andreoli and Carpenter's Cecil Essentials of Medicine, 9th edition, 2016. Saunders*
F. Other Resources


*available for free on Clinical Key through the WVSOM library

The American Academy of Dermatology (AAD) has excellent free resources available for study

- The comprehensive skin exam:

  https://www.aad.org/education/basic-derm-curriculum/suggested-order-of-modules/the-skin-exam

G. Didactics and Reading assignments

1. **Complete the DocCom Essential Modules 5-8 and Questions for Reflections**
   
   To access the Doc.Com Cases visit:
   
   https://webcampus.drexelmed.edu/docom/db/read.aspxm students will log in using Email address and Password. Basic Modules include:09 Understand the Patient’s Perspective, 10 Share Information, 11 Reach Agreement, 12 Provide Closure.

2. **Step-Up to Medicine**
The foundation of your required study will be comprised of reviewing the material in *Step-Up to Medicine*.


Go to the WVSOM library page at: [https://www.wvsom.edu/library/databases-portals-eresources](https://www.wvsom.edu/library/databases-portals-eresources). In the gray box on the right of the screen you'll find a heading that says “Search Library Catalog.” In the box underneath this type Step-up to Medicine. Step up to medicine will be the first hit and will include a link to “LWW Health Library.” Click on that and you'll be in the e-book.

Step-Up to Medicine is intended to provide the content needed to help you succeed in your internal medicine rotations, a means of self-assessment for preparation for the COMAT and COMLEX examinations, and a foundation for further study. Students are expected to expound on the information when needed by utilizing other texts and resources (see sections 2.3.E and 2.3.F). This resource provides an outline of the material essential to Internal Medicine, but provides a knowledge base that may be useful in other disciplines as well, such as Family Medicine, Emergency Medicine, and Surgery.

Subjects Covered:

- Diseases of the Cardiovascular System
- Diseases of the Pulmonary System
- Diseases of the Gastrointestinal System
- Endocrine and Metabolic Diseases
- Diseases of the Central and Peripheral Nervous System
- Connective Tissue and Joint Diseases
- Disease of the Renal and Genitourinary System
- Fluids, Electrolytes, and Acid-Base Disorders
- Hematologic Diseases and Neoplasms
- Infectious Diseases
- Diseases of the Skin and Hypersensitivity Disorders
- Ambulatory Medicine

Additionally, the student is expected to set time aside each day for reading about patient encounters, preceptor assigned reading, and commonly encountered conditions.

**H. Additional Recommendations**
Cecil’s Essentials of Medicine is a foundational textbook and should be in the personal library and heavily referred to by every medical student.

I. Grading/Calculations

*Internal Medicine III*

The grade will be determined based on an average of preceptor evaluations for the course as determined by the WVSOM Office of Assessment. The online assignments must be completed or the grade will be recorded as an incomplete.

Completion of the Preceptor/Site/Course Evaluation should be done at the end of each rotation.

Please note the following:

The preceptor (if an email address is on file) will receive an email with a link to the Clinical Education Grade Form to complete before the end of the rotation. The student needs to inquire if the preceptor/supervising physician has received the email with the link to the form. If the Preceptor/Supervising physician did not receive the email, then the student must provide a paper grade form to be completed and Faxed or mailed to the SWC regional office.

The student is responsible for ensuring that the Grade form is submitted in a timely fashion and should follow-up with the preceptor, if necessary.
Internal Medicine IV

Course Number: 910, 916, 917, 911, 912, 913 OLM

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents an alternate syllabus to the course.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other.

A. Introduction

This is an extension of the internal medicine rotations taught during the student’s third year. It is expected that the student has grasped the basics of the earlier medicine experience and is now adequately prepared to devote time to improving these skills and becoming more involved with the diagnosis and treatment of conditions commonly seen by the general internist and subspecialist.

B. Course (Rotation) Objectives and Core Competencies

1. Medical Knowledge

   a. The student will be able to demonstrate understanding of patient presentation and pathophysiology of common presenting complaints seen in the adult patient.
   b. The student will demonstrate the ability to evaluate and develop a differential diagnosis for each of the following symptoms/conditions:

      • Chest Pain
      • Syncope
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      • Anemia
      • Fatigue
      • Headache
      • Cough
      • Shortness of Breath
      • Fever
      • Abdominal Pain
      • GI bleed
      • Constipation
      • Diarrhea
      • Dizziness
      • Back Pain
      • Joint Pain
      • Rash
c. The student will demonstrate an understanding of the basic principles and current recommendation for adult Immunizations based on ACIP or CDC guidelines. Age appropriate cancer screenings ex: Breast, Colon, Cervical, Prostate Screenings and their utilization of the USPSTF Database.

2. **Patient Care**

   a. Develop a differential diagnosis appropriate to the context of the patient care setting and findings.
   b. Develop an understanding of the altered physiology of the geriatric patient and aging process.

3. **Interpersonal and Communication Skills**

   a. Explain how patient concerns and perspectives including cultural and religious influences impact care
   b. Describe how to write the following:
      
      - different types of medical notes
      - SOAP notes
      - admission history & physicals
      - discharge summaries
      - procedure notes
   c. Describe the capabilities of electronic health records.
   d. Explain how to share diagnostic plan of care, and prognostic information with patients and families.

4. **Professionalism**

   a. Summarize understanding and need for supervision, chaperones and/or assistance.
   b. Explain how sensitivity, empathy and responsiveness to diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation impacts care.
   c. Explain commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations.
   d. Recognize that all patients in emergency situations shall receive care regardless of medical insurance coverage, ethnicity, race, or social economic status.
5. **Practice-Based Learning and Improvement**

   a. Apply fundamental epidemiologic concepts.
   b. Detail medical informatics, evidence-based medicine, and research.
   c. Identify personal knowledge deficits, strengths, and limits through frequent self-reflection.
   d. Explore the ability to locate educational resources and strengthen personal medical knowledge.
   e. Explain quality improvement.

6. **System-Based Practice**

   a. Recognize how patient care and professional practice affect other health care professionals, health care organizations, and the larger society.
   b. Be aware of medication and treatment costs (direct patient costs/insurance coverage) and the impact of these factors on the physician’s treatment plan.
   c. Demonstrate understanding of HIPAA regulations and its impact on the communication of patient care information for patients.
   d. Recognize the need to improve your knowledge base, develop and deliver case presentations and demonstrate these skills by utilizing the local electronic medical record, online resources and local patient instruction protocols to provide patient instructions.
   e. Understand the training and certification pathways of sub specialties.
   f. Demonstrate an understanding of when it is appropriate to refer to specialists.

7. **Osteopathic Philosophy and Osteopathic Manipulative Medicine**

   a. Identify common and preferred pain patterns.
   b. Identify key history and physical examination findings pertinent to the working diagnosis and the differential diagnosis.
   c. Use appropriate information resources to determine diagnostic evaluations for patients with common and uncommon medical problems.
   d. Describe how critical pathways or practice guidelines can be useful in sequencing diagnostic evaluations for the patient.
   e. Formulate a differential diagnosis based on findings from the history and physical examination of the patient.
   f. Prioritize diagnostic tests and treatment (including OMT) based on sensitivity, specificity, and cost-effectiveness.
   g. Apply the 4 tenets of osteopathic medicine to patient care.
C. Study Plan

1. Universal notes Adult Medicine Inpatient Practice exams

Go to https://myuniversalnotes.com. Login using your WVSOM email and password. Click on the Q in the left hand navigation bar. Then click start a quiz. Then select Clinical for the “Questions by tag.” Then click on the “Clinical Tags” box. Then put a check in the Internal Medicine box. You will then select the number of questions. You will be responsible for completing two 50 question quizzes per 4 week rotation.

Satisfactory course completion requires this monitored assignment to be finished prior to the end of the block.

2. Universal Notes: Study Plan for Internal Medicine

Go to https://myuniversalnotes.com. Login using your WVSOM email and password. Then you can use this URL: https://web.myuniversalnotes.com/bibliography/view/3063, or click on “2 Study Plans & Board Prep, then “Study Plans CLERKSHIPS, COMAT, NBME,” then “Study Plan for Internal Medicine.” Click on and complete the modules in the following sections.

- Respiratory
- Musculoskeletal
- Neurologic

For each topic you will complete the competencies including: “Read It”, “Test It”, and “Answer It”. You will not be expected to complete the “Log It,” “Upload It,” or “Assess It” competencies.

Satisfactory course completion requires this monitored assignment to be finished prior to the end of the block.

D. COMAT  There is no COMAT for this course.

E. Required Textbooks


Andreoli and Carpenter's Cecil Essentials of Medicine, 9th edition, 2016. Saunders*


F. Additional Resources


*available for free on Clinical Key through the WVSOM library

The American Academy of Dermatology (AAD) has excellent free resources available for study

- The comprehensive skin exam:

  https://www.aad.org/education/basic-derm-curriculum/suggested-order-of-modules/the-skin-exam
G. Didactics and Reading assignments

1. Complete the DocCom Essential Modules 5-8 and Questions for Reflections
   To access the Doc.Com Cases visit: https://webcampus.drexelmed.edu/doccom/db/read.aspxm students will log in using Email address and Password. Basic Modules include: 13 Responding to Strong Emotions, 14 It Goes without Saying: Nonverbal Communication in Clinician-Patient Relationships, 15 Understanding difference and Diversity in the Medical Encounter: Communication across Cultures, 16 Promoting Adherence and Health Behavior Change.

2. Step-Up to Medicine
   The foundation of your required study will be comprised of reviewing the material in *Step-Up to Medicine*.


   Go to the WVSOM library page at: https://www.wvsom.edu/library/databases-portals-eresources. In the gray box on the right of the screen you’ll find a heading that says “Search Library Catalog.” In the box underneath this type Step-up to Medicine. Step up to medicine will be the first hit and will include a link to “LWW Health Library.” Click on that and you’ll be in the e-book.

   Step-Up to Medicine is intended to provide the content needed to help you succeed in your internal medicine rotations, a means of self-assessment for preparation for the COMAT and COMLEX examinations, and a foundation for further study. Students are expected to expound on the information when needed by utilizing other texts and resources (see sections 2.3.E and 2.3.F). This resource provides an outline of the material essential to Internal Medicine, but provides a knowledge base that may be useful in other disciplines as well, such as Family Medicine, Emergency Medicine, and Surgery.

   Subjects Covered:

   - Diseases of the Cardiovascular System
   - Diseases of the Pulmonary System
   - Diseases of the Gastrointestinal System
   - Endocrine and Metabolic Diseases
   - Diseases of the Central and Peripheral Nervous System
Additionally, the student is expected to set time aside each day for reading about patient encounters, preceptor assigned reading, and commonly encountered conditions.

H. **Additional Recommendations**

Cecil’s Essentials of Medicine is a foundational textbook and should be in the personal library and heavily referred to by every medical student.

I. **Grading/Calculations**

*Internal Medicine IV*

The grade will be determined based on an average of preceptor evaluations for the course as determined by the WVSOM Office of Assessment. The online assignments must be completed or the grade will be recorded as an incomplete.

Completion of the Preceptor/Site/Course Evaluation should be done at the end of each rotation.

**Please note the following:**

The preceptor (if an email address is on file) will receive an email with a link to the Clinical Education Grade Form to complete before the end of the rotation. The student needs to inquire if the preceptor/supervising physician has received the email with the link to the form. If the Preceptor/Supervising physician did not receive the email, then the student must provide a paper grade form to be completed and Faxed or mailed to the SWC regional office.
The student is responsible for ensuring that the Grade form is submitted in a timely fashion and should follow-up with the preceptor, if necessary.
Surgery II and Surgery III (Selectives)
Course Numbers: 920, 921, 922, 925, 926, 927 OLM

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents an alternate syllabus to the course.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other

A. Introduction

Surgery II and Surgery III (Selective) are designed to expand the student’s knowledge in the pathophysiology of commonly encountered surgical conditions.

B. Course (Rotation) Objectives and Core Competencies

1. Medical Knowledge
   a. Understand the role of pre-operative risk assessment and post-operative patient management.
   b. Understand the presentations, pathophysiology, etiology, differential diagnosis and surgical management of the following complaints or diagnosis: acute abdominal pain, appendicitis, cholecystitis, hernias, colon cancer, breast cancer, diverticulitis, thyroid nodules, thyroid cancer, pancreatitis, small bowel obstruction, dyspepsia/peptic ulcer disease, inflammatory bowel disease, upper and lower gastrointestinal bleeding, burn management, and trauma management.
   c. Understand the role of appropriate surgical consultation.
   d. Understand and recognize the principles of evidence-based utilization of resources as applied to general surgery (system based).

2. Patient Care
a. Understand the components of a thorough physical exam of the abdomen, breast, thyroid, anorectal and genital areas.
b. Understand the components of a preoperative assessment and management plan.
c. Recognize common post-operative complications.

3. **System Based Practice**
   a. Recognize how patient care and professional practice affect other health care professionals, health care organizations, and the larger society.
   b. Recognize how delivery systems differ with controlling health care costs and allocating resources.
   c. Be aware of medication and treatment costs (direct patient costs) and the impact of these factors on the physician’s treatment plan.
   d. Demonstrate understanding of HIPAA regulations and its impact on the communication of patient care information for surgical patients.
   e. Recognize the need to improve your knowledge base, develop and deliver case presentations and demonstrate these skills by utilizing the local Electronic Medical Record (EMR), on-line resources, and local patient instruction protocols to provide patient instructions.

4. **Osteopathic Philosophy and Osteopathic Manipulative Medicine**
   a. Recognize and apply osteopathic treatment modalities appropriate to the pre- and post-surgical environment for somatic dysfunction, including the need for early ambulation and fluid mobilization techniques.
   b. Develop an appreciation for the need to treat the entire patient including emotional, spiritual, physical, and family needs.

C. **Study Guide**
   There are 22 cases and 16 skills modules in WISEMD. You should have already accessed this through your WVSOM credentials in Year 3.

[https://aquifer.org/courses/wise-md/](https://aquifer.org/courses/wise-md/)

Supplemental required readings on the topics covered in Mann’s Surgery, A Competency-Based Companion.

D. **COMAT Resources**
   Not applicable
E. Required Textbooks

    Surgery: A Competency-Based Companion, Mann

F. Additional Resources

    Surgery on Call, 4th edition, Lange
    Zollinger’s Atlas of Surgical Operations
    Sabiston Textbook of Surgery, 20th edition
    Core Topics in General and Emergency Surgery, 5th edition

G. Didactics and Reading Assignments

    There are 22 cases and 16 skills modules in WISEMD. You should have already accessed this through your WVSOM credentials in Year 3.

    https://aquifer.org/courses/wise-md/

    Supplemental required readings on the topics covered in Mann’s Surgery, A Competency-Based Companion.

H. Grading – Calculations

    If a portion of this course was completed with a preceptor, the grade will be based solely on the evaluation form submitted by the preceptor assuming the Site evaluation and other assignments above were completed. If the entire course was completed online, the grade will be based on the average score for this course as determined by the WVSOM Office of Assessment.

Please note the following:

    The preceptor (if an email address is on file) will receive an email with a link to the Clinical Education Grade Form to complete before the end of the rotation. The student needs to inquire if the preceptor/supervising physician has
received the email with the link to the form. If the Preceptor/Supervising physician did not receive the email, then the student must provide a paper grade form to be completed and Faxed or mailed to the SWC regional office.

The student is responsible for ensuring that the Grade Form is submitted in a timely fashion and should follow-up with the preceptor, if necessary.
Family Medicine II
Course Numbers: 931, 932, 933 OLM

Family Medicine III
Course Numbers: 960, 961, 962 OLM

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents an alternate syllabus to the course.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other

A. Introduction

Family Medicine II and III are advanced rotations where the student demonstrates a progressive and significant level of maturation and responsibility in the application of physician skills toward the diagnosis and treatment of those conditions commonly seen by the family practitioner. It is anticipated that the clinical skills acquired during training in Family Medicine I will be expanded in this advanced rotation.

B. Course (Rotation) Objectives and Core Competencies

1. Medical Knowledge
   a. By the end of this rotation the student is expected to possess the knowledge, attitudes and skills to:
      • Assess and manage acute illnesses commonly seen in the office setting, or that they are likely need to be prepared to assess and manage in the hospital setting.
      • Determine the health risks of patients/populations and make recommendations for screening and health promotion (wellness visits).
• Describe a complete history and physical in all age groups, from pediatric to geriatric, which includes osteopathic considerations in the history and physical exam as well as the treatment and management of patients.
• Be able to develop an appropriate assessment and treatment based on the information gathered.
• Incorporate appropriate preventive medicine as per guidelines for each age group.
• Understand and implement focused evaluations of geriatric patients who present for evaluation and care.

b. By the end of the rotation the student should be able to:
• Differentiate between common etiologies that present with that symptom.
• Recognize dangerous/emergency conditions that may present with that symptom and know when emergent referral is needed.
• Describe a focused age appropriate history and physical examination as indicated for all patients.
• Formulate recommendations as to labs/imaging/tests to obtain to narrow the differential.
• Appreciate the importance of a cost-effective approach to the diagnostic work-up.
• Describe the initial management of common and dangerous diagnoses that present with that symptom.

c. For each core chronic disease, the student should be able to:
• Propose diagnostic criteria and surveillance strategies for that problem.
• Locate and evaluate clinical practice guidelines associated with each of the core chronic diseases.
• Describe major treatment modalities for those problems.

d. Adult Health Maintenance:
• Define primary, secondary, and tertiary prevention.
• Identify risks for specific illnesses that affect screening and management strategies.
• Find and apply current guidelines for immunizations.

e. Well child and adolescent visits:
• Describe the core components of child preventive care—health history, physical examination, immunizations, screenings/diagnostic tests, and anticipatory guidance.
• Find and apply the current guidelines for immunizations and be able to order them as indicated, including protocols for “catch-up” if immunizations are delayed/incomplete.
• Identify and perform recommended age-appropriate screenings.

2. **Patient Care**
   a. Detail a focused history and physical examination that includes identification of complications for chronic conditions.
   b. Detail a chronic follow-up visit for patients with common chronic diseases.
      • Propose an evidence-based management plan that includes pharmacologic and non-pharmacologic treatments, and appropriate surveillance and tertiary prevention.
   c. Develop an evidence-based health promotion/disease prevention plan for any age or gender.
   d. For women: detail a full menstrual, gynecological, and obstetric history.
   e. For men: identify issues and risks related to sexual function and prostate health.
   f. Detail a physical examination on an infant, child, adolescent, and adult.
   g. Summarize skills required for advanced history-taking, communication, physical examination and critical thinking.
   h. Incorporate OP&P into the practice of family medicine.

3. **Interpersonal and Communication Skills**
   a. Demonstrate ability to effectively communicate with patients from the pediatric patient to the geriatric patient.
   b. Detail skills required to effectively communicate with patients from the pediatric patient to the geriatric patient, communicate/identify with caregivers, and establish effective relationships with patients and families.
   c. Discuss how to communicate appropriately with other healthcare professionals (e.g. other physicians, physical therapists, occupational therapists, nurses, counselors, etc.).
   d. Be able to document an acute and chronic care visit appropriately.
   e. Discuss how to communicate respectfully with patients to encourage lifestyle changes to support wellness (e.g. weight loss, smoking cessation, safe sexual practices, exercise/activity/nutrition/diet).
   f. Detail how to respectfully educate a patient about an aspect of his/her disease using language that most patients understand.
   g. Describe how to provide counseling related to health promotion and
disease prevention.
h. Regarding well child visits, be able to identify health risks, including accidental and non-accidental injuries and abuse or neglect.

4. **Professionalism**
   a. Summarize needed aspects of professional relationships with patients and staff.
   b. Describe empathy and cultural competency.
   c. Describe responsibility, reliability and dependability.
   d. Explain patient confidentiality/HIPAA regulations.
   e. Detail components of respect for peers and all members of the health care team.

5. **Practice-Based Learning and Improvement**
   a. Apply fundamental epidemiologic concepts to practice improvement.
   b. Understand how medical informatics/EBM/research can be used to enhance patient care and understand their limitations in the practice of medicine.
   c. Demonstrate ability to identify personal knowledge deficits.
   d. Demonstrate ability to locate educational resources and strengthen personal medical knowledge.
   e. Display commitment to continuous quality improvement.
   f. Discuss an evidence-based, step-wise approach to counseling for lifestyle modifications in patient scenario.
   g. Practice life-long learning skills, including application of scientific evidence in clinical care.

6. **System Based Practice**
   a. Recognize how patient care and professional practice affect other health care professionals, health care organizations, and the larger society.
   b. Use patient-centered, equitable systems of care that recognize the need to reduce medical errors and improve patient safety.
   c. Be able to apply quality improvement concepts, including problem identification, barriers to optimal patient care and design improvement interventions.
   d. Be able to describe the nature and scope of family practice and how it interacts with other health professionals.
      - Discuss the value of family physicians within any health care system.
      - Discuss the principles of osteopathic family medicine care.
   e. Be able to identify community resources available to enhance patient care.
   f. Appreciate the importance of a cost-effective approach to the
diagnostic work-up.
g. Have a basic understanding of Medicare, Medicaid, Third Party, and HMO services.

7. **Osteopathic Philosophy and Osteopathic Manipulative Medicine**
   
   
b. Develop an appreciation for the need to treat the entire patient including mind, body and spirit across all ages.
   
c. Integrate osteopathic concepts and OMT into medical scenarios.
   
d. Recognize somatic dysfunction across all age groups and how this may impact their overall health.
   
e. Explain the application of OMT in family medicine across all age groups.
   
f. Adapt osteopathic treatment modalities to adequately and safely treat those across all age groups.

C. **Study Guide**
   
   In general, the best approach to studying is to access multiple sources.
   
   Universal Notes was used in FM 1, and is a comprehensive online program to facilitate your study, and can be reviewed to aid your study of more advanced topics in FM2 and FM3. Additionally, Rakel is the core reference text. Conn’s Current Therapy and Lange Case Files are excellent supplemental sources.

D. **COMAT Resources**
   
   Not applicable

E. **Required Textbooks**


   *Foundations for Osteopathic Medicine*, Lippincott Williams and Wilkins 4th ed

   Diagnosis and Plan for Manual Medicine (refer to this for your Family Medicine H&P case write-up).
F. Additional Resources

**Recommended Texts:** These are additional textbooks that you may find helpful and have additional information on the topics for the COMAT blueprint. You will see some of these textbooks listed in the other disciplines as you progress.

*Cecil Essentials of Medicine; Elsevier, 9th ed.*
*Ham’s Primary Care Geriatrics; Elsevier, 6th ed.*
*Case Files Family Medicine; McGraw Hill/Lange 4th ed.*
*Conn’s Current Therapy 2018; Elsevier*

G. Didactics and Reading Assignments

Try to read at least six hours daily during the week, using the recommended and required texts. You can also use online resources for further in-depth readings on the WVSOM library.

Use Universal Notes to read about subjects that you did not cover in FM 1 or want to review.

For **FM3:** students will additionally complete assignments in the WISE On-Call portion of Aquifer (https://aquifer.org/) and sign in using your WVSOM log-in credentials. Among the listed courses at the top of the page, select “Launch WISE On-Call”. Complete each course listed on the Dashboard. In order to pass the course, students will need to achieve a 70% or above on each course that has assigned points.

H. Additional Recommendations

None specifically for FM2 or FM3.

I. Procedures/Clinical Skills

1. Clinical Key Procedures
In lieu of the ability to gain exposure to common clinical procedures in the outpatient family medicine setting, Clinical Key has a vast library of clinical procedures appropriate to various settings.

Review the following procedure videos in Clinical Key during FM2. For FM3, if FM2 was completed in the clinical setting but FM3 will be completed using this OLM, the FM3 student will also review the Clinical Key procedures:

- Urinary bladder catheterization
  - Female catheterization
  - Male catheterization

- Joint injections
  - Injection – Shoulder
  - Knee Injection
  - Trochanteric Bursa Injection
  - Trigger Point Injection

- Anoscopy
  - Anoscopy

- I&D of Abscesses
  - Incision and Drainage of Cutaneous Abscesses
  - Incision and Drainage of an Abscess

All students have access to Clinical Key. Students are encouraged to set up a free account in order to be able to bookmark and save progress. The WVSOM Library has a video with instructions to set up an account found here:

https://www.youtube.com/watch?v=keNRIty1_Ys&feature=youtu.be

Once registered and logged in, select “Procedure Videos” from the Browse menu (you may need to first click on the “…” option if it is not visible). Individual procedures may be found by typing the exact name of the procedure in the “Filter List by Title” block at the top of the screen.

J. Patient and Procedure Logs

If any portion of the Family Medicine 2 or Family Medicine 3 rotations is completed in the clinical setting, you are required to maintain a log of your activities while on your rotation. This is important to document the experiences that you are exposed to in the clinical setting. You should get used to maintaining a log as this will continue during your residency. A well-documented log will help you to know the cases and procedures that you are exposed to and those that you may need to see in the future of your education. The log books need to be initialed by the preceptor documenting the accuracy of your entries. The logs need to be reviewed by your Regional Assistant Dean and accepted as proper documentation of your rotation experience. There is limited space but if you need
to use more than one line to document, do so.

You should make sure that you make a notation in the log:
- When you see a patient
- Note if the patient was seen in the Office/Hospital or other i.e. Nursing home
- Make sure that you list the diagnosis/problem that the patient presents with, making sure that you do this in enough detail. (Example: Acute Exacerbation of COPD, or Uncontrolled DM type 2 not just COPD, or DM)
- Document if you write admit notes in the hospital, progress notes in the office or hospital, discharge summaries and if you did an oral presentation to the preceptor on an encounter.
- List in detail the procedures that you observed (O), assisted (A) or performed (P).

It is always wise to make a copy of the log for your own records. You may want to review your logs as you participate in your 4th year audition rotations so you can respond to any questions of your experiences in doing certain procedures.

K. Family Medicine Procedure Log: If any portion of the Family Medicine 2 or Family Medicine 3 rotations is completed in the clinical setting, this form (see below) is to be signed by your preceptor and turned into your Regional Assistant Dean at the end of your rotation. Failure to comply will result in a professionalism report. If the rotation is completed exclusively or partially in the virtual setting as a result of a worldwide emergency, then students will complete the Clinical Key assignment listed in Section I above.
**FAMILY MEDICINE PROCEDURE LOG**

The student will be exposed to the following skills: (to be signed by your preceptor)

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<th>Skill</th>
<th>Reference</th>
<th>Performed</th>
<th>Observed</th>
<th>Not Done (why)</th>
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<td>OR&amp;P</td>
<td>OR&amp;P texts and videos</td>
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<td>Demonstrate:</td>
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<td>Palpatory diagnostic skills</td>
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<td>Ability to record findings of exam</td>
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<td>Ability to record treatment procedures used</td>
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<td>Ability to use any of the following:</td>
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<td>Soft tissue, muscle energy, myofascial,</td>
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<td>Strain/counterstrain, HVLA, craniosacral,</td>
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<td>Interpret resting 12-lead EKG</td>
<td>EKG &amp; ACLS texts</td>
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<td>EKG Basics—LSU*</td>
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<td>ECG Learning Center*</td>
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<td>Rhythm Simulator*</td>
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<td>Knowledge of venipuncture/venipuncture</td>
<td>Clinical Skills II Handbook and video</td>
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<td>phlebotomy</td>
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<td>Clinical Skills II Handbook</td>
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<td>Ability to suture</td>
<td>Clinical Skills II Handbook</td>
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<td>Knowledge of splint/cast application</td>
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<td>Clinical Skills II Handbook</td>
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<td>Interpretation of CXR—PA and LAT</td>
<td>Radiology text/note</td>
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<td>Basic CXR Review—Dept of Radiation, Uniformed Services*</td>
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<td>Skin biopsy and excisions</td>
<td>Clinical Skills II—surging</td>
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<td>Clinical Keys: Skin Biopsy Techniques</td>
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<td>Joint injections</td>
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<td>Ear lavage</td>
<td>Clinical Skills II—Cerumen</td>
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<td>Implantation</td>
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<td>Anoscopy</td>
<td>Clinical Skills II Handbook</td>
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<td>Flexible sigmoidoscopy</td>
<td>Clinical Skills II Handbook</td>
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<td>IAD of abscess: list type of abscess</td>
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*ECG Learning Center: [http://library.med.utah.edu/med/ecg/](http://library.med.utah.edu/med/ecg/)*

*ECG Library: [www.ecglibrary.com/ecphome.html](http://www.ecglibrary.com/ecphome.html)*


*Basic CXR Review—Dept of Radiology, Uniformed Services, University of Health Sciences, Bethesda, MD: [http://rad.uisahs.mil/radiology_review/index.html](http://rad.uisahs.mil/radiology_review/index.html)*

**Preceptor's signature:** ___________________________  **Date:** __________

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L. Grading - Calculations:
   a. Preceptor grade 100% if enough of the course was completed with a preceptor. If the course was completed online, the grade will be based on the average grade for this course as determined by the WVSOM Office of Assessment.
   b. Completion of Patient Procedure Logs, Family Medicine Procedure Log and Preceptor/Site/Course Evaluation

   The patient procedure logs, family medicine procedure logs and the preceptor/site/course evaluation must be turned in by the last day of the rotation. Failure to comply will result in a professionalism report.

Please note the following:

The preceptor (if an email address is on file) will receive an email with a link to the Clinical Education Grade Form to complete before the end of the rotation. The student needs to inquire if the preceptor/supervising physician has received the email with the link to the form. If the Preceptor/Supervising physician did not receive the email, then the student must provide a paper grade form to be completed and Faxed or mailed to the SWC regional office.

The student is responsible for ensuring that the Grade Form is submitted in a timely fashion and should follow-up with the preceptor, if necessary.
Pediatrics II

Course Numbers: 950, 951, 952 OLM

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents an alternate syllabus to the course.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other.

A. Introduction

The Pediatrics II rotation is designed to further refine the knowledge and skills required for the unique care of infants, children and adolescents. This rotation is a continuation of the Pediatrics I course. Greater emphasis should be placed on the study of diagnostic technologies and management aspects during Pediatrics II than in Pediatrics I.

B. Course (Rotation) Objectives and Core Competencies

1. Medical Knowledge
   a. Recall and refine knowledge of normal growth and development, and apply this to a clinical scenario, from birth through adolescence for health supervision and disease prevention.
   b. Recall knowledge needed for the diagnosis and initial management of acute and chronic illnesses of infancy and childhood including common pediatric emergencies.
   c. Recall knowledge needed for the diagnosis and initial management of congenital problems and genetic diseases of infancy and childhood.
   d. Continue to develop the knowledge, skills, and strategies necessary for health supervision including knowledge of medications, immunizations, and age appropriate
anticipatory guidance for nutrition, developmental/behavioral counseling, and injury prevention including pharmacology.

e. Select, justify, and interpret clinical tests and imaging with regard to both patient age and pathological processes, including concepts regarding negative and positive predictive value, test sensitivity specifically and cost utilization.

f. Create a list based on the presentation and on physical findings of differential diagnoses for common pediatric disorders and prioritize based on findings and probability. Consider a work-up and treatment plan based on the above.

2. **Patient Care**
   a. Explain interview and physical examination skills required to conduct interviews with children or adolescents and their families and understand age appropriate physical examinations and osteopathic structural examinations.
   b. Explain how to educate patients and/or caregivers and evaluate their comprehension of the diagnosis and treatment plan, including conveying clinical condition and obtaining informed consent prior to procedures.
   c. Discuss how to educate patients and/or caregivers in both well child and a sick child.
   d. Describe how to accurately convey patient issues and needs when transitioning the patient to other members of the healthcare team, families, and parents.

3. **Interpersonal and Communication Skills**
   a. Summarize how to effectively communicate with pediatric patients, their caregivers, and the healthcare team.
   b. Explain how parental and patient concerns and perspectives including cultural and religious influences impact care.
   c. Describe how to write the following:
      - different types of medical notes
      - SOAP notes
      - newborn nursery admission notes
      - admission history & physicals
      - discharge summaries
      - procedure notes
   d. Describe the capabilities of electronic health records.
   e. Explain how to share diagnostic plan of care, and prognostic information with patients and families.

4. **Professionalism**
   a. Summarize understanding and need for supervision, chaperones and/or assistance.
   b. Detail an understanding of privacy and independence of adolescents and of the private individual interview of an adolescent during the interview process.
   c. Explain how sensitivity, empathy and responsiveness to diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation impacts care.
d. Explain commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations.
e. Recognize that all patients in emergency situations shall receive care regardless of medical insurance coverage, ethnicity, race, or social economic status.

5. Practice-Based Learning and Improvement
a. Apply fundamental epidemiologic concepts.
b. Detail medical informatics, evidence-based medicine, and research.
c. Identify personal knowledge deficits, strengths, and limits through frequent self-reflection.
d. Explore the ability to locate educational resources and strengthen personal medical knowledge.
e. Explain quality improvement.
f. Apply guidelines to age-appropriate clinical management.
g. Recognize disparities in clinical research, access, and delivery of health care to younger populations and how these affect the health of the pediatric population.

6. Systems-Based Practice
a. Recognize quality patient care systems and how they may affect the larger health care systems.
b. Discuss the cost and risk-benefit analysis in patient and/or populations-based care in different delivery systems and settings.
c. Identify available resources providing specialty care required for specific preventative screening and social situations. For example:
   - Parental and child developmental assistance programs
   - Foster care and adoption
   - Abuse, neglect and domestic violence
   - Hospice
   - Programs for special medical needs
d. Describe reporting requirements for infectious diseases or psychosocial issues, such as child abuse or suicide.

7. Osteopathic Philosophy and Osteopathic Manipulative Medicine
The Four Tenets of Osteopathic Medicine: 1) The body is a unit; 2) Structure and function are interdependent; 3) The body has self-healing and self-regulatory capabilities; 4) Rational osteopathic care relies on the integration of these tenets in patients care.
a.
b. Acquire knowledge of the approaches to common presentations to the Emergency Department specific to the Pediatric population.
c. Acquire knowledge needed for the evaluation and initial management of acute illnesses of infancy and childhood including common pediatric emergencies.
d. Recognize conditions that can be potentially life and limb threatening in the Pediatric age group
   Be able to formulate a list based on the presentation and on physical findings of differential diagnoses for common pediatric disorders and prioritize based on findings and probability.

C. Study Guide & Practice Exams

The core foundational study program for the Pediatrics rotation is Universal Notes (www.myuniversalnotes.com).

1. Log in/create an account to Universal Notes (www.myuniversalnotes.com)
2. Click on Chapter 2 "Study Plans"
3. Find Pediatrics and click on it

There are two Pediatrics Study Plans available in Universal Notes:
• Study Plan Pediatrics: Comprehensive
• Study Plan Pediatrics: Inpatient

These can be found in Chapter 2 of the on-line curriculum. The specific topics required for study will vary depending on the service to which you are assigned. Your preceptor can help guide you to specific in-depth readings, especially Nelson’s Essentials of Pediatrics.

Practice Exams

Students should complete the following practice exams in Universal Notes for Pediatrics II:
• Practice Exam: Pediatric Emergency Medicine 1 and Pediatric Emergency Medicine 2
• Practice Exam: Pediatrics Inpatient
• Practice Exam: Pediatrics Neonatal Intensive Care Unit
• Practice Exam: Pediatrics Prenatal Evaluation and Newborn Nursery 1 and Pediatrics Prenatal Evaluation and Newborn Nursery 2
• Practice Exam: Pediatrics Subspecialties 1 and Pediatrics Subspecialties 2
The Practice Exams can be accessed through the Quiz Bank in Universal Notes by selecting TOPIC and then typing in the name of the practice exam as shown above.

Students are required to complete each of the five practice exams and score 70% or greater on each of them in order to pass the rotation. Students must retake each exam until the passing score is achieved.

**Students are also required to complete the Pediatric EM online module(s) here:**

[https://www.saem.org/cdem/education/online-education/peds-em-curriculum](https://www.saem.org/cdem/education/online-education/peds-em-curriculum)

Additional readings in Pediatrics in Universal Notes

1. Log in/create an account to Universal Notes ([www.myuniversalnotes.com](http://www.myuniversalnotes.com))
2. Click on Chapter 2 "Study Plans"
3. Find Pediatrics and click on it

Also, in-depth readings can be accessed using the reference texts, especially Nelson’s Essentials.

**D. COMAT Exam**

Not applicable

**E. Required Textbooks and Curriculum Resources**

**Universal Notes ([www.myuniversalnotes.com](http://www.myuniversalnotes.com))**

The free online resource, **Universal Notes**, offers for each clerkship:

- Study plan
- Study material
- Question bank
- [https://www.saem.org/cdem/education/online-education/peds-em-curriculum](https://www.saem.org/cdem/education/online-education/peds-em-curriculum)

Required Textbooks:

- *Nelson’s Essentials of Pediatrics, 8th edition*
• *Pediatrics: A Competency-Based Companion*

**F. Additional Resources**

• *Nelson’s Textbook of Pediatrics, 21st edition*

**G. Didactic and Reading Assignments**

As noted above. The Pediatric EM modules are well-referenced for additional readings. This is encouraged to develop a broader and more in-depth scope of knowledge.

The Universal Notes program is also useful as a rather comprehensive review of pediatrics for the medical student, including review questions.

**H. Additional Recommendations**

Review the basic components of the pediatric normal physical exam, including newborn, infant, and toddler, including developmental milestones. Frequent review of preventive care, such as parental counseling on diet and safety as well as vaccination schedules is prudent.

**I. Grading**

If a portion of this course was completed with a preceptor, the grade will be based solely on the evaluation form submitted by the preceptor assuming the Site evaluation and other assignments above were completed. If the entire course was completed online, the grade will be based on the average score for this course as determined by the WVSOM Office of Assessment.

**Please note the following:**

The preceptor (if an email address is on file) will receive an email with a link to the Clinical Education Grade Form to complete before the end of the rotation. The student needs to inquire if the preceptor/supervising physician has received the email with the link to the form. If the Preceptor/Supervising physician did not receive the email,
then the student must provide a paper grade form to be completed and Faxed or mailed to the SWC regional office.

The student is responsible for ensuring that the Grade Form is submitted in a timely fashion and should follow-up with the preceptor, if necessary.
COVID-19 Elective OLM
Two-weeks - Spring 2020

Primary Faculty Contact:   Authorizing Physician:
Crystal Boudreaux, Ph.D.   Brian Kendall, M.D.
cboudreaux@osteo.wvsom.edu   bkendall@osteo.wvsom.edu
Phone: 304.793.6822

Supportive Faculty:
Tony Liu, M.D., Ph.D.
tliu@osteo.wvsom.edu
Phone: 304.647.6427

Marc Benson, Ph.D.
mbenson@osteo.wvsom.edu
Phone: 304.647.6275

I. Description
The purpose of this elective is to interpret literature during a medical emergency like the current SARS-CoV2 (COVID-19) pandemic. As physicians, review of medical and experimental literature is critical to maximize knowledge by attaining, maintaining and improving medical competency and stay current with medical trends. In a time of crisis this can be incredibly difficult with the rate in which case and laboratory studies emerge with and without peer review.

II. Outcomes
1. Understand how to do a critical review of literature
2. Demonstrate the ability to do a critical review of literature on the current COVID-19 pandemic
3. Identify falsely reported information or limitations to statistics being reported for COVID-19
4. Explain the basic science mechanisms to projected pathogenesis and treatments for COVID-19
5. Describe parameters that would affect epidemiological analysis of the current COVID-19 pandemic (ex. age, gender, ethnicity, geographic location, occupation, etc.)

III. Osteopathic Relevance
The COVID-19 Elective focuses on communication as an osteopathic physician. It is important to interpret literature and communicate effectively to patients. Understanding that a world medical emergency infectious diseases such as the COVID-19 pandemic incorporates the four osteopathic tenets:
1. The body is a unit; the person is a unit of body, mind, and spirit
2. The body is capable of self-regulation, self-healing, and health maintenance
3. Structure and function are reciprocally interrelated
4. Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function

Without complete knowledge of the viral pathogen, no effective antivirals, no vaccines, and unknown extraneous factors, we rely on these tenets for treatment and healing from this pandemic.

IV. Activities
1. Read the following brief communications on interpreting scientific literature:
   a. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3191655/
   b. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3687192/
2. In no more than 10 pages (single spaced, Arial font - 11point, 1 inch margins), complete a critical literature review using the guide below to answer the following questions within each section.
   a. Section I: describe the virus and how it compares to the other coronavirus pandemics (MERS-CoV and SARS-CoV1), explain the viral mechanism(s) being described and what factors are known to influence the mechanism(s) of COVID-19, describe the antiviral treatments, vaccines and their mechanisms discussed in the literature of COVID-19
   b. Section II: identify and summarize one controversial report based on basic science mechanisms described in section I, explain the limitations on the statistics being reported to date of the COVID-19 pandemic
   c. Section III: describe the reported risk factors and how they tie directly to the mechanism(s) explained in section I for COVID-19, explain how patient management has evolved over time during the pandemic due to limitation in reporting described in section II, identify influences (if any) on epidemiological parameters of COVID-19 examples in outcome 5
   d. Section IV: in a few sentences, comment on how this pandemic has shaped your thoughts on infectious disease and medicine as a training physician

V. Resources
1. Utilize the resources of the WVSOM online library (https://www.wvsom.edu/library/library-home)
3. Two Lancet articles as a starting point
   b. https://www.thelancet.com/action/showPdf?pii=S2213-2600%2820%2930116-8

Core Competencies
The core competencies can be found using this link:
http://www.wvsom.edu/Academics/pre-clinica-competencies

**Professionalism**
Professionalism will be exhibited each day in class and each student will be expected to adhere to institutional policy ST-01 and their own statement below which was written by the student government association:

“As medical students of the West Virginia School of Osteopathic Medicine, we acknowledge and value the importance of professional conduct. We recognize that the behavior and attitudes of individuals and groups reflects on all of us, our institution, and our profession. Professionalism encompasses but is not limited to the virtues of respect, integrity, honesty, confidentiality, and dependability. We will strive to uphold these values in our endeavors at all times. We will show honesty and integrity to all those we come into contact with, meaning that we will adhere to the moral and ethical principles we have been taught and show soundness of moral character. We will be expected to maintain confidentiality in all settings no matter how small the issue. Above all else we will show self-less service to our patients, colleagues, institution and community.”

For further details that relate to professional behavior, refer to the following institutional policies that can be accessed on the WVSOM Website at [http://www.wvsom.edu/About/policies_procedures](http://www.wvsom.edu/About/policies_procedures)

**Copyright**
Materials used in this course may be copyrighted and should not be shared with individuals not currently enrolled in this course. Sharing copyrighted materials outside of WVSOM will result in having a note in the student’s Dean’s file regarding unprofessional conduct.

*This syllabus is subject to change upon written notification.*
Muscular Dystrophies Elective
Spring 2020

Preceptor:
Predrag Krajacic, MD
pkrajacic@osteo.wvsom.edu
(304) 647-6305

I. Description
The purpose of this elective is to broaden the student’s knowledge on muscular dystrophies with a special focus on Duchenne Muscular Dystrophy (DMD). The elective will incorporate self-guided review of muscular dystrophies in general, followed by guided primary literature search with a special focus on the current state of the search for the cure. Finally, we will wrap up the elective reviewing a JAOA article geared towards osteopathic physicians summarizing the challenges and actions they are uniquely equipped to take in caring for patients with DMD, or diagnosing them early. This will provide the students with the opportunity to get better informed on this devastating disease and be better equipped to help the patients and families struggling to manage it.

II. Outcomes
1. Explain and discuss the disease mechanism and clinical findings for Duchenne Muscular Dystrophy (DMD)
2. Perform a critical review of literature and discuss the current state of research for therapeutic approaches
3. Discuss the current and relevant information regarding DMD diagnosis and management relevant for an osteopathic primary care physician.

III. Osteopathic Relevance
Patients with DMD have dysfunctions in all 5 body physiologic functions and, therefore, would be best approached and optimally treated by relying on all 5 models of osteopathic care. Special focus will be put on an osteopathic primary care physician’s approach to a DMD patient and their family. Approaching DMD care using this osteopathic primary care treatment paradigm will provide the student with up-to-date, holistic, and life-enhancing care options for DMD patients.

IV. Activities
1. Self-guided review of course material related to muscular dystrophies with a special focus on Duchenne Muscular Dystrophy (DMD) in WVSOM Year 1 MSK course and Year 2 Rheum course using textbooks available through the Clinical Key.
2. Guided primary literature search with a special focus on the current state of the search for therapeutics.
3. Review and discussion of the JAOA review article ”Bridging the Gap: An Osteopathic Primary Care–Centered Approach to Duchenne Muscular Dystrophy”

V. Resources

1. Utilize the resources of the WVSOM online library (https://www.wvsom.edu/library/library-home)
3. JAOA article (https://jaoa.org/article.aspx?articleid=2630265)

VI. Grading

Grade for this elective rotation will be assigned by the preceptor.

Core Competencies

The core competencies can be found using this link: http://www.wvsom.edu/Academics/pre-clinica-competencies

Professionalism

Professionalism will be exhibited each day in class and each student will be expected to adhere to institutional policy ST-01 and their own statement below which was written by the student government association:

“As medical students of the West Virginia School of Osteopathic Medicine, we acknowledge and value the importance of professional conduct. We recognize that the behavior and attitudes of individuals and groups reflects on all of us, our institution, and our profession. Professionalism encompasses but is not limited to the virtues of respect, integrity, honesty, confidentiality, and dependability. We will strive to uphold these values in our endeavors at all times. We will show honesty and integrity to all those we come into contact with, meaning that we will adhere to the moral and ethical principles we have been taught and show soundness of moral character. We will be expected to maintain confidentiality in all settings no matter how small the issue. Above all else we will show self-less service to our patients, colleagues, institution and community.”

For further details that relate to professional behavior, refer to the following institutional policies that can be accessed on the WVSOM Website at http://www.wvsom.edu/About/policies_procedures

Copyright

Materials used in this course may be copyrighted and should not be shared with individuals not...
currently enrolled in this course. Sharing copyrighted materials outside of WVSOM will result in having a note in the student’s Dean’s file regarding unprofessional conduct.

This syllabus is subject to change upon written notification.
Medical Communication Skills Elective

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents an alternate syllabus to the course.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other.

A. Introduction
This is a two-week rotation. This rotation may be scheduled as a 2 two week rotation to occur in a consecutive 2 week time period.

B. Course (Rotation) Objectives and Core Competencies

1. Medical Knowledge
   At the conclusion of this rotation, the student will demonstrate medical knowledge, understanding of disease process, and the student’s ability to apply cognitive skills in differential diagnosis as it relates to the assigned modules related to Medical Communication Skills.

2. Patient Care
   Explain how to educate patients and/or caregivers and evaluate their comprehension of the diagnosis and treatment plan, including conveying clinical condition and obtaining informed consent prior to procedures.

3. Interpersonal and Communication Skills
   a. Summarize how to effectively communicate with patients, their family members, and the healthcare team.
   b. Explain how parental and patient concerns and perspectives including cultural and religious influences impact care.
   c. Explain how to share diagnostic plan of care, and prognostic information with patients and families.

4. Professionalism
a. Detail an understanding of privacy and independence of adults and adolescents.
b. Explain how sensitivity, empathy and responsiveness to diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation impacts care.

5. **Systems-based Practice**
   Student will demonstrate the ability to understand his/her role as a member of the health care team, the student’s understanding of local community medical resources, and the student’s understanding of providing effective and cost effective medicine.

6. **Osteopathic Relevance**

C. **Study Guide**
   Using Online DocCom modules. Student will complete the assigned modules and complete both the multiple choice and essay questions associated with each module.

D. **COMAT Blueprint**
   N/A

E. **Required textbooks**
   None

F. **Other resources**
   Evidence Medicine Sites:
   - www.ahrq.gov/clinic/cps3dix.htm
   - www.clinicalkey.com
   - www.cochrane.org/

G. **Didactic and reading assignments**
   As above

H. **Additional Recommendations**
   None
I. Patient Procedure Logs

None.

J. Grading/Calculations

1. Successful completion of assigned online course modules constitutes passage for the Elective.
Toxicology Elective
Course Number:

Course director: Lisa Hrutkay, DO
lhrutkay@osteo.wvsom.edu
Office phone: 304-905-8495

Director, Northern Region: Mary Beth Fitch
mfitch@osteo.wvsom.edu
Office phone: 304-905-0306, Option 1

Administrative Assistant: Ashley Millard
amillard@osteo.wvsom.edu
Office phone: 304-905-0306, Option 2

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents a syllabus for an elective course available via on-line learning.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other.

A. Introduction
This is designed to be a two-week self-directed elective. The student will watch on-line learning modules available at no cost which cover the basic core of medical toxicology material.

At the completion of the on-line learning program, the student will be expected to have gained sufficient knowledge and covered all of the core competencies involving the management of toxicologic emergencies. This will be achieved through the use of Toxicology Library located in the Life in the Fast Lane (litfl.com) website and
supplemental readings. Competency in the subject matter will be assessed through the on-line testing module for toxicology on the SAEM website.

B. Course (Rotation) Objectives and Core Competencies

1. **Medical Knowledge**
   a. Acquire the knowledge needed for the diagnosis and initial management of toxicologic exposures.
   b. Acquire the ability to formulate an appropriate workup plan for the potentially poisoned patient.
   c. Demonstrate the ability to formulate a differential diagnosis for the patient with an accidental or intentional poisoning.
   d. Be able to describe and identify the commonly seen toxidromes in a potentially poisoned patient.

2. **Patient Care**
   a. Explain the value of history-taking and physical examination of the poisoned patient and the recognition of common toxidromes and their management.
   b. Explain how to educate patients and their families regarding mitigation of the risks of unintentional/accidental poisonings.
   c. Describe situations which may require the consultation and involvement of psychiatric and/or social services agencies in cases of intentional and unintentional poisonings.
   d. Describe the means of conveying the needs and continued care of the patient when transferring the care of the patient to other members of the healthcare team.
   e. Demonstrate the use of additional toxicologic resources and access to Poison Control to guide the management of the poisoned patient.

3. **Interpersonal and Communication Skills**
   a. Summarize how to effectively communicate and gather history from the poisoned patient, or their family/caregivers in the case of the patient with an altered mental status.
   b. Describe how to write the following:
      i. SOAP notes
      ii. Admission history and physicals
      iii. Admission orders
      iv. Procedure notes
      v. Procedure notes
   c. Describe the capabilities and utility of the electronic health record, Poisondex, online resources for toxicology references, and consultation with a medical toxicologist through the Regional Poison Center hotline.
d. Explain how to share the diagnostic plan of care and prognostic information with the patient and family.

4. **Professionalism**
   a. Summarize understanding and need for supervision, chaperones and/or assistance.
   b. Express an understanding of privacy and independence of adolescents and of the private individual interview of an adolescent during the interview process.
   c. Explain how sensitivity, empathy and responsiveness to diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation impacts care.
   d. Recognize that all patients in emergency situations shall receive care regardless of medical insurance coverage, ethnicity, race, or social economic status.

5. **Practice-Based Learning and Improvement**
   a. Apply fundamental epidemiologic concepts.
   b. Detail medical information sources for toxicology, evidence-based medicine, and research.
   c. Identify personal knowledge deficits, strengths, and limits through frequent self-reflection.
   d. Display the ability to locate additional educational resources and strengthen personal medical knowledge.

6. **Systems-Based Practice**
   a. Recognize quality patient care systems and how they may affect the larger health care systems.
   b. Discuss the cost and risk-benefit analysis in patient and/or populations-based care in different delivery systems and settings.
   c. Describe the methods and reporting requirements for possible intentional poisonings or accidental poisonings in adults and in children.

7. **Osteopathic Philosophy and Osteopathic Manipulative Medicine**
   The Four Tenets of Osteopathic Medicine: 1) The body is a unit; 2) Structure and function are interdependent; 3) The body has self-healing and self-regulatory capabilities; 4) Rational osteopathic care relies on the integration of these tenets in patient care.

C. **Study Guide**

The on-line student enrolled in the Toxicology Elective shall be required to complete the on-line learning modules which address all of the leaner-
centered objectives for the Toxicology Elective as listed above. These modules are not inclusive of all toxicologic emergencies and toxic ingestions but do include those that are more commonly seen. The student is strongly encouraged to watch all of the assigned video presentations and their associated recommended readings.

The required modules are found on the following website:

*Life in The Fast Lane:* litfl.com Go to Menu->Go to Library->Go to Toxicology Library.

Go to **Toxicology Library Basics.**
Review **RRSIDEAD**
Review **Acid-base disorders and Osmolar Gaps** video
Review **The 12-Lead ECG in Toxicology** video
Go to **Tox Conference Talks…**
Review the **Sodium Valproate Metabolism** video
Review the **Glucagon, Yay or Nay** video
Review the **Carbon Monoxide** video
Review the **Opioids** video
Review the **Sulfonylurea** video
Review the **Digoxin** video
Review the **Calcium Channel Blockers** video
Review the **Toxicology Flashcards**
Go to **Tox Tutes…**
Review **Tox Tute** video #1: **Resuscitation**
Review **Tox Tute** video #2: **Risk Assessment**
Review **Tox Tute** video #3: **SIDEAD**
Review **Tox Tute** video #4: **TCA**
Review **Tox Tute** video #5: **Cocaine**
Review **Tox Tute** video #6: **Amphetamine**
Review **Tox Tute** video #7: **Calcium Channel Blocker**
Review **Tox Tute** video #8: **Carbon Monoxide**
Review **Tox Tute** video #9: **GHB**
Review **Tox Tute** video #10: **Cyanide**

Go to **LITFL Further Reading**→**Drugs and Synthetic Toxicants**...
Read **Analgesia and Anti-inflammatories**
- Colchicine
- NSAIDs
- Paracetamol
- Paracetamol
- Salicylates
- Tramadol
Read **Antiarrhythmics**
- Digoxin
-Quinine

Read Anticonvulsants
- Benzodiazepines
- Carbamazepine
- Newer Agents
- Phenytoin
- Valproic Acid

Read Antidepressants
- Bupropion
- MAOI’s (Monoamine Oxidase Inhibitors)
- Mirtazapine
- SNRI’s (Selective Serotonin and Noradrenaline Reuptake Inhibitors)
- SSRI’s (Selective Serotonin Reuptake Inhibitors)
- TCA

Read Antihistamines
- Non-sedating antihistamines
- Sedating antihistamines

Read Antihypertensives
- Beta Blockers
- Calcium Channel Blockers
- Clonidine

Read Antipsychotics
- Amisulpride
- Benztpine
- Clozapine
- Lithium
- Olanzapine
- Phenothiazines and butyrophenones
- Quetiapine
- Risperidone

Read Ingestions
- Button Batteries
- Corrosives
- Glyphosphate
- Hydrofluoric Acid
- Hydrogen Peroxide
- Organochlorines
- Organophosphorus agents
- Paraquat
- Strychnine

Read Inhalation/Ingestion (gases, hydrocarbons)
- Carbon Monoxide
- Chlorine
D. **COMAT** There is no COMAT for this course but the following test is required:

This is a pass/fail course. There is no remediation for this elective.

The student must achieve a passing score on the Practice Test 2017 Tox, found on the SAEM website, and they must submit a screenshot or printed copy of the test result. Contact must be made with Mary Beth Fitch, SWC Northern Region Director to receive a username and password to gain access to the tests on this website.

1. The student must compose two (2) “board-style” multiple choice questions from the toxicology curriculum. The questions must meet the following requirements:

   a. These should be case-based.

   b. You must provide your rationale for the correct answer and explain why the other answer choices are incorrect.

   c. At the end each question with its accompanying rationale you must provide a list of references you used to create the question. The references need to be in AMA format. Any images used must have the reference information in AMA format next to the image/video.

   i. Your references need to be in AMA format. For guidance in getting them into the correct format please visit
ii. Use the following format if citing an UpToDate article:

Marion DW. Pacing the diaphragm: Patient selection, evaluation, implantation, and complications. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on January 04, 2018.)

d. Any questions not meeting these requirements will be sent back to you for amendment and will need to be resubmitted with the new date of submission at the end (see “f” below on how to save your question).

e. Please review the guidance “Writing medical board questions” and follow these guidelines when writing your questions. This guidance can be found in this syllabus below. There is an example question in the guidance, your question should be in a similar format.

f. You will submit your questions to my administrative assistant Ashley Millard at amillard@osteo.wvsom.edu. Your questions should be saved as a word document as follows: lastname.US.dateofsubmission for example, “Hrutkay.Tox.3.25.20”

2. The student must create a case-based Power Point presentation covering a toxicology patient case. The presentation must meet the following guidelines:

a. This should be a ten-minute presentation in given in a case presentation format.

b. You will notify me of your topic by the third day of the rotation.

c. Must have a slide with your objectives/outcomes.

d. Any images used in your presentation must have the reference information in AMA format next to the image/video.

e. General references used to create the presentation must be listed at the end, again in AMA format.

f. This presentation will be given virtually during an education day or for the EM residents and EM faculty during the Trinity Health System Emergency Medicine Didactics Program. This will be scheduled during the last week of this rotation. The presentation will be evaluated by the preceptor and the EM faculty in attendance.

g. Be sure to practice your presentation before you give it!

h. You will save your presentation as LastName.Title.Date. For example, Hrutkay.IronOverdose.3.25.20

i. Submit your final presentation to Dr. Lisa Hrutkay at lhrutkay@osteo.wvsom.edu.
This two-week elective course will be limited to no more than ten (10) students per each two-week offering. If the demand for the course exceeds the ten-student limit, the preceptor will work to accommodate these additional students in the following manner:

a) The preceptor will make contact with the students’ Regional Assistant Deans to attempt to make arrangements for additional assistance with the receipt and evaluation of the board-style questions that are required of the student.

b) The preceptor will make contact with the students’ Regional Assistant Deans to attempt to make arrangements for the student to deliver their Power Point presentations for the didactics program for an IM/EM/FM residency program within their respective regions. The student presentation would then be evaluated by the faculty at that residency program and by their Regional Assistant Dean instead of by the course preceptor and the faculty in the EM residency program at Trinity Health System.

E. Required Textbooks

Goldfrank’s Toxicologic Emergencies, 10th Edition
(Available on WVSOM On-Line Library)

(Available on Access Medicine on WVSOM On-Line Library)

F. Additional Resources

None

G. Didactic and Reading Assignments

All reading assignments are listed above and are available on the Life In The Fast Lane website. Supplemental in-depth reading on any of these topics can be found in the Goldfrank’s Toxicologic Emergencies or Tintinalli’s Emergency Medicine: A Comprehensive Study Guide online textbooks.

H. Grading/Calculations
The quizzes, presentations, and all submissions/resubmissions of board style test questions will need to be completed no later than 5 days following the last official day of the rotation. This is a 14 day rotation.

Upon successful completion of this curriculum and achievement of a passing score on the SAEM Practice Test 2017 Tox, the student will receive the average score for an Elective as determined by the WVSOM Office of Assessment.

**Guidance for Writing Board Style Questions**

Please find below general guidance on writing board style questions. This information is based on content found within the 4th edition of the manual produced by the National Board of Medical Examiners entitled “Constructing Written Test Questions For the Basic and Clinical Sciences”. Please use Chapter 6 in the manual to help you write your questions. You may find the manual at [https://www.nbme.org/sites/default/files/2020-01/IWW_Gold_Book.pdf](https://www.nbme.org/sites/default/files/2020-01/IWW_Gold_Book.pdf) or you may download it from the site [https://www.nbme.org/services/workshops-consultancy](https://www.nbme.org/services/workshops-consultancy).

**Overview of the steps to writing a question**
1. Determine the subject of the question
2. Determine which type of question it should be
3. Write the clinical vignette
4. Write the lead in question. Consider looking at the examples of different types of lead in questions before you start writing your clinical vignette.
5. List the answer choices (all of the answer choices must be plausible)
6. Provide your rationale i.e. discuss why the correct answer is the right answer and why the other answer choices are incorrect
7. List the references to support your rationale in AMA format. Use the site [https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html](https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html) to help you put your references into the correct format.

**Types of Test Questions (which should be in the form of a clinical vignette)**
1. Recall Questions – tests knowledge of facts or definitions
2. Interpretation Questions – requires review of information and makes the student reach a conclusion like a diagnosis
3. Problem-Solving Questions – Presents a situation and make the student take some action (next step in management)

**Each question should:**
1. Focus on important concepts, not trivial facts
2. Can be answered without looking at the options
3. Includes only relevant facts or data. No red herrings.
4. The question should not be tricky or too complex
5. Avoid negatively phrased lead ins (avoid using except or not)
6. Be grammatically correct

**Clinical Vignette Questions:**
1. Tests knowledge using a clinical vignette
2. Should focus on common or life-threatening problems
3. Avoid "zebras" or esoteric concepts
4. Avoid clinical situations that would be handled only by a specialist
5. Make sure to focus on content that you are expected to undertake at your next stage of training
6. Could also be on areas where clinical mistakes are often made

**Template for the Clinical Vignette**
Follow the template found towards the bottom of page 36 of the NBME Guide. Please also follow that order when writing your question.

**The Lead In Question…**
1. Must be a clear question so that the student can answer without looking at the options
2. Types of lead in questions
   a. Basic Science Lead In Questions: require clinical knowledge and knowledge of a foundational science principle that would have been learned during preclinical study but reinforced during clinical rotations. See page 40 of the guide for examples of these types of questions.
   b. Diagnosis Type Lead In Questions
      i. Obtaining and Predicting History and Physical Examination. See page 40 of the guide for examples of these types of questions.
      ii. Selecting and Interpreting Diagnostic Studies. See page 41 of the guide for examples of these types of questions.
      iii. Formulating the Diagnosis. See page 41 of the guide for examples of these types of questions.
      iv. Determining Prognosis/Outcome. See page 41 of the guide for examples of these types of questions.
   c. Management Type Lead In Questions
      i. Health Maintenance and Disease Prevention. See page 42 of the guide for examples of these types of questions.
      ii. Pharmacotherapy/Clinical Interventions and Treatments. See page 44 of the guide for examples of these types of questions.
   d. Mechanism of Disease Type of Lead In Questions - tests knowledge of pathophysiology in its broadest sense. See page 45 of the guide for examples of these types of questions.

**How to submit your questions and example of question format:**

You will send your questions as a word document via email to Ashley Millard at amillard@osteo.wvsom.edu. Your questions should be saved as a word
A 28-year-old medical student is at home writing his first board style question. He does not feel prepared to write these types of questions. He suddenly becomes diaphoretic and feels his heart racing. This episode lasted approximately 10 minutes and resolved when he took a break to walk his dog. He is healthy and his parents are also healthy. His roommate, also a medical student, examined him. He has a normal physical exam. Which of the following is his most likely diagnosis?

A. Myocardial infarction
B. Post-traumatic stress disorder
C. Alcohol withdrawal
D. Panic attack
E. Hypoglycemia

Rationale
The correct answer is D panic attack. This student is otherwise healthy as are his parents, therefore a myocardial infarction is not likely. Additionally, his age makes myocardial infarction much less likely. You have not been given a history of previous traumatic events he may be suffering from, therefore post-traumatic stress disorder is also unlikely. Since we have not been given his social history alcohol withdraw is also unlikely. His symptoms are most consistent with a panic attack and while these could also be symptoms of hypoglycemia, symptoms of hypoglycemia would have worsened while walking the dog. Walking the dog likely took his mind off of writing the question allowing his symptoms to resolve.

References

- Your references need to be in AMA format. For guidance in getting them into the correct format please visit https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html
- And use the following format if citing UpToDate:

Marion DW. Pacing the diaphragm: Patient selection, evaluation, implantation, and complications. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on January 04, 2018.)
# Grading Rubric for Presentation

This is how you will be evaluated on your presentation. All attendees will submit an evaluation form of your presentation.

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>Excellent (10/10)</th>
<th>Strong (9/10)</th>
<th>Good (8/10)</th>
<th>Adequate (7/10)</th>
<th>Inadequate (0/10)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization</strong></td>
<td>Highly organized and linear</td>
<td>Mostly linear and easy to follow</td>
<td>Adequate organization and flow</td>
<td>Could be better developed</td>
<td>Poorly organized; unexcused absence</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>Clear and met</td>
<td>Good and met</td>
<td>A little vague, but still appropriate</td>
<td>Adequate</td>
<td>Inadequate/none; unexcused absence</td>
</tr>
<tr>
<td><strong>Detail (and accuracy of content)</strong></td>
<td>Excellent, 100% accurate, and appropriate</td>
<td>Accurate and appropriate, at the right level, save for one or two exceptions</td>
<td>Average, maybe a little too detailed, or too general</td>
<td>Multiple content errors and/or detail too much or too vague</td>
<td>Most content is inaccurate; Definitely too detailed or too general; unexcused absence</td>
</tr>
<tr>
<td><strong>Errors in grammar, spelling</strong></td>
<td>None</td>
<td>Few</td>
<td>Some</td>
<td>Multiple</td>
<td>A lot; unexcused absence</td>
</tr>
<tr>
<td><strong>Presentation skills</strong></td>
<td>Spot on, Well-practiced, no fillers, highly engaging, no ticks</td>
<td>Practiced, few fillers, engaging, few, if any, ticks</td>
<td>Could be polished more, but overall appropriate, many fillers, inconsistent engagement with the audience</td>
<td>Adequate practice, but ideally would have practiced it much more, a lot of fillers, limited engagement with the audience</td>
<td>Lacking in engagement with the audience, Lacking in coherent speech; unexcused absence</td>
</tr>
<tr>
<td><strong>Visuals</strong></td>
<td>Excellent, not too busy or all words; appropriately cited</td>
<td>Nice images with good explanations/not es; information cited for the most part</td>
<td>On the side of too busy or wordy, hard to see images/busy</td>
<td>Definitely too busy/wordy, many unlabeled images</td>
<td>Lacking in visuals or so wordy it can’t be read through while listening, etc.; unexcused absence</td>
</tr>
<tr>
<td><strong>Time management</strong></td>
<td>Almost perfect: Started and ended on time, did not have to rush or slow down.</td>
<td>Started and ended on time, not rushed or finishing too early</td>
<td>Rushed a couple of slides, finished a little early; Spent too much time on a slide or two; ended late; no time for questions</td>
<td>Rushed a lot of slides or ended too early; Spent too much time on several slides; went over</td>
<td>Poorly timed, had many slides not covered or ended much too early; unexcused absence</td>
</tr>
</tbody>
</table>
Ultrasound Elective Rotation: Online Course Syllabus

2020-2021

Course director: Lisa Hrutkay, DO
lhrutkay@osteo.wvsom.edu
Office phone: 304-905-8495

Director, Northern Region: Mary Beth Fitch
mfitch@osteo.wvsom.edu
Office phone: 304-905-0306, Option 1

Administrative Assistant: Ashley Millard
amillard@osteo.wvsom.edu
Office phone: 304-905-0306, Option 2

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents an alternate syllabus to an actual clinically based ultrasound elective.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other.

A. Introduction

Thank you for participating in this course! I hope you'll enjoy learning the content. This is a self-directed course designed to teach you introductory point of care ultrasound (POCUS) principles and procedures.

This is designed to be a two week self-directed elective. You will watch videos demonstrating proper ultrasound techniques used in diagnosing and treating patients (refer to the Study Guide section for the complete listing). You will then complete three online ultrasound quizzes, write two board style questions related to ultrasound, and
deliver a 10 minute presentation on an ultrasound topic (refer to the Evaluation section of this syllabus for further details).

Read this syllabus in its entirety.

At the completion of the on-line learning program, the student will be expected to have gained sufficient medical knowledge and covered all of the core competencies set forth in this syllabus. This is a comprehensive introduction to bedside ultrasound methods and techniques but does not replace the value of the actual application of these techniques in a clinical setting. Additional clinical practice of these techniques is highly recommended for the student to become proficient with these skills. This learning program will make use of the on-line FOAMed (Free Open Access Medical Education) Program at www.sonomojo.org.

The student will be expected to complete the learning modules in their entirety and complete the post-testing.

B. Course (Rotation) Objectives and Core Competencies

1. Medical Knowledge
   a. Acquire an understanding of the basic physics behind ultrasound and the uses and applications of the various ultrasound transducers to obtain proper diagnostic images.
   b. Develop an understanding of the proper role of ultrasound in the diagnosis of individual patient pathology.
   c. Be able to identify circumstances in which ultrasound would be the first diagnostic test of choice and when it would not be the first choice.

2. Patient Care
   a. Explain interview and examination skills required to conduct screening for patients presenting with urgent and emergent conditions to see if bedside ultrasound may be an appropriate diagnostic test.
   b. Summarize the methods of explaining the ultrasound procedure to the patient to make them comfortable with the testing and to understand the benefits and limitations of ultrasound imaging.

3. Interpersonal and Communication Skills
   a. Summarize how to effectively communicate with and establish a good rapport with the patient who is presenting for assessment, as well as the family who accompany them.
   b. Explain how parental and patient concerns and perspectives including cultural and religious influences impact care.
b. Describe how to fully document the ultrasound procedure and how to capture and record the diagnostic images to place them into the patient’s health record.
c. Explain how to share the diagnostic findings, plan of care, and prognostic information with patients and families.

4. Professionalism
   a. Summarize understanding and the need for supervision, chaperones and/or assistance, depending upon the given circumstance.
   b. Detail an understanding of privacy and independence of adolescents and of the private individual interview of an adolescent during the interview process and diagnostic testing.
   c. Explain how sensitivity, empathy, and responsiveness to diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation impacts care.
   d. Recognize that all patients with an urgent or emergent complaint shall receive care regardless of medical insurance coverage, ethnicity, race, or social economic status.

5. Practice-Based learning and Improvement
   a. Be able to apply fundamental epidemiologic concepts to the patient population with which the student is working.
   b. Detail medical informatics, evidence-based medicine, and research.
   c. Be able to identify personal knowledge deficits, strengths, and limitations through frequent self-reflection.
   d. Explore the avenues through which additional educational resources can be located and use them to strengthen personal medical knowledge.
   e. Explain the methods of quality improvement.

6. Systems-Based Practice
   a. Discuss the cost and risk-benefit analysis in patient and/or populations-based care in different delivery systems and settings, as it pertains to diagnostic imaging modalities.

7. Osteopathic Philosophy and Osteopathic Manipulative Medicine
   The Four Tenets of Osteopathic Medicine:
   1) The body is a unit;
   2) Structure and function are interdependent;
   3) The body has self-healing and self-regulatory capabilities;
   4) Rational osteopathic care relies on the integration of these tenets in patients care.

C. Study Guide

The on-line learner shall be required to complete the on-line learning modules which address all of the selected specific learner-centered objectives for Point of Care
Ultrasound (POCUS) listed in this syllabus. These modules are not all-inclusive of all ultrasound training material, but they do include most of the commonly used diagnostic modalities. For optional additional resources see the “Other Resources” section below.

Module One: Ultrasound Basics
Assignments for Module One:
- Watch the YouTube video “Ultrasound Physics and Instrumentation” (48 minutes 5 seconds) by Chris Fox at (in this video the instructor is using the GE Logic V2 ultrasound)
  https://www.youtube.com/watch?v=531t0deTQwg&list=WL&index=37&t=0s
- Watch the YouTube video “Ultrasound Transducer Manipulation” (7 minutes 20 seconds) by Adam Collins at https://www.youtube.com/watch?v=RskrEsAGzec

Module Two: Abdomen
Assignments for Module Two:
- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on Abdominal Ultrasound Module
  - Read Sonoguide: “Renal”
  - Watch 5 Minute Sono: “Hydronephrosis”
  - Watch One Minute Ultrasound: “Kidney”
  - Watch Ultrasound Podcast: “Renal Ultrasound”
  - Watch Ultrasound Podcast: “Appendix”
  - Watch One Minute Ultrasound: “Small Bowel Obstruction”
  - Watch Ultrasound Podcast: “Small Bowel Obstruction”
  - Watch 5 Minute Sono: “SBO”
  - Watch One Minute Ultrasound: “Gallbladder”
  - Watch Ultrasound Podcast: “Gallbladder”
  - Watch USC Ultrasound Learning Module: “Liver”
  - Watch USC Ultrasound Learning Module: “Spleen Ultrasound”
  - Watch 5 Minute Sono: “Bladder Volume”
  - Watch USC Ultrasound Learning Module: “Bladder and Ureter Ultrasound”
  - Watch Ultrasound Podcast: “Using Ultrasound for Hernias”
  - Watch Ultrasound Podcast: “Bonus Hernia”

Module Three: Cardiac Ultrasound
Assignments for Module Three:
- Watch the YouTube video “Bedside Ultrasound Basic Cardiac US” (19 minutes 21 seconds) by POCUS Geek at https://www.youtube.com/watch?v=C60jGZisiPrs
- Watch the YouTube video “Estimating Ejection Fraction with Point of Care Echo” (11 minutes 9 seconds) by Synthesis Medical Education at https://www.youtube.com/watch?v=JJZgO8ML0tk
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on Cardiac Ultrasound Module
  o Read SonoGuide: “Cardiac”
  o Watch One Minute Ultrasound: “Basic Cardiac”
  o Watch Castlefest: “Best Cardiac Ultrasound”
  o Watch Ultrasound Podcast: “ECHO ECHO ECHO”
  o Watch One Minute Ultrasound: “EPSS”
  o Watch Ultrasound Podcast: “E-Point Septal Separation”
  o Watch 5 Minute Sono: “Cardiac Function”
  o Watch One Minute Ultrasound: “Passive Leg Raise”
  o Watch One Minute Ultrasound: “Wall Motion”
  o Watch Ultrasound Podcast: “Wall Motion”
  o Watch 5 Minute Sono: “Right Heart Strain”
  o Watch One Minute Ultrasound: “Diastology”
  o Watch Ultrasound Podcast: “Diastology Part 1”
  o Watch Ultrasound Podcast: “Diastology Part 2”
  o Watch Ultrasound Podcast: “Diastology How To”
  o Watch Ultrasound Podcast: “Ultrasound of Valves Part 2”
  o Watch Ultrasound Podcast: “TEE Part 1, Part 2”
  o Watch Ultrasound Podcast: “Pericardial Tamponade Part 1, Part 2”

Module Four: Lung Ultrasound
Assignments for Module Four:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on Lung Ultrasound Module
  o Watch Ultrasound Podcast: “Dyspnea”
  o Watch Ultrasound Podcast: “Lung Ultrasound” with Mike Stone Part 1, Part 2
  o Watch Ultrasound Podcast: “Lung Ultrasound” with Vicki Noble Part 1, Part 2
  o Watch 5 Minute Sono: “Pulmonary Edema”
  o Watch Ultrasound Podcast: “Multi-Organ Ultrasound for PE”
  o Watch 5 Minute Sono: “PE”
  o Watch 5 Minute Sono: “Pneumonia”
  o Watch 5 Minute Sono: “Pleural Effusion”
  o Watch 5 Minute Sono: “Pneumothorax”

Module Five: FAST and eFAST
Assignments for Module Five:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on Trauma Ultrasound Module
  o Read Quickhits: Life in the eFAST Lane” Part 1, Part 2, Part 3
  o Watch One Minute Ultrasound: “FAST”
  o Watch Ultrasound Podcast Cliff Reid: “eFAST”
Module Six: Fluid Responsiveness and Hypotension
Assignments for Module Six:

- Go to the website www.sonomojo.org ➔ Go to Learning Modules ➔ Click on FOAMed Ultrasound Curriculum ➔ Click on Fluid Responsiveness Ultrasound Module
  - Watch One Minute Ultrasound: “IVC”
  - Watch 5 Minute Sono: “Fluid Responsiveness”
  - Watch Ultrasound Podcast: Fluid Responsiveness, Part 1 and Part 2
  - Watch Ultrasound Podcast: “Integrated Ultrasound Approach to Fluid Responsiveness”
  - Watch Ultrasound Podcast: “Carotid VTI Passive Leg Raise for Volume Responsiveness”
- Go to the website www.sonomojo.org ➔ Go to Learning Modules ➔ Click on FOAMed Ultrasound Curriculum ➔ Click on the RUSH Protocol Module
  - Watch Ultrasound Podcast: “RUSH Part 1, Part 2”
  - Watch 5 Minute Sono: “RUSH Exam”

Module Seven: Vascular Ultrasound
Assignments for Module Seven:

- Go to the website www.sonomojo.org ➔ Go to Learning Modules ➔ Click on FOAMed Ultrasound Curriculum ➔ Click on the Vascular Ultrasound Module
  - Read SonoGuide: “DVT”
  - Watch One Minute Ultrasound: “DVT”
  - Watch Ultrasound Podcast: “DVT”
  - Watch Ultrasound Podcast: “DVT How To”
  - Watch Ultrasound Podcast: “DVT: The Whole Leg Approach”
  - Read SonoGuide: “Aorta”
  - Watch One Minute Ultrasound: “Aorta”
  - Watch Mike Stone Vimeo: “How I Scan the Aorta”
  - Watch One Minute Ultrasound: “IVC”
  - Watch Academy of Emergency Ultrasound Vimeo: IVC Ultrasound”

Module Eight: Musculoskeletal Ultrasound
Assignments for Module Eight:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Musculoskeletal Ultrasound Module
  o Read SonoGuide: “MSK Overview”
  o Watch Mike Stone Vimeo: “MSK”
  o Watch Academy of Emergency Ultrasound: “Musculoskeletal Ultrasound: Muscles and Tendons”
  o Watch Ultrasound Podcast: “Hip Ultrasound, Aspiration and Injection”
  o Watch One Minute Ultrasound: “Shoulder Dislocation”
  o Read SonoGuide: “Sternum”
  o Read SonoGuide: “Ribs”
  o Watch Ultrasound Podcast: “Scanning the Scaphoid”
  o Watch Ultrasound Podcast: “Ultrasound of Radius Fracture”

Module Nine: Soft Tissue Ultrasound
Assignments for Module Nine:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Soft Tissue Ultrasound Module
  o Read SonoGuide: “Soft Tissue Ultrasound”
  o Read SonoGuide: “Foreign Bodies”
  o Watch One Minute Ultrasound: “Soft Tissue”
  o Watch 5 Minute Sono: “Soft Tissue”

Module Ten: Female Pelvic Ultrasound
Assignments for Module Ten:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Female Pelvic Ultrasound Module
  o Read SonoGuide: “Ultrasound in Early Pregnancy”
  o Watch One Minute Ultrasound: “Intrauterine Pregnancy (IUP)”
  o Watch One Minute Ultrasound: “Transvaginal Ultrasound”
  o Watch Mike Stone Vimeo: “Essential 1st Trimester Pelvic Ultrasound”
  o Watch Ultrasound Podcast: “Ultrasound for Late Pregnancy”
  o Watch 5 Minute Sono: “Fetal Heart Rate”

Module Eleven: Small Parts Ultrasound
Assignments for Module Eleven:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Small Parts Ultrasound Module
  o Read SonoGuide: “ENT Ultrasound Applications”
  o Watch Ultrasound Podcast: “Peritonsillar Abscess”
  o Watch USC Ultrasound Learning Modules: “Thyroid”
Module Twelve: Ocular Ultrasound
Assignments for Module Twelve:
- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Ocular Ultrasound Module
  - Read SonoMojo: “Keeping an Eye on Intracranial Pressure: Detecting Elevated ICP Using Ocular Ultrasound”
  - Watch One Minute Ultrasound: “Ocular Ultrasound”
  - Watch Ultrasound Podcast: “Ocular Ultrasound”
  - Watch EMCRIT Podcast: “High ICP Herniation”

Module Thirteen: Pediatric Ultrasound
Assignments for Module Thirteen:
- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Pediatric Ultrasound Module
  - Watch UCI Ultrasound in MedEd iTunes: “Pediatrics”
  - Watch Geoff Hayden’s Vimeo: “Peds ECHO”
  - Watch AEUS Vimeo: “Pyloric Stenosis”
  - Watch AEUS Vimeo: “Intussusception”

Module Fourteen: Consents and Time Outs
Assignments for Module Fourteen:
- Watch the YouTube video “Informed Consent Checklist” by Pedro Tanaka at https://www.youtube.com/watch?v=AN8CdzQj6xk (7 minutes, 2 seconds)
- Read the UpToDate articles “Informed procedural consent” and “Ethics in the intensive care unit: Informed consent”
- Watch the YouTube video “Bedside Procedure Time Out” by UnitedMemorial MedicalCenter 1 minute 53 seconds at https://www.youtube.com/watch?v=-gO2cV38vZo
- Watch the YouTube video “Time Out: Universal Protocol at University Hospital” by University Health System (1 minutes 28 seconds) at https://www.youtube.com/watch?v=pDXQemdSwlY
Module Fifteen: Ultrasound Guided Procedures
Assignments for Module Fifteen:

- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Ultrasound Guided Vascular Access Module
  - Read SonoGuide: “Vascular Access”
  - Watch Mike Stone Vimeo: “Short Axis, Out of Plane Technique”
  - Watch Mike Stone Vimeo: “Long Axis, In Plane Technique”
  - Watch One Minute Ultrasound: “IV Placement”
  - Watch Ultrasound Podcast: “Ultrasound Guided Peripheral IV’s”
  - Watch One Minute Ultrasound: “IJ Ultrasound”
  - Watch Ultrasound Podcast Microcast: “IJ Placement”
  - Watch Ultrasound Podcast: “Wire in Needle a Win for Needle Visualization”
  - Watch 5 Minute Sono: “Superficial Cervical Plexus Block”
  - Watch Ultrasound Podcast Microcast: “Radial Arterial Line Insertion”

FYI (this is optional): The New England Journal of Medicine (NEJM) has several “Videos in Clinical Medicine” that thoroughly demonstrate how to do various procedures including ultrasound guided procedures. To access the NEJM videos log into the NEJM website through the WVSOM Library website. Once you are logged in click on the heading “Multimedia” then choose “Videos in Clinical Medicine” from the drop down menu, then simply scroll through them to find the video that you would like to watch. Each video has a written article summarizing the content in the video. This is an excellent resource.

Module Sixteen: Useful Protocols Module
Assignments for Module Sixteen:

- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Useful Protocols Module
  - Watch Ultrasound Podcast: “EGLS”
  - Watch Ultrasound Podcast: “Ultrasound Guided CPR Part 1, Part 2”

- **Watch the YouTube video** “POCUS and CPR: First Do No Harm” (13 minutes 13 seconds) by Michael Schick at [https://www.youtube.com/watch?v=yEaDWPMDJIl](https://www.youtube.com/watch?v=yEaDWPMDJIl)


D. COMAT Blueprint
There is no COMAT Exam for the Ultrasound On-Line Elective. Please refer to the Evaluation section of this syllabus for information regarding measurement of the student’s acquired knowledge in bedside ultrasound.

E. Required Textbooks

There are no required texts for this elective. All learning is done through the available on-line readings, videos and podcasts listed in the syllabus.

F. Additional Resources

The *Life in the Fast Lane* website offers a large and diverse library of ultrasound quizzes which are highly recommended for the student for review at the completion of this course.

There are many eBooks available to be referenced by the student through the WVSOM library:

- **Access Medicine**
  -- "Pocket Guide to POCUS: Point of Care Tips for Point of Care Ultrasound"

- **Clinical Key**
  -- "Point of Care Ultrasound"
  -- "Clinical Doppler Ultrasound"
  -- "Clinical Ultrasound"
  -- "Critical Care Ultrasound"
  -- "Critical Care Ultrasound Manual"
  -- "Diagnostic Ultrasound"
  -- "Essential Applications of Musculoskeletal Ultrasound in Rheumatology"
  -- "Fundamentals of Musculoskeletal Ultrasound"
  -- "Gynecologic Ultrasound: A Problem-Based Approach"
  -- "Neuromuscular Ultrasound"
  -- "Practical Musculoskeletal Ultrasound"
  -- "Principles of Vascular and Intravascular Ultrasound"
  -- "Ultrasound in Musculoskeletal Injections"
  -- "Ultrasound: The Requisites"

G. Didactic and Reading Assignments

All reading and required on-line videos are thoroughly outlined under the Study Plan. It is also highly recommended that the student review a minimum of fifty (50) of the Top 100 Ultrasound Case Quizzes found on the website, *Life in the Fast Lane*. Ultrasound is a patient-focused manual skill and complete competency in this skill cannot be fully achieved without patient contact and practice. It is highly recommended that the
student seek out and arrange for practice with this skill in a clinical setting, when circumstances permit the return to clinical rotations.

H. Evaluation

This is a pass/fail course. There is no remediation for this elective.

1. Pass the three short quizzes found on the SonoMojo website.
   a. Go to www.sonomojo.org
   b. Hover over the “Learning Modules” tab
   c. Click on “SonoQuizzes”
   d. Take all three quizzes as many times as needed to “pass” the quiz
   e. Save all three completed quizzes as PDF files and email them to Ashley Millard at amillard@osteo.wvsom.edu.

2. The student will also be required to compose two (2) “board style” multiple choice questions from the ultrasound curriculum. The questions must meet the following requirements:
   a. These should be case-based and should include ultrasound images, if applicable.
   b. You must provide your rationale for the correct answer and explain why the other answer choices are incorrect
   c. At the end each question with its accompanying rationale you must provide a list of references you used to create the question. The references need to be in AMA format. Any images used must have the reference information in AMA format next to the image/video.
      i. Your references need to be in AMA format. For guidance in getting them into the correct format please visit https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html
      ii. Use the following format if citing an UpToDate article:
          Marion DW. Pacing the diaphragm: Patient selection, evaluation, implantation, and complications. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on January 04, 2018.)
   d. Any questions not meeting these requirements will be sent back to you for you to amend and will need to be resubmitted with the new date of submission at the end (see “f” below on how to save your question).
   e. Please review the guidance “Writing medical board questions” and follow these guidelines when writing your questions. This guidance can be found in this syllabus below. There is an example question in the guidance, your question should be in a similar format.
   f. You will submit your questions to my administrative assistant Ashley Millard at amillard@osteo.wvsom.edu. Your questions should be saved
as a word document as follows: lastname.US.dateofsubmission for example, “Hrutkay.US.3.25.20”

3. The student will be required to create a Power Point presentation based on a patient case utilizing ultrasound in the diagnostic workup. The presentation must meet the following guidelines.
   a. This should be a ten-minute presentation in given in a case presentation format.
   b. You will notify me of your topic by the third day of the rotation.
   c. Must have a slide with your objectives/outcomes
   d. The presentation should include diagnostic ultrasound images/videos. Any images used must have the reference information in AMA format next to the image/video.
   e. General references used to create the presentation must be listed at the end, again in AMA format.
   f. This presentation will be given virtually during an education day or for the EM residents and EM faculty during the Trinity Health System Emergency Medicine Didactics Program. This will be scheduled during the last week of this rotation. The presentation will be evaluated by the preceptor and everyone in attendance.
   g. Be sure to practice your presentation before you give it!
   h. You will save your presentation as LastName.Title.Date. For example, Hrutkay.OcularUltrasound.3.25.20
   i. Submit your final presentation to Lisa Hrutkay, Northern Regional Assistant Dean at lhrutkay@osteowvsom.edu.

4. This two-week elective course will be limited to no more than ten (10) students per each two-week offering. If the demand for the course exceeds the ten-student limit, the preceptor will work to accommodate these additional students in the following manner:

   a. The preceptor will make contact with the students’ Regional Assistant Deans to attempt to make arrangements for additional assistance with the receipt and evaluation of the board-style questions that are required of the student.

   b. The preceptor will make contact with the students’ Regional Assistant Deans to attempt to make arrangements for the student to deliver their Power Point presentations for the didactics program for an IM/EM/FM residency program within their respective regions. The student presentation would then be evaluated by the faculty at that residency program and by their Regional Assistant Dean instead of by the course
preceptor and the faculty in the EM residency program at Trinity Health System.

5. The quizzes and all submissions/resubmissions of board style test questions will need to be completed no later than 5 days following the last official day of the rotation. This is a 14 day rotation.

6. Just an FYI (and I hate to even say it) but failure to complete the above is considered a violation of WVSOM’s policy on student professionalism Institutional Policy ST-01 (https://www.wvsom.edu/About/policies_procedures) and will be reported as such. I know that this will not be a problem with anyone taking this course!

I. Grading/Calculations

Successful completion of the online course modules and the post tests will be factored into passage of the elective. A letter grade will be assigned for this rotation by the preceptor upon receipt of the proof of successful completion of the three on-line quizzes, the preceptors assessment of the quality of the board-style questions submitted by the student, and the combined scoring of the ultrasound presentation given at Trinity EM Didactics Program.

Please note the following:

The preceptor (if an email address is on file) will receive an email with a link to the Clinical Education Grade Form to complete before the end of the rotation. The student needs to inquire if the preceptor/supervising physician has received the email with the link to the form. If the Preceptor/supervising physician did not receive the email, then the student must provide a paper grade form to be completed and faxed or mailed to the SWC regional office.

The student is responsible for ensuring that the grade form is submitted in a timely fashion and should follow-up with the preceptor, if necessary.

Guidance for Writing Board Style Questions
Please find below general guidance on writing board style questions. This information is based on content found within the 4th edition of the manual produced by the National Board of Medical Examiners entitled “Constructing Written Test Questions For the Basic and Clinical Sciences”. Please use Chapter 6 in the manual to help you write your questions. You may find the manual at https://www.nbme.org/sites/default/files/2020-01/IWW_Gold_Book.pdf or you may download it from the site https://www.nbme.org/services/workshops-consultancy
Overview of the steps to writing a question
1. Determine the subject of the question
2. Determine which type of question it should be
3. Write the clinical vignette
4. Write the lead in question. Consider looking at the examples of different types of lead in questions before you start writing your clinical vignette.
5. List the answer choices (all of the answer choices must be plausible)
6. Provide your rationale i.e. discuss why the correct answer is the right answer and why the other answer choices are incorrect
7. List the references to support your rationale in AMA format. Use the site [https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html](https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html) to help you put your references into the correct format.

Types of Test Questions (which should be in the form of a clinical vignette)
1. Recall Questions – tests knowledge of facts or definitions
2. Interpretation Questions – requires review of information and makes the student reach a conclusion like a diagnosis
3. Problem-Solving Questions – Presents a situation and make the student take some action (next step in management)

Each question should:
1. Focus on important concepts, not trivial facts
2. Can be answered without looking at the options
3. Includes only relevant facts or data. No red herrings.
4. The question should not be tricky or too complex
5. Avoid negatively phrased lead ins (avoid using except or not)
6. Be grammatically correct

Clinical Vignette Questions:
1. Tests knowledge using a clinical vignette
2. Should focus on common or life-threatening problems
3. Avoid “zebras” or esoteric concepts
4. Avoid clinical situations that would be handled only by a specialist
5. Make sure to focus on content that you are expected to undertake at your next stage of training
6. Could also be on areas where clinical mistakes are often made

Template for the Clinical Vignette
Follow the template found towards the bottom of page 36 of the NBME Guide. Please also follow that order when writing your question.

The Lead In Question…
1. Must be a clear question so that the student can answer without looking at the options
2. Types of lead in questions
a. Basic Science Lead In Questions: require clinical knowledge and knowledge of a foundational science principle that would have been learned during preclinical study but reinforced during clinical rotations. See page 40 of the guide for examples of these types of questions.
b. Diagnosis Type Lead In Questions
   v. Obtaining and Predicting History and Physical Examination. See page 40 of the guide for examples of these types of questions.
   vi. Selecting and Interpreting Diagnostic Studies. See page 41 of the guide for examples of these types of questions.
   vii. Formulating the Diagnosis. See page 41 of the guide for examples of these types of questions.
   viii. Determining Prognosis/Outcome. See page 41 of the guide for examples of these types of questions.
c. Management Type Lead In Questions
   i. Health Maintenance and Disease Prevention. See page 42 of the guide for examples of these types of questions.
   ii. Pharmacotherapy/Clinical Interventions and Treatments. See page 44 of the guide for examples of these types of questions.
d. Mechanism of Disease Type of Lead In Questions - tests knowledge of pathophysiology in its broadest sense. See page 45 of the guide for examples of these types of questions.

How to submit your questions and example of question format:

You will send your questions as a word document via email to Ashley Millard at amillard@osteowvsom.edu. Your questions should be saved as a word document as follows: lastname.US.dateofsubmission for example, “Hrutkay.US.3.25.20”

A 28 year old medical student is at home writing his first board style question. He does not feel prepared to write these types of questions. He suddenly becomes diaphoretic and feels his heart racing. This episode lasted approximately 10 minutes and resolved when he took a break to walk his dog. He is healthy and his parents are also healthy. His roommate, also a medical student, examined him. He has a normal physical exam. Which of the following is his most likely diagnosis?

   A. Myocardial infarction
   B. Post-traumatic stress disorder
   C. Alcohol withdraw
   D. Panic attack
   E. Hypoglycemia

Rationale
The correct answer is D panic attack. This student is otherwise healthy as are his parents, therefore a myocardial infarction is not likely. Additionally, his age makes myocardial infarction much less likely. You have not been given a history of previous traumatic events he may be suffering from, therefore post-traumatic stress disorder is also unlikely. Since we have not been given his social history alcohol withdraw is also unlikely. His symptoms are most consistent with a panic attack and while these could also be symptoms of hypoglycemia, symptoms of hypoglycemia would have worsened while walking the dog. Walking the dog likely took his mind off of writing the question allowing his symptoms to resolve.

References

- Your references need to be in AMA format. For guidance in getting them into the correct format please visit https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html
- And use the following format if citing UpToDate: Marion DW. Pacing the diaphragm: Patient selection, evaluation, implantation, and complications. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on January 04, 2018.)

Grading Rubric for Presentation
This is how you will be evaluated on your presentation. All attendees will submit an evaluation form of your presentation.

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>Excellent (10/10)</th>
<th>Strong (9/10)</th>
<th>Good (8/10)</th>
<th>Adequate (7/10)</th>
<th>Inadequate (0/10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Highly organized and linear</td>
<td>Mostly linear and easy to follow</td>
<td>Adequate organization and flow</td>
<td>Could be better developed</td>
<td>Poorly organized; unexcused absence</td>
</tr>
<tr>
<td>Objectives</td>
<td>Clear and met</td>
<td>Good and met</td>
<td>A little vague, but still appropriate</td>
<td>Adequate</td>
<td>Inadequate/ none; unexcused absence</td>
</tr>
<tr>
<td>Detail (and accuracy of content)</td>
<td>Excellent, 100% accurate, and appropriate</td>
<td>Accurate and appropriate, at the right level, save for one or two exceptions</td>
<td>Average, maybe a little too detailed, or too general</td>
<td>Multiple content errors and/or detail too much or too vague</td>
<td>Most content is inaccurate; Definitely too detailed or too general; unexcused absence</td>
</tr>
<tr>
<td>Errors in grammar, spelling</td>
<td>None</td>
<td>Few</td>
<td>Some</td>
<td>Multiple</td>
<td>A lot; unexcused absence</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------</td>
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<td>----------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Presentation skills</td>
<td>Spot on, Well-practiced, no fillers, highly engaging, no ticks</td>
<td>Practiced, few fillers, engaging, few, if any, ticks</td>
<td>Could be polished more, but overall appropriate, many fillers, inconsistent engagement with the audience</td>
<td>Adequate practice, but ideally would have practiced it much more, a lot of fillers, limited engagement with the audience</td>
<td>Lacking in engagement with the audience, Lacking in coherent speech; unexcused absence</td>
</tr>
<tr>
<td>Visuals</td>
<td>Excellent, not too busy or all words; appropriately cited</td>
<td>Nice images with good explanations/not es; information cited for the most part</td>
<td>On the side of too busy or wordy, hard to see images/busy</td>
<td>Definitely too busy/wordy, many unlabeled images</td>
<td>Lacking in visuals or so wordy it can’t be read through while listening, etc.; unexcused absence</td>
</tr>
<tr>
<td>Time management</td>
<td>Almost perfect: Started and ended on time, did not have to rush or slow down.</td>
<td>Started and ended on time, not rushed or finishing too early</td>
<td>Rushed a couple of slides, finished a little early; Spent too much time on a slide or two; ended late; no time for questions</td>
<td>Rushed a lot of slides or ended too early; Spent too much time on several slides; went over</td>
<td>Poorly timed, had many slides not covered or ended much too early; unexcused absence</td>
</tr>
</tbody>
</table>
Opioid Use Disorder and Treatment Elective

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents an alternate syllabus to the course.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other.

A. Introduction

This is a two-week rotation. This rotation may be scheduled as a two-week rotation to occur in a consecutive 2-week time period.

B. Course (Rotation) Objectives and Core Competencies

1. Medical Knowledge
   At the conclusion of this rotation, the student will demonstrate medical knowledge, understanding of disease process, and the student’s ability to apply cognitive skills in differential diagnosis as it relates to the assigned modules related to Opioid Use Disorder, Pain Management, Addictions, and MAT.

2. Patient Care
   Explain how to educate patients and/or caregivers and evaluate their comprehension of the diagnosis and treatment plan, including conveying clinical condition and obtaining informed consent prior to procedures.

3. Interpersonal and Communication Skills
   a. Summarize how to effectively communicate with patients, their family members, and the healthcare team regarding substance use disorders and pain.
   b. Explain how parental and patient concerns and perspectives including cultural and religious influences impact care of substance use disorders and pain.
c. Explain how to share diagnostic plan of care, and prognostic information with patients and families regarding substance use disorders and pain.

4. **Professionalism**
   a. Detail an understanding of privacy and independence of adults and adolescents with substance use problems.
   b. Explain how sensitivity, empathy and responsiveness to diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation impacts care of individuals with substance use disorders and pain.

5. **Systems-based Practice**
   Student will demonstrate the ability to understand his/her role as a member of the health care team, the student’s understanding of local community medical resources, and the student’s understanding of providing effective and cost effective medicine related to substance use.

6. **Osteopathic Relevance**
   Substance Use disorder and the Opioid Crisis is a crisis of mind-body-and-spirit. Competent care involves sensitive, respectful use of CDC guidelines and evidence-based best practices. Pain management using the least dangerous forms, particularly OMM, is in line with Osteopathic relevance.

C. **Study Guide**
   Using Online PCSS, the student will complete 35 modules on [https://onlinemeded.org/spa/cases](https://onlinemeded.org/spa/cases)

D. **COMAT Blueprint**
   N/A

E. **Required textbooks**
   None

F. **Other resources**
   Evidence Medicine Sites:
   - [www.ahrq.gov/clinic/cps3dix.htm](http://www.ahrq.gov/clinic/cps3dix.htm)
   - [www.clinicalkey.com](http://www.clinicalkey.com)
   - [www.cochrane.org/](http://www.cochrane.org/)

G. **Didactic and reading assignments**
   As above
H. Additional Recommendations

None

I. Patient Procedure Logs

None.

J. Grading/Calculations

Successful completion of assigned online course modules (pass is 70% on each module quiz) constitutes passage for the Elective.
Toxicology Elective

Course Number:

Course director: Lisa Hrutkay, DO
lhrutkay@osteo.wvsom.edu
Office phone: 304-905-8495

Director, Northern Region: Mary Beth Fitch
mfitch@osteo.wvsom.edu
Office phone: 304-905-0306, Option 1

Administrative Assistant: Ashley Millard
amillard@osteo.wvsom.edu
Office phone: 304-905-0306, Option 2

In response to a widespread emergency affecting multiple hospitals and other clinical learning sites, this represents a syllabus for an elective course available via on-line learning.

This syllabus is only to be used when the student is notified of such by the Associate Dean of Predoctoral Clinical Education or his/her designees in response to a severe disruption or other dire circumstances that preclude access to clinical learning by direct or indirect patient care.

This syllabus will describe remote learning, including but not limited to delivery methods such as readings, online modules, video presentations, or other.

I. Introduction
This is designed to be a two-week self-directed elective. The student will watch on-line learning modules available at no cost which cover the basic core of medical toxicology material.

At the completion of the on-line learning program, the student will be expected to have gained sufficient knowledge and covered all of the core competencies involving the management of toxicologic emergencies. This will be achieved through the use of Toxicology Library located in the Life in the Fast Lane (litfl.com) website and
supplemental readings. Competency in the subject matter will be assessed through the on-line testing module for toxicology on the SAEM website.

J. Course (Rotation) Objectives and Core Competencies

8. **Medical Knowledge**
   
e. Acquire the knowledge needed for the diagnosis and initial management of toxicologic exposures.
   
f. Acquire the ability to formulate an appropriate workup plan for the potentially poisoned patient.
   
g. Demonstrate the ability to formulate a differential diagnosis for the patient with an accidental or intentional poisoning.
   
h. Be able to describe and identify the commonly seen toxidromes in a potentially poisoned patient.

9. **Patient Care**
   
f. Explain the value of history-taking and physical examination of the poisoned patient and the recognition of common toxidromes and their management.
   
g. Explain how to educate patients and their families regarding mitigation of the risks of unintentional/accidental poisonings.
   
h. Describe situations which may require the consultation and involvement of psychiatric and/or social services agencies in cases of intentional and unintentional poisonings.
   
i. Describe the means of conveying the needs and continued care of the patient when transferring the care of the patient to other members of the healthcare team.
   
j. Demonstrate the use of additional toxicologic resources and access to Poison Control to guide the management of the poisoned patient.

10. **Interpersonal and Communication Skills**
   
e. Summarize how to effectively communicate and gather history from the poisoned patient, or their family/caregivers in the case of the patient with an altered mental status.
   
f. Describe how to write the following:
      
      i. SOAP notes
      ii. Admission history and physicals
      iii. Admission orders
      iv. Procedure notes
      v. Procedure notes
   
g. Describe the capabilities and utility of the electronic health record, Poisondex, online resources for toxicology references, and consultation with a medical toxicologist through the Regional Poison Center hotline.
h. Explain how to share the diagnostic plan of care and prognostic information with the patient and family.

11. **Professionalism**
   a. Summarize understanding and need for supervision, chaperones and/or assistance.
   b. Express an understanding of privacy and independence of adolescents and of the private individual interview of an adolescent during the interview process.
   c. Explain how sensitivity, empathy and responsiveness to diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation impacts care.
   d. Recognize that all patients in emergency situations shall receive care regardless of medical insurance coverage, ethnicity, race, or social economic status.

12. **Practice-Based Learning and Improvement**
   a. Apply fundamental epidemiologic concepts.
   b. Detail medical information sources for toxicology, evidence-based medicine, and research.
   c. Identify personal knowledge deficits, strengths, and limits through frequent self-reflection.
   d. Display the ability to locate additional educational resources and strengthen personal medical knowledge.

13. **Systems-Based Practice**
   a. Recognize quality patient care systems and how they may affect the larger health care systems.
   b. Discuss the cost and risk-benefit analysis in patient and/or populations-based care in different delivery systems and settings.
   c. Describe the methods and reporting requirements for possible intentional poisonings or accidental poisonings in adults and in children.

14. **Osteopathic Philosophy and Osteopathic Manipulative Medicine**
   The Four Tenets of Osteopathic Medicine: 1) The body is a unit; 2) Structure and function are interdependent; 3) The body has self-healing and self-regulatory capabilities; 4) Rational osteopathic care relies on the integration of these tenets in patient care.

K. **Study Guide**

The on-line student enrolled in the Toxicology Elective shall be required to complete the on-line learning modules which address all of the learner-centered
objectives for the Toxicology Elective as listed above. These modules are not inclusive of all toxicologic emergencies and toxic ingestions but do include those that are more commonly seen. The student is strongly encouraged to watch all of the assigned video presentations and their associated recommended readings.

The required modules are found on the following website:

**Life in The Fast Lane:** litfl.com  Go to Menu->Go to Library->Go to Toxicology Library.

Go to **Toxicology Library Basics.**
Review **RRSIDEAD**
Review **Acid-base disorders and Osmolar Gaps** video
Review **The 12-Lead ECG in Toxicology** video
Go to **Tox Conference Talks…**
   Review the **Sodium Valproate Metabolism** video
   Review the **Glucagon, Yay or Nay** video
   Review the **Carbon Monoxide** video
   Review the **Opioids** video
   Review the **Sulfonylurea** video
   Review the **Digoxin** video
   Review the **Calcium Channel Blockers** video
Review the **Toxicology Flashcards**
Go to **Tox Tutes…**
   Review **Tox Tute** video #1: **Resuscitation**
   Review **Tox Tute** video #2: **Risk Assessment**
   Review **Tox Tute** video #3: **SIDEAD**
   Review **Tox Tute** video #4: **TCA**
   Review **Tox Tute** video #5: **Cocaine**
   Review **Tox Tute** video #6: **Amphetamine**
   Review **Tox Tute** video #7: **Calcium Channel Blocker**
   Review **Tox Tute** video #8: **Carbon Monoxide**
   Review **Tox Tute** video #9: **GHB**
   Review **Tox Tute** video #10: **Cyanide**
Go to **LITFL Further Reading** » **Drugs and Synthetic Toxicants**…
Read **Analgesia and Anti-inflammatories**
   - **Colchicine**
   - **NSAIDs**
   - **Paracetamol**
   - **Salicylates**
   - **Tramadol**
Read **Antiarrhythmics**
   - **Digoxin**

93
-Quinine

Read Anticonvulsants
- Benzodiazepines
- Carbamazepine
- Newer Agents
- Phenytoin
- Valproic Acid

Read Antidepressants
- Bupropion
- MAOI’s (Monoamine Oxidase Inhibitors)
- Mirtazapine
- SNRI’s (Selective Serotonin and Noradrenaline Reuptake Inhibitors)
- SSRI’s (Selective Serotonin Reuptake Inhibitors)
- TCA

Read Antihistamines
- Non-sedating antihistamines
- Sedating antihistamines

Read Antihypertensives
- Beta Blockers
- Calcium Channel Blockers
- Clonidine

Read Antipsychotics
- Amisulpride
- Benztrapine
- Clozapine
- Lithium
- Olanzapine
- Phenothiazines and butyrophenones
- Quetiapine
- Risperidone

Read Ingestions
- Button Batteries
- Corrosives
- Glyphosphate
- Hydrofluoric Acid
- Hydrogen Peroxide
- Organochlorines
- Organophosphorus agents
- Paraquat
- Strychnine

Read Inhalation/Ingestion (gases, hydrocarbons)
- Carbon Monoxide
- Chlorine
L. **COMAT** There is no COMAT for this course but the following test is required:

This is a pass/fail course. There is no remediation for this elective.

The student must achieve a passing score on the Practice Test 2017 Tox, found on the SAEM website, and they must submit a screenshot or printed copy of the test result. Contact must be made with Mary Beth Fitch, SWC Northern Region Director to receive a username and password to gain access to the tests on this website.

3. The student must compose two (2) “board-style” multiple choice questions from the toxicology curriculum. The questions must meet the following requirements:

   a. These should be case-based.
   b. You must provide your rationale for the correct answer and explain why the other answer choices are incorrect.
   c. At the end each question with its accompanying rationale you must provide a list of references you used to create the question. The references need to be in AMA format. Any images used must have the reference information in AMA format next to the image/video.
      i. Your references need to be in AMA format. For guidance in getting them into the correct format please visit
https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html

ii. Use the following format if citing an UpToDate article:

Marion DW. Pacing the diaphragm: Patient selection, evaluation, implantation, and complications. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on January 04, 2018.)

d. Any questions not meeting these requirements will be sent back to you for amendment and will need to be resubmitted with the new date of submission at the end (see “f” below on how to save your question).

e. Please review the guidance “Writing medical board questions” and follow these guidelines when writing your questions. This guidance can be found in this syllabus below. There is an example question in the guidance, your question should be in a similar format.

f. You will submit your questions to my administrative assistant Ashley Millard at amillard@osteo.wvsom.edu. Your questions should be saved as a word document as follows: lastname.US.dateofsubmission for example, “Hrutkay.Tox.3.25.20”

4. The student must create a case-based Power Point presentation covering a toxicology patient case. The presentation must meet the following guidelines:

a. This should be a ten-minute presentation in given in a case presentation format.

b. You will notify me of your topic by the third day of the rotation.

c. Must have a slide with your objectives/outcomes.

d. Any images used in your presentation must have the reference information in AMA format next to the image/video.

e. General references used to create the presentation must be listed at the end, again in AMA format.

f. This presentation will be given virtually during an education day or for the EM residents and EM faculty during the Trinity Health System Emergency Medicine Didactics Program. This will be scheduled during the last week of this rotation. The presentation will be evaluated by the preceptor and the EM faculty in attendance.

g. Be sure to practice your presentation before you give it!

h. You will save your presentation as LastName.Title.Date. For example, Hrutkay.IronOverdose.3.25.20

i. Submit your final presentation to Dr. Lisa Hrutkay at lhrutkay@osteo.wvsom.edu.
This two-week elective course will be limited to no more than ten (10) students per each two-week offering. If the demand for the course exceeds the ten-student limit, the preceptor will work to accommodate these additional students in the following manner:

a) The preceptor will make contact with the students’ Regional Assistant Deans to attempt to make arrangements for additional assistance with the receipt and evaluation of the board-style questions that are required of the student.

b) The preceptor will make contact with the students’ Regional Assistant Deans to attempt to make arrangements for the student to deliver their Power Point presentations for the didactics program for an IM/EM/FM residency program within their respective regions. The student presentation would then be evaluated by the faculty at that residency program and by their Regional Assistant Dean instead of by the course preceptor and the faculty in the EM residency program at Trinity Health System.

M. Required Textbooks

*Goldfrank’s Toxicologic Emergencies, 10th Edition*  
(Available on WVSOM On-Line Library)

(Available on Access Medicine on WVSOM On-Line Library)

N. Additional Resources

None

O. Didactic and Reading Assignments

All reading assignments are listed above and are available on the Life In The Fast Lane website. Supplemental in-depth reading on any of these topics can be found in the Goldfrank’s Toxicologic Emergencies or Tintinalli’s Emergency Medicine: A Comprehensive Study Guide online textbooks.

P. Grading/Calculations

The quizzes, presentations, and all submissions/resubmissions of board style test questions will need to be completed no later than 5 days following the last official day of the rotation. This is a 14 day rotation.
Upon successful completion of this curriculum and achievement of a passing score on the SAEM Practice Test 2017 Tox, the student will receive the average score for an Elective as determined by the WVSOM Office of Assessment.

Guidance for Writing Board Style Questions
Please find below general guidance on writing board style questions. This information is based on content found within the 4th edition of the manual produced by the National Board of Medical Examiners entitled “Constructing Written Test Questions For the Basic and Clinical Sciences”. Please use Chapter 6 in the manual to help you write your questions. You may find the manual at https://www.nbme.org/sites/default/files/2020-01/IWW_Gold_Book.pdf or you may download it from the site https://www.nbme.org/services/workshops-consultancy

Overview of the steps to writing a question
8. Determine the subject of the question
9. Determine which type of question it should be
10. Write the clinical vignette
11. Write the lead in question. Consider looking at the examples of different types of lead in questions before you start writing your clinical vignette.
12. List the answer choices (all of the answer choices must be plausible)
13. Provide your rationale i.e. discuss why the correct answer is the right answer and why the other answer choices are incorrect
14. List the references to support your rationale in AMA format. Use the site https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html to help you put your references into the correct format.

Types of Test Questions (which should be in the form of a clinical vignette)
4. Recall Questions – tests knowledge of facts or definitions
5. Interpretation Questions – requires review of information and makes the student reach a conclusion like a diagnosis
6. Problem-Solving Questions – Presents a situation and make the student take some action (next step in management)

Each question should:
7. Focus on important concepts, not trivial facts
8. Can be answered without looking at the options
9. Includes only relevant facts or data. No red herrings.
10. The question should not be tricky or too complex
11. Avoid negatively phrased lead ins (avoid using except or not)
12. Be grammatically correct

Clinical Vignette Questions:
7. Tests knowledge using a clinical vignette
8. Should focus on common or life-threatening problems
9. Avoid “zebras” or esoteric concepts
10. Avoid clinical situations that would be handled only by a specialist
11. Make sure to focus on content that you are expected to undertake at your next stage of training
12. Could also be on areas where clinical mistakes are often made

Template for the Clinical Vignette
Follow the template found towards the bottom of page 36 of the NBME Guide. Please also follow that order when writing your question.

The Lead In Question…
3. Must be a clear question so that the student can answer without looking at the options
4. Types of lead in questions
   a. Basic Science Lead In Questions: require clinical knowledge and knowledge of a foundational science principle that would have been learned during preclinical study but reinforced during clinical rotations. See page 40 of the guide for examples of these types of questions.
   b. Diagnosis Type Lead In Questions
      ix. Obtaining and Predicting History and Physical Examination. See page 40 of the guide for examples of these types of questions.
      x. Selecting and Interpreting Diagnostic Studies. See page 41 of the guide for examples of these types of questions.
      xi. Formulating the Diagnosis. See page 41 of the guide for examples of these types of questions.
      xii. Determining Prognosis/Outcome. See page 41 of the guide for examples of these types of questions.
   c. Management Type Lead In Questions
      i. Health Maintenance and Disease Prevention. See page 42 of the guide for examples of these types of questions.
      ii. Pharmacotherapy/Clinical Interventions and Treatments. See page 44 of the guide for examples of these types of questions.
   d. Mechanism of Disease Type of Lead In Questions - tests knowledge of pathophysiology in its broadest sense. See page 45 of the guide for examples of these types of questions.

How to submit your questions and example of question format:

You will send your questions as a word document via email to Ashley Millard at amillard@osteo.wvsom.edu. Your questions should be saved as a word document as follows: lastname.Tox.dateofsubmission for example, “Hrutkay.Tox.3.25.20”
A 28-year-old medical student is at home writing his first board style question. He does not feel prepared to write these types of questions. He suddenly becomes diaphoretic and feels his heart racing. This episode lasted approximately 10 minutes and resolved when he took a break to walk his dog. He is healthy and his parents are also healthy. His roommate, also a medical student, examined him. He has a normal physical exam. Which of the following is his most likely diagnosis?

F. Myocardial infarction
G. Post-traumatic stress disorder
H. Alcohol withdrawal
I. Panic attack
J. Hypoglycemia

Rationale
The correct answer is D panic attack. This student is otherwise healthy as are his parents, therefore a myocardial infarction is not likely. Additionally, his age makes myocardial infarction much less likely. You have not been given a history of previous traumatic events he may be suffering from, therefore post-traumatic stress disorder is also unlikely. Since we have not been given his social history alcohol withdraw is also unlikely. His symptoms are most consistent with a panic attack and while these could also be symptoms of hypoglycemia, symptoms of hypoglycemia would have worsened while walking the dog. Walking the dog likely took his mind off of writing the question allowing his symptoms to resolve.

References

• Your references need to be in AMA format. For guidance in getting them into the correct format please visit https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html
• And use the following format if citing UpToDate:

Marion DW. Pacing the diaphragm: Patient selection, evaluation, implantation, and complications. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on January 04, 2018.)

Grading Rubric for Presentation
This is how you will be evaluated on your presentation. All attendees will submit an evaluation form of your presentation.
<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>Excellent (10/10)</th>
<th>Strong (9/10)</th>
<th>Good (8/10)</th>
<th>Adequate (7/10)</th>
<th>Inadequate (0/10)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization</strong></td>
<td>Highly organized and linear</td>
<td>Mostly linear and easy to follow</td>
<td>Adequate organization and flow</td>
<td>Could be better developed</td>
<td>Poorly organized; unexcused absence</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>Clear and met</td>
<td>Good and met</td>
<td>A little vague, but still appropriate</td>
<td>Adequate</td>
<td>Inadequate/none; unexcused absence</td>
</tr>
<tr>
<td><strong>Detail (and accuracy of content)</strong></td>
<td>Excellent, 100% accurate, and appropriate</td>
<td>Accurate and appropriate, at the right level, save for one or two exceptions</td>
<td>Average, maybe a little too detailed, or too general</td>
<td>Multiple content errors and/or detail too much or too vague</td>
<td>Most content is inaccurate; Definitely too detailed or too general; unexcused absence</td>
</tr>
<tr>
<td>Errors in grammar, spelling</td>
<td>None</td>
<td>Few</td>
<td>Some</td>
<td>Multiple</td>
<td>A lot; unexcused absence</td>
</tr>
<tr>
<td>Presentation skills</td>
<td>Spot on, Well-practiced, no fillers, highly engaging, no ticks</td>
<td>Practiced, few fillers, engaging, few, if any, ticks</td>
<td>Could be polished more, but overall appropriate, many fillers, inconsistent engagement with the audience</td>
<td>Adequate practice, but ideally would have practiced it much more, a lot of fillers, limited engagement with the audience</td>
<td>Lacking in engagement with the audience, Lacking in coherent speech; unexcused absence</td>
</tr>
<tr>
<td><strong>Visuals</strong></td>
<td>Excellent, not too busy or all words; appropriately cited</td>
<td>Nice images with good explanations/not es; information cited for the most part</td>
<td>On the side of too busy or wordy, hard to see images/busy</td>
<td>Definitely too busy/wordy, many unlabeled images</td>
<td>Lacking in visuals or so wordy it can’t be read through while listening, etc.; unexcused absence</td>
</tr>
<tr>
<td><strong>Time management</strong></td>
<td>Almost perfect: Started and ended on time, did not have to rush or slow down.</td>
<td>Started and ended on time, not rushed or finishing too early</td>
<td>Rushed a couple of slides, finished a little early; Spent too much time on a slide or two; ended late; no time for questions</td>
<td>Rushed a lot of slides or ended too early; Spent too much time on several slides; went over</td>
<td>Poorly timed, had many slides not covered or ended much too early; unexcused absence</td>
</tr>
</tbody>
</table>
B. Introduction

Thank you for participating in this course! I hope you'll enjoy learning the content. This is a self-directed course designed to teach you introductory point of care ultrasound (POCUS) principles and procedures.

This is designed to be a two week self-directed elective. You will watch videos demonstrating proper ultrasound techniques used in diagnosing and treating patients (refer to the Study Guide section for the complete listing). You will then complete three online ultrasound quizzes, write two board style questions related to ultrasound, and...
deliver a 10 minute presentation on an ultrasound topic (refer to the Evaluation section of this syllabus for further details).

Read this syllabus in its entirety.

At the completion of the on-line learning program, the student will be expected to have gained sufficient medical knowledge and covered all of the core competencies set forth in this syllabus. This is a comprehensive introduction to bedside ultrasound methods and techniques but does not replace the value of the actual application of these techniques in a clinical setting. Additional clinical practice of these techniques is highly recommended for the student to become proficient with these skills. This learning program will make use of the on-line FOAMed (Free Open Access Medical Education) Program at www.sonomojo.org. The student will be expected to complete the learning modules in their entirety and complete the post-testing.

B. Course (Rotation) Objectives and Core Competencies

1. Medical Knowledge
   a. Acquire an understanding of the basic physics behind ultrasound and the uses and applications of the various ultrasound transducers to obtain proper diagnostic images.
   d. Develop an understanding of the proper role of ultrasound in the diagnosis of individual patient pathology.
   e. Be able to identify circumstances in which ultrasound would be the first diagnostic test of choice and when it would not be the first choice.

2. Patient Care
   c. Explain interview and examination skills required to conduct screening for patients presenting with urgent and emergent conditions to see if bedside ultrasound may be an appropriate diagnostic test.
   d. Summarize the methods of explaining the ultrasound procedure to the patient to make them comfortable with the testing and to understand the benefits and limitations of ultrasound imaging.

3. Interpersonal and Communication Skills
   a. Summarize how to effectively communicate with and establish a good rapport with the patient who is presenting for assessment, as well as the family who accompany them.
   b. Explain how parental and patient concerns and perspectives including cultural and religious influences impact care.
d. Describe how to fully document the ultrasound procedure and how to capture and record the diagnostic images to place them into the patient’s health record.
e. Explain how to share the diagnostic findings, plan of care, and prognostic information with patients and families.

4. **Professionalism**
a. Summarize understanding and the need for supervision, chaperones and/or assistance, depending upon the given circumstance.
b. Detail an understanding of privacy and independence of adolescents and of the private individual interview of an adolescent during the interview process and diagnostic testing.
c. Explain how sensitivity, empathy, and responsiveness to diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation impacts care.
d. Recognize that all patients with an urgent or emergent complaint shall receive care regardless of medical insurance coverage, ethnicity, race, or social economic status.

5. **Practice-Based learning and Improvement**
a. Be able to apply fundamental epidemiologic concepts to the patient population with which the student is working.
b. Detail medical informatics, evidence-based medicine, and research.
c. Be able to identify personal knowledge deficits, strengths, and limitations through frequent self-reflection.
d. Explore the avenues through which additional educational resources can be located and use them to strengthen personal medical knowledge.
e. Explain the methods of quality improvement.

6. **Systems-Based Practice**
a. Discuss the cost and risk-benefit analysis in patient and/or populations-based care in different delivery systems and settings, as it pertains to diagnostic imaging modalities.

7. **Osteopathic Philosophy and Osteopathic Manipulative Medicine**
   The Four Tenets of Osteopathic Medicine:
   1) The body is a unit;
   2) Structure and function are interdependent;
   3) The body has self-healing and self-regulatory capabilities;
   4) Rational osteopathic care relies on the integration of these tenets in patients care.

**C. Study Guide**

The on-line learner shall be required to complete the on-line learning modules which address all of the selected specific learner-centered objectives for Point of Care.
Ultrasound (POCUS) listed in this syllabus. These modules are not all-inclusive of all ultrasound training material, but they do include most of the commonly used diagnostic modalities. For optional additional resources see the “Other Resources” section below.

Module One: Ultrasound Basics
Assignments for Module One:
- Watch the YouTube video “Ultrasound Physics and Instrumentation” (48 minutes 5 seconds) by Chris Fox at (in this video the instructor is using the GE Logic V2 ultrasound)
  https://www.youtube.com/watch?v=531t0deTQwg&list=WL&index=37&t=0s
- Watch the YouTube video “Ultrasound Transducer Manipulation” (7 minutes 20 seconds) by Adam Collins at https://www.youtube.com/watch?v=RskrEsAGzec

Module Two: Abdomen
Assignments for Module Two:
- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on Abdominal Ultrasound Module
  - Read Sonoguide: “Renal”
  - Watch 5 Minute Sono: “Hydronephrosis”
  - Watch One Minute Ultrasound: “Kidney”
  - Watch Ultrasound Podcast: “Renal Ultrasound”
  - Watch Ultrasound Podcast: “Appendix”
  - Watch One Minute Ultrasound: “Small Bowel Obstruction”
  - Watch Ultrasound Podcast: “Small Bowel Obstruction”
  - Watch 5 Minute Sono: “SBO”
  - Watch One Minute Ultrasound: “Gallbladder”
  - Watch Ultrasound Podcast: “Gallbladder”
  - Watch USC Ultrasound Learning Module: “Liver”
  - Watch USC Ultrasound Learning Module: “Spleen Ultrasound”
  - Watch 5 Minute Sono: “Bladder Volume”
  - Watch USC Ultrasound Learning Module: “Bladder and Ureter Ultrasound”
  - Watch Ultrasound Podcast: “Using Ultrasound for Hernias”
  - Watch Ultrasound Podcast: “Bonus Hernia”

Module Three: Cardiac Ultrasound
Assignments for Module Three:
- Watch the YouTube video “Bedside Ultrasound Basic Cardiac US” (19 minutes 21 seconds) by POCUS Geek at https://www.youtube.com/watch?v=C60jGZsiPrs
- Watch the YouTube video “Estimating Ejection Fraction with Point of Care Echo” (11 minutes 9 seconds) by Synthesis Medical Education at https://www.youtube.com/watch?v=JJZgO8ML0tk
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on Cardiac Ultrasound Module
  o Read SonoGuide: “Cardiac”
  o Watch One Minute Ultrasound: “Basic Cardiac”
  o Watch Castlefest: “Best Cardiac Ultrasound”
  o Watch Ultrasound Podcast: “ECHO ECHO ECHO”
  o Watch One Minute Ultrasound: “EPSS”
  o Watch Ultrasound Podcast: “E-Point Septal Separation”
  o Watch 5 Minute Sono: “Cardiac Function”
  o Watch One Minute Ultrasound: “Passive Leg Raise”
  o Watch One Minute Ultrasound: “Wall Motion”
  o Watch Ultrasound Podcast: “Wall Motion”
  o Watch 5 Minute Sono: “Right Heart Strain”
  o Watch One Minute Ultrasound: “Diastology”
  o Watch Ultrasound Podcast: “Diastology Part 1”
  o Watch Ultrasound Podcast: “Diastology Part 2”
  o Watch Ultrasound Podcast: “Diastology How To”
  o Watch Ultrasound Podcast: “Ultrasound of Valves Part 2”
  o Watch Ultrasound Podcast: “TEE Part 1, Part 2”
  o Watch Ultrasound Podcast: “Pericardial Tamponade Part 1, Part 2”

Module Four: Lung Ultrasound
Assignments for Module Four:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on Lung Ultrasound Module
  o Watch Ultrasound Podcast: “Dyspnea”
  o Watch Ultrasound Podcast: “Lung Ultrasound” with Mike Stone Part 1, Part 2
  o Watch Ultrasound Podcast: “Lung Ultrasound” with Vicki Noble Part 1, Part 2
  o Watch 5 Minute Sono: “Pulmonary Edema”
  o Watch Ultrasound Podcast: “Multi-Organ Ultrasound for PE”
  o Watch 5 Minute Sono: “PE”
  o Watch 5 Minute Sono: “Pneumonia”
  o Watch 5 Minute Sono: “Pleural Effusion”
  o Watch 5 Minute Sono: “Pneumothorax”

Module Five: FAST and eFAST
Assignments for Module Five:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on Trauma Ultrasound Module
  o Read Quickhits: Life in the eFAST Lane” Part 1, Part 2, Part 3
  o Watch One Minute Ultrasound: “FAST”
  o Watch Ultrasound Podcast Cliff Reid: “eFAST”
Module Six: Fluid Responsiveness and Hypotension
Assignments for Module Six:
- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on Fluid Responsiveness Ultrasound Module
  - Watch One Minute Ultrasound: “IVC”
  - Watch 5 Minute Sono: “Fluid Responsiveness”
  - Watch Ultrasound Podcast: Fluid Responsiveness, Part 1 and Part 2
  - Watch Ultrasound Podcast: “Integrated Ultrasound Approach to Fluid Responsiveness”
  - Watch Ultrasound Podcast: “Carotid VTI Passive Leg Raise for Volume Responsiveness”
- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the RUSH Protocol Module
  - Watch Ultrasound Podcast: “RUSH Part 1, Part 2”
  - Watch 5 Minute Sono: “RUSH Exam”

Module Seven: Vascular Ultrasound
Assignments for Module Seven:
- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Vascular Ultrasound Module
  - Read SonoGuide: “DVT”
  - Watch One Minute Ultrasound: “DVT”
  - Watch Ultrasound Podcast: “DVT”
  - Watch Ultrasound Podcast: “DVT How To”
  - Watch Ultrasound Podcast: “DVT: The Whole Leg Approach”
  - Read SonoGuide: “Aorta”
  - Watch One Minute Ultrasound: “Aorta”
  - Watch Mike Stone Vimeo: “How I Scan the Aorta”
  - Watch One Minute Ultrasound: “IVC”
  - Watch Academy of Emergency Ultrasound Vimeo: IVC Ultrasound”

Module Eight: Musculoskeletal Ultrasound
Assignments for Module Eight:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Musculoskeletal Ultrasound Module
  o Read SonoGuide: “MSK Overview”
  o Watch Mike Stone Vimeo: “MSK”
  o Watch Academy of Emergency Ultrasound: “Musculoskeletal Ultrasound: Muscles and Tendons”
  o Watch Ultrasound Podcast: “Hip Ultrasound, Aspiration and Injection”
  o Watch One Minute Ultrasound: “Shoulder Dislocation”
  o Read SonoGuide: “Sternum”
  o Read SonoGuide: “Ribs”
  o Watch Ultrasound Podcast: “Scanning the Scaphoid”
  o Watch Ultrasound Podcast: “Ultrasound of Radius Fracture”

Module Nine: Soft Tissue Ultrasound
Assignments for Module Nine:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Soft Tissue Ultrasound Module
  o Read SonoGuide: “Soft Tissue Ultrasound”
  o Read SonoGuide: “Foreign Bodies”
  o Watch One Minute Ultrasound: “Soft Tissue”
  o Watch 5 Minute Sono: “Soft Tissue”

Module Ten: Female Pelvic Ultrasound
Assignments for Module Ten:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Female Pelvic Ultrasound Module
  o Read SonoGuide: “Ultrasound in Early Pregnancy”
  o Watch One Minute Ultrasound: “Intrauterine Pregnancy (IUP)”
  o Watch One Minute Ultrasound: “Transvaginal Ultrasound”
  o Watch Mike Stone Vimeo: “Essential 1st Trimester Pelvic Ultrasound”
  o Watch Ultrasound Podcast: “Ultrasound for Late Pregnancy”
  o Watch 5 Minute Sono: “Fetal Heart Rate”

Module Eleven: Small Parts Ultrasound
Assignments for Module Eleven:
• Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Small Parts Ultrasound Module
  o Read SonoGuide: “ENT Ultrasound Applications”
  o Watch Ultrasound Podcast: “Peritonsillar Abscess”
  o Watch USC Ultrasound Learning Modules: “Thyroid”
Module Twelve: Ocular Ultrasound
Assignments for Module Twelve:
- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Ocular Ultrasound Module
  - Read SonoMojo: “Keeping an Eye on Intracranial Pressure: Detecting Elevated ICP Using Ocular Ultrasound”
  - Watch One Minute Ultrasound: “Ocular Ultrasound”
  - Watch Ultrasound Podcast: “Ocular Ultrasound”
  - Watch EMCRIT Podcast: “High ICP Herniation”

Module Thirteen: Pediatric Ultrasound
Assignments for Module Thirteen:
- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Pediatric Ultrasound Module
  - Watch UCI Ultrasound in MedEd iTunes: “Pediatrics”
  - Watch Geoff Hayden’s Vimeo: “Peds ECHO”
  - Watch AEUS Vimeo: “Pyloric Stenosis”
  - Watch AEUS Vimeo: “Intussusception”

Module Fourteen: Consents and Time Outs
Assignments for Module Fourteen:
- Watch the YouTube video “Informed Consent Checklist” by Pedro Tanaka at https://www.youtube.com/watch?v=AN8CdzQj6xk (7 minutes, 2 seconds)
- Read the UpToDate articles “Informed procedural consent” and “Ethics in the intensive care unit: Informed consent”
- Watch the YouTube video “Bedside Procedure Time Out” by UnitedMemorial MedicalCenter 1 minute 53 seconds at https://www.youtube.com/watch?v=-gO2cV38vZo
- Watch the YouTube video “Time Out: Universal Protocol at University Hospital” by University Health System (1 minutes 28 seconds) at https://www.youtube.com/watch?v=pDXQemdSwIY
Module Fifteen: Ultrasound Guided Procedures
Assignments for Module Fifteen:

- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Ultrasound Guided Vascular Access Module
  - Read SonoGuide: “Vascular Access”
  - Watch Mike Stone Vimeo: “Short Axis, Out of Plane Technique”
  - Watch Mike Stone Vimeo: “Long Axis, In Plane Technique”
  - Watch One Minute Ultrasound: “IV Placement”
  - Watch Ultrasound Podcast: “Ultrasound Guided Peripheral IV’s”
  - Watch One Minute Ultrasound: “IJ Ultrasound”
  - Watch Ultrasound Podcast Microcast: “IJ Placement”
  - Watch Ultrasound Podcast: “Wire in Needle a Win for Needle Visualization”
  - Watch 5 Minute Sono: “Superficial Cervical Plexus Block”
  - Watch Ultrasound Podcast Microcast: “Radial Arterial Line Insertion”

FYI (this is optional): The New England Journal of Medicine (NEJM) has several “Videos in Clinical Medicine” that thoroughly demonstrate how to do various procedures including ultrasound guided procedures. To access the NEJM videos log into the NEJM website through the WVSOM Library website. Once you are logged in click on the heading “Multimedia” then choose “Videos in Clinical Medicine” from the drop down menu, then simply scroll through them to find the video that you would like to watch. Each video has a written article summarizing the content in the video. This is an excellent resource.

Module Sixteen: Useful Protocols Module
Assignments for Module Sixteen:

- Go to the website www.sonomojo.org → Go to Learning Modules → Click on FOAMed Ultrasound Curriculum → Click on the Useful Protocols Module
  - Watch Ultrasound Podcast: “EGLS”
  - Watch Ultrasound Podcast: “Ultrasound Guided CPR Part 1, Part 2”
- Watch the YouTube video “POCUS and CPR: First Do No Harm” (13 minutes 13 seconds) by Michael Schick at https://www.youtube.com/watch?v=yEaDWPMDJI

D. COMAT Blueprint
There is no COMAT Exam for the Ultrasound On-Line Elective. Please refer to the Evaluation section of this syllabus for information regarding measurement of the student’s acquired knowledge in bedside ultrasound.

E. Required Textbooks

There are no required texts for this elective. All learning is done through the available on-line readings, videos and podcasts listed in the syllabus.

F. Additional Resources

The *Life in the Fast Lane* website offers a large and diverse library of ultrasound quizzes which are highly recommended for the student for review at the completion of this course.

There are many eBooks available to be referenced by the student through the WVSOM library:

- **Access Medicine**
  --“Pocket Guide to POCUS: Point of Care Tips for Point of Care Ultrasound”

- **Clinical Key**
  --“Point of Care Ultrasound”
  --“Clinical Doppler Ultrasound”
  --“Clinical Ultrasound”
  --“Critical Care Ultrasound”
  --“Critical Care Ultrasound Manual”
  --“Diagnostic Ultrasound”
  --“Essential Applications of Musculoskeletal Ultrasound in Rheumatology”
  --“Fundamentals of Musculoskeletal Ultrasound”
  --“Gynecologic Ultrasound: A Problem-Based Approach”
  --“Neuromuscular Ultrasound”
  --“Practical Musculoskeletal Ultrasound”
  --“Principles of Vascular and Intravascular Ultrasound”
  --“Ultrasound in Musculoskeletal Injections”
  --“Ultrasound: The Requisites”

G. Didactic and Reading Assignments

All reading and required on-line videos are thoroughly outlined under the Study Plan. It is also highly recommended that the student review a minimum of fifty (50) of the Top 100 Ultrasound Case Quizzes found on the website, *Life in the Fast Lane*. Ultrasound is a patient-focused manual skill and complete competency in this skill cannot be fully achieved without patient contact and practice. It is highly recommended that the
student seek out and arrange for practice with this skill in a clinical setting, when circumstances permit the return to clinical rotations.

H. Evaluation

This is a pass/fail course. There is no remediation for this elective.

7. Pass the three short quizzes found on the SonoMojo website.
   a. Go to www.sonomojo.org
   b. Hover over the “Learning Modules” tab
   c. Click on “SonoQuizzes”
   d. Take all three quizzes as many times as needed to “pass” the quiz
   e. Save all three completed quizzes as PDF files and email them to Ashley Millard at amillard@osteo.wvsom.edu.

8. The student will also be required to compose two (2) “board style” multiple choice questions from the ultrasound curriculum. The questions must meet the following requirements:
   a. These should be case-based and should include ultrasound images, if applicable.
   b. You must provide your rationale for the correct answer and explain why the other answer choices are incorrect
   c. At the end each question with its accompanying rationale you must provide a list of references you used to create the question. The references need to be in AMA format. Any images used must have the reference information in AMA format next to the image/video.
      i. Your references need to be in AMA format. For guidance in getting them into the correct format please visit https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html
      ii. Use the following format if citing an UpToDate article:
          Marion DW. Pacing the diaphragm: Patient selection, evaluation, implantation, and complications. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on January 04, 2018.)
   d. Any questions not meeting these requirements will be sent back to you for you to amend and will need to be resubmitted with the new date of submission at the end (see “f” below on how to save your question).
   e. Please review the guidance “Writing medical board questions” and follow these guidelines when writing your questions. This guidance can be found in this syllabus below. There is an example question in the guidance, your question should be in a similar format.
   f. You will submit your questions to my administrative assistant Ashley Millard at amillard@osteo.wvsom.edu. Your questions should be saved
as a word document as follows: lastname.US.dateofsubmission for example, “Hrutkay.US.3.25.20”

9. The student will be required to create a Power Point presentation based on a patient case utilizing ultrasound in the diagnostic workup. The presentation must meet the following guidelines.
   a. This should be a ten-minute presentation in given in a case presentation format.
   b. You will notify me of your topic by the third day of the rotation.
   c. Must have a slide with your objectives/outcomes
   d. The presentation should include diagnostic ultrasound images/videos. Any images used must have the reference information in AMA format next to the image/video.
   e. General references used to create the presentation must be listed at the end, again in AMA format.
   f. This presentation will be given virtually during an education day or for the EM residents and EM faculty during the Trinity Health System Emergency Medicine Didactics Program. This will be scheduled during the last week of this rotation. The presentation will be evaluated by the preceptor and everyone in attendance.
   g. Be sure to practice your presentation before you give it!
   h. You will save your presentation as LastName.Title.Date. For example, Hrutkay.OcularUltrasound.3.25.20
   i. Submit your final presentation to Lisa Hrutkay, Northern Regional Assistant Dean at lhrutkay@ osteo.wvsom.edu.

10. This two-week elective course will be limited to no more than ten (10) students per each two-week offering. If the demand for the course exceeds the ten-student limit, the preceptor will work to accommodate these additional students in the following manner:

   c. The preceptor will make contact with the students’ Regional Assistant Deans to attempt to make arrangements for additional assistance with the receipt and evaluation of the board-style questions that are required of the student.

   d. The preceptor will make contact with the students’ Regional Assistant Deans to attempt to make arrangements for the student to deliver their Power Point presentations for the didactics program for an IM/EM/FM residency program within their respective regions. The student presentation would then be evaluated by the faculty at that residency program and by their Regional Assistant Dean instead of by the course
preceptor and the faculty in the EM residency program at Trinity Health System.

11. The quizzes and all submissions/resubmissions of board style test questions will need to be completed no later than 5 days following the last official day of the rotation. This is a 14 day rotation.

12. Just an FYI (and I hate to even say it) but failure to complete the above is considered a violation of WVSOM’s policy on student professionalism. Institutional Policy ST-01 (https://www.wvsom.edu/About/policies_procedures) and will be reported as such. I know that this will not be a problem with anyone taking this course!

I. Grading/Calculations

Successful completion of the online course modules and the post tests will be factored into passage of the elective. A letter grade will be assigned for this rotation by the preceptor upon receipt of the proof of successful completion of the three on-line quizzes, the preceptors assessment of the quality of the board-style questions submitted by the student, and the combined scoring of the ultrasound presentation given at Trinity EM Didactics Program.

Please note the following:

The preceptor (if an email address is on file) will receive an email with a link to the Clinical Education Grade Form to complete before the end of the rotation. The student needs to inquire if the preceptor/supervising physician has received the email with the link to the form. If the Preceptor/supervising physician did not receive the email, then the student must provide a paper grade form to be completed and faxed or mailed to the SWC regional office.

The student is responsible for ensuring that the grade form is submitted in a timely fashion and should follow-up with the preceptor, if necessary.

Guidance for Writing Board Style Questions

Please find below general guidance on writing board style questions. This information is based on content found within the 4th edition of the manual produced by the National Board of Medical Examiners entitled “Constructing Written Test Questions For the Basic and Clinical Sciences”. Please use Chapter 6 in the manual to help you write your questions. You may find the manual at https://www.nbme.org/sites/default/files/2020-01/IWW_Gold_Book.pdf or you may download it from the site https://www.nbme.org/services/workshops-consultancy
Overview of the steps to writing a question
8. Determine the subject of the question
9. Determine which type of question it should be
10. Write the clinical vignette
11. Write the lead in question. Consider looking at the examples of different types of lead in questions before you start writing your clinical vignette.
12. List the answer choices (all of the answer choices must be plausible)
13. Provide your rationale i.e. discuss why the correct answer is the right answer and why the other answer choices are incorrect
14. List the references to support your rationale in AMA format. Use the site https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html to help you put your references into the correct format.

Types of Test Questions (which should be in the form of a clinical vignette)
4. Recall Questions – tests knowledge of facts or definitions
5. Interpretation Questions – requires review of information and makes the student reach a conclusion like a diagnosis
6. Problem-Solving Questions – Presents a situation and make the student take some action (next step in management)

Each question should:
7. Focus on important concepts, not trivial facts
8. Can be answered without looking at the options
9. Includes only relevant facts or data. No red herrings.
10. The question should not be tricky or too complex
11. Avoid negatively phrased lead ins (avoid using except or not)
12. Be grammatically correct

Clinical Vignette Questions:
7. Tests knowledge using a clinical vignette
8. Should focus on common or life-threatening problems
9. Avoid “zebras” or esoteric concepts
10. Avoid clinical situations that would be handled only by a specialist
11. Make sure to focus on content that you are expected to undertake at your next stage of training
12. Could also be on areas where clinical mistakes are often made

Template for the Clinical Vignette
Follow the template found towards the bottom of page 36 of the NBME Guide. Please also follow that order when writing your question.

The Lead In Question…
3. Must be a clear question so that the student can answer without looking at the options
4. Types of lead in questions
a. Basic Science Lead In Questions: require clinical knowledge and knowledge of a foundational science principle that would have been learned during preclinical study but reinforced during clinical rotations. See page 40 of the guide for examples of these types of questions.

b. Diagnosis Type Lead In Questions
   xiii. Obtaining and Predicting History and Physical Examination. See page 40 of the guide for examples of these types of questions.
   xiv. Selecting and Interpreting Diagnostic Studies. See page 41 of the guide for examples of these types of questions.
   xv. Formulating the Diagnosis. See page 41 of the guide for examples of these types of questions.
   xvi. Determining Prognosis/Outcome. See page 41 of the guide for examples of these types of questions.

c. Management Type Lead In Questions
   i. Health Maintenance and Disease Prevention. See page 42 of the guide for examples of these types of questions.
   ii. Pharmacotherapy/Clinical Interventions and Treatments. See page 44 of the guide for examples of these types of questions.

d. Mechanism of Disease Type of Lead In Questions - tests knowledge of pathophysiology in its broadest sense. See page 45 of the guide for examples of these types of questions.

How to submit your questions and example of question format:

You will send your questions as a word document via email to Ashley Millard at amillard@osteowvsom.edu. Your questions should be saved as a word document as follows: lastname.US.dateofsubmission for example, “Hrutkay.US.3.25.20”

A 28 year old medical student is at home writing his first board style question. He does not feel prepared to write these types of questions. He suddenly becomes diaphoretic and feels his heart racing. This episode lasted approximately 10 minutes and resolved when he took a break to walk his dog. He is healthy and his parents are also healthy. His roommate, also a medical student, examined him. He has a normal physical exam. Which of the following is his most likely diagnosis?

   F. Myocardial infarction
   G. Post-traumatic stress disorder
   H. Alcohol withdraw
   I. Panic attack
   J. Hypoglycemia

Rationale
The correct answer is D panic attack. This student is otherwise healthy as are his parents, therefore a myocardial infarction is not likely. Additionally, his age makes myocardial infarction much less likely. You have not been given a history of previous traumatic events he may be suffering from, therefore post-traumatic stress disorder is also unlikely. Since we have not been given his social history alcohol withdraw is also unlikely. His symptoms are most consistent with a panic attack and while these could also be symptoms of hypoglycemia, symptoms of hypoglycemia would have worsened while walking the dog. Walking the dog likely took his mind off of writing the question allowing his symptoms to resolve.

References

- Your references need to be in AMA format. For guidance in getting them into the correct format please visit https://owl.purdue.edu/owl/research_and_citation/ama_style/index.html
- And use the following format if citing UpToDate:
Marion DW. Pacing the diaphragm: Patient selection, evaluation, implantation, and complications. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on January 04, 2018.)

Grading Rubric for Presentation
This is how you will be evaluated on your presentation. All attendees will submit an evaluation form of your presentation.
<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>Excellent (10/10)</th>
<th>Strong (9/10)</th>
<th>Good (8/10)</th>
<th>Adequate (7/10)</th>
<th>Inadequate (0/10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Highly organized and linear</td>
<td>Mostly linear and easy to follow</td>
<td>Adequate organization and flow</td>
<td>Could be better developed</td>
<td>Poorly organized; unexcused absence</td>
</tr>
<tr>
<td>Objectives</td>
<td>Clear and met</td>
<td>Good and met</td>
<td>A little vague, but still appropriate</td>
<td>Adequate</td>
<td>Inadequate/ none; unexcused absence</td>
</tr>
<tr>
<td>Detail (and accuracy of content)</td>
<td>Excellent, 100% accurate, and appropriate</td>
<td>Accurate and appropriate, at the right level, save for one or two exceptions</td>
<td>Average, maybe a little too detailed, or too general</td>
<td>Multiple content errors and/or detail too much or too vague</td>
<td>Most content is inaccurate; Definitely too detailed or too general; unexcused absence</td>
</tr>
<tr>
<td>Errors in grammar, spelling</td>
<td>None</td>
<td>Few</td>
<td>Some</td>
<td>Multiple</td>
<td>A lot; unexcused absence</td>
</tr>
<tr>
<td>Presentation skills</td>
<td>Spot on, Well-practiced, no fillers, highly engaging, no ticks</td>
<td>Practiced, few fillers, engaging, few, if any, ticks</td>
<td>Could be polished more, but overall appropriate, many fillers, inconsistent engagement with the audience</td>
<td>Adequate practice, but ideally would have practiced it much more, a lot of fillers, limited engagement with the audience</td>
<td>Lacking in engagement with the audience, Lacking in coherent speech; unexcused absence</td>
</tr>
<tr>
<td>Visuals</td>
<td>Excellent, not too busy or all words; appropriately cited</td>
<td>Nice images with good explanations/notes; information cited for the most part</td>
<td>On the side of too busy or wordy, hard to see images/busy</td>
<td>Definitely too busy/wordy, many unlabeled images</td>
<td>Lacking in visuals or so wordy it can’t be read through while listening, etc.; unexcused absence</td>
</tr>
<tr>
<td>Time management</td>
<td>Almost perfect: Started and ended on time, did not have to rush or slow down.</td>
<td>Started and ended on time, not rushed or finishing too early</td>
<td>Rushed a couple of slides, finished a little early; Spent too much time on a slide or two; ended late; no time for questions</td>
<td>Rushed a lot of slides or ended too early; Spent too much time on several slides; went over</td>
<td>Poorly timed, had many slides not covered or ended much too early; unexcused absence</td>
</tr>
</tbody>
</table>
Introduction to the ICU: Online Course

Introduction to the ICU: Online
Course Syllabus 2019-2020

Course director: Elizabeth Ziner, DO
eziner@osteo.wvsom.edu
Office phone: 304-647-6569

Dr. Ziner’s Administrative Assistant: April Williams
awilliams@osteo.wvsom.edu
Office phone: 304-793-6806

Thank you for participating in this course! I hope you’ll enjoy learning the content. This is a self-directed course designed to teach you introductory intensive care unit (ICU) principles and procedures. I have tried to provide you with very high-yield, easy to learn content. If you, along your journey, find other sources that you find helpful in learning these topics, please share them with me so that I can share them with others. You will also be given resources for you to use during your residency when you are responsible for direct patient care in the ICU – most of this content is under the “Additional (optional) Resources” heading for each module.

Just to be clear:

The Global Objective of the course is: Students will learn introductory intensive care unit principles and procedures required to diagnose and manage a critically ill patient with hypoxemia, hypercapnia, shock, and pneumonia.

The Global Outcome for the course is: Students will be able to apply the basic skills required to diagnose and manage a critically ill patient with hypoxemia, hypercapnia, shock, and pneumonia.

You may find the links to all of the policies, disclaimers, core entrustable professional activities for entering residency, and all other fine print related to this course at the end of this document. These are all in one place for your convenience.

It is imperative that you email your Statewide Campus Dean and April Williams, my administrative assistant @ awilliams@osteo.wvsom.edu, and tell them that you are officially taking this course.

Read this syllabus in its entirety.
**How to find this course in eMedley:** Login to eMedley, go to educate, then filter for **005-1 Statewide Campus Information – CO2020 & CO2021**. Then search for **ICU Online Course**. All documents for the course are posted within the announcement folder. If you have difficulty accessing the course please email Janet Miller at jmiller@osteo.wvsom.edu or call her at 304-647-6278 or email Machelle Lisenmeyer at alisenmeyer@osteo.wvsom.edu or call her at 304-793-6871.

**For this course:**
The content in this course is broken down into eight modules. You will be busy during this two week rotation! Don’t procrastinate. Each module has a theme(s). Most of the content is found on the New England Journal of Medicine (NEJM) Website, NEJM Resident 360 website, UpToDate, YouTube, and a couple of other sources such as websites, and dare I say, one book chapter.

There are several NEJM Videos in Clinical Medicine for you to watch. To access these videos log into the NEJM website at [www.nejm.org](http://www.nejm.org). Once you are logged in click on the heading “Multimedia” then choose “Videos in Clinical Medicine” from the drop down menu, then simply scroll through them to find the video you have been directed to watch. Each video has a written article associated with it – I will want you to read through the written content. To find these just click on the “PDF” download button found to the left of the video. I will also want you to read any corrections to the articles or correspondence related to the articles – you can find those links to the right of the video under the heading “related articles”.

You will need to set up a “NEJM Resident 360” account. Instructions on how to do this are provided in the screenshot below. If you have trouble setting up your account please contact the library library@osteo.wvsom.edu or call (304) 647-6261. I will not be able to help you with that. Once you’ve created your account follow the login instructions provided on the screenshot below (next page).
I have also found another way to login to NEJM Resident 360. Go to www.nejm.org then in the top left hand corner of the website there is a drop down menu called “NEJM Group” – hover over the menu, then choose “NEJM Resident 360”. Then use the username/password you
created for the NEJM Resident 360 site. See the screen shots below. I think you all will enjoy using NEJM Resident 360 – it has a lot of nice content.
I have provided you with the links to the YouTube videos and other websites. Simply hover your cursor over the hyperlink and click. If for some reason it doesn’t work I’ve provided enough information to you so that you can find the video on your own if needed. You could also copy and paste the hyperlink into your web browser.
Read the outcomes for each module and try to focus in on those while going through the content.
If you are unable to find the content that is not accessed via the WVSOM library (such as a YouTube video or a website), please contact me or my administrative assistant April Williams at awilliams@osteo.wvsom.edu or phone 304-793-6806. If you are having trouble accessing content that you access via the WVSOM library (such as NEJM, NEJM Resident 360, Clinical Key, etc.) then you need to contact the library to help you gain access at library@osteo.wvsom.edu or call (304) 647-6261.

This elective rotation is pass/fail. There is no remediation. See below for how you will be evaluated. When you have completed all the modules:

1. You will have a 10 question quiz in Universal Notes. You may take the quiz as many times as you need in order to achieve a score of ≥ 80%. Please see the instructions below on how to access the quiz.

2. You will write two board style questions, in clinical vignette style. You must choose from the topics listed in the required modules. You must provide your rational for the correct answer and provide a list of references you used to create the question. The references need to be in AMA format. I will review the questions and give you feedback about them – you will be able to resubmit any question(s) which needs improvement. Please review the document “Writing medical board questions” and follow these guidelines when writing your questions. This document can be found in eMedley under this course. You will submit your questions to my administrative assistant April Williams at awilliams@osteo.wvsom.edu. Her phone number is 304-793-6806. Your questions should be saved as a word document as follows: lastname.ICU.dateofsubmission for example, “Ziner.ICU.3.25.20”

3. The quiz and all submissions of board style test questions (including resubmissions of test questions) will need to be completed no later than 5 days from the last official day of the rotation. This is a 14 day rotation.

4. Just an FYI (and I hate to even say it) but failure to complete the above is considered a violation of WVSOM’s policy on student professionalism Institutional Policy ST-01 (https://www.wvsom.edu/About/policies_procedures) and will be reported as such. I know that this will not be a problem with anyone taking this course!

To access the quiz:

1. Log into Universal Notes at https://web.myuniversalnotes.com/index#home
2. Click on the Q-bank (circled Q on left column)
3. Click on Start a Quiz
4. In the “Questions by Tag” drop down menu select Topic
5. In the box labeled “topic tags” type: Rotation Exam: WVSOM Intensive Care Unit. Click to select that exam.
6. Select appropriate testing mode (Test Mode will lock you into 1 minute per question)
7. Set number of questions to 10
8. Click Submit and begin the test
9. At the end of the test click Finish Quiz and it will show your results.

Retake your quiz by clicking on “retake quiz” (as seen in the screenshot below) or by
I hope you enjoy working through the modules! At the end of the course you will receive a survey - thank you in advance for your thoughtful feedback on how to improve the course.

Before we get started let’s review the osteopathic relevance for this course:

**Osteopathic Relevance:**
It is of the utmost importance that an osteopathic physician be able to initiate management of a critically ill patient and do so with empathy and compassion for the patient and the family. Osteopathic physicians do so while remembering the Four Tenets of Osteopathic Medicine:

1. The body is a unit
2. Structure and function are interdependent
3. The body has self-healing and self-regulatory capabilities
4. Rational osteopathic care relies on the integration of these tenets in patient care

The osteopathic physician should always:

1. Apply the five models of osteopathic care to each relevant clinical scenario;
2. Diagnose and treat related somatic dysfunction when applicable;
3. Determine if OMT is primary, supportive, or non-contributory to treatment of the representative cases.

Please also refer to the osteopathic code of ethics that can be found in your clinical education manual at

**Osteopathic Oath**

[Image of the Osteopathic Oath]

https://www.wvsom.edu/sites/default/files/u127/%24Clinical_Manual_2018-
Module One
Hypoxemia and Hypercapnia
Oximetry
Acute respiratory failure
Capnography

Outcomes for Module One

- Students will be able to create a differential diagnosis for hypoxemia. AACOM 2016 and AAMC 2017 EPA 2
- Students will be able to recognize clinical features of hypercapnia and create a differential diagnosis of hypercapnia. EPA 2
- Students will be able to describe different oxygen delivery devices. EPA 10
- Students will be able to describe proper use and the limitations of pulse oximetry. EPA 10
- Students will be able to create a differential diagnosis for acute respiratory failure. EPA 2 and 10
- Students will be able to describe how capnography is used to monitor patients. EPA 10

Assignments for Module One

- Find Chapter 36 “Acute Respiratory Failure” in the book Critical Care Medicine: Principles of Diagnosis and Management in the Adult, 5th edition, in Clinical Key. Just read all the sections up to Acute Respiratory Distress Syndrome (ARDS). You do not need to read the ARDS sections in this chapter. You will be learning about ARDS later.
- In UpToDate read “Measures of oxygenation and mechanisms of hypoxemia”
- In UpToDate read “The evaluation, diagnosis, and treatment of the adult patient with acute hypercapnic respiratory failure”
- Watch YouTube video “Oxygen delivery devices in ICU.” (8 minutes 11 seconds) by IUCriticalCare at https://www.youtube.com/watch?v=IYc-cjd3x-A&t=252s
- Watch YouTube video “Oxygen Delivery Device” (4 minutes 19 seconds) by xtremern1 at https://www.youtube.com/watch?v=LGxV9mHqXP0&t=36s
- Learn about different Oxygen Delivery Devices by going to the website https://teachim.org/2017/07/15/oxygen-delivery-devices/
- Watch the video on YouTube titled “RT Clinic: Heated High Flow Cannula” (11 minutes 30 seconds) https://www.youtube.com/watch?v=tGtbHxjS6r8
• In NEJM watch the video in clinical medicine on “Pulse Oximetry” (16 minutes 4 seconds). Also read its accompanying PDF article (April 21, 2011 N Engl J Med 2011; 364:e33 DOI: 10.1056/NEJMvcm0904262). To access the video sign in to NEJM.org. Click on “Multimedia” select “Videos in Clinical Medicine”, then find the video. Find the PDF by clicking on “PDF” located to the left of the video image.

• Watch the NEJM video in Clinical Medicine “Monitoring Ventilation with Capnography” (16 minutes 31 seconds) and read its accompanying PDF article (November 8, 2012 N Engl J Med 2012; 367:e27 DOI: 10.1056/NEJMvcm1105237)

Additional (optional) resources for Module One:
• Read through the journal article “BTS guideline for oxygen use in adults in healthcare and emergency settings” (O’Driscoll BR, et al. Thorax 2017;72:i1–i90. doi:10.1136/thoraxjnl-2016-209729) can be accessed at https://thorax.bmj.com/content/thoraxjnl/72/Suppl_1/i1.full.pdf


• https://www.capnography.com/  This is a terrific website for learning more about capnography!

• How to Read and Interpret End-Tidal Capnography Waveforms at https://www.jems.com/2017/08/01/how-to-read-and-interpret-end-tidal-capnography-waveforms/

• UpToDate “Carbon dioxide monitoring (capnography)”

• Article “Oxygen-induced hypercapnia in COPD: myths and facts” (Abdo and Heunks Critical Care 2012, 16:323 ) can be accessed at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3682248/pdf/cc11475.pdf

Module Two
Use of Bag Valve Mask (BVM)

Intubation

Mechanical Ventilator Basics and Intro to Noninvasive Positive Pressure Ventilation

The ventilator bundle (strategies to prevent ventilator associated pneumonia)

Outcomes for Module Two
• Students will be able to describe the proper use of a bag valve mask. EPA 12
• Students will be able to describe how to intubate a patient. EPA 12
• Students will be able to describe noninvasive positive pressure ventilation. EPA 12
• Students will be able to describe basic ventilator modes (assist control - pressure control or volume control, pressure support). EPA 12
Students will be able to give examples of how to prevent ventilator associated pneumonia. EPA 13

Assignments for Module Two

- Watch the YouTube Video “Lesson 3 – Mask Ventilation: MICU Fellows Airway Course” (8 minutes 23 seconds) by Dr. Gallagher’s Neighborhood at https://www.youtube.com/watch?v=1goz1l28kUQ
- Watch the YouTube video “Lesson 5 - Direct Laryngoscopy: MICU Fellows Airway Course” (14 minutes 32 seconds) by Dr. Gallagher’s Neighborhood at https://www.youtube.com/watch?v=ZJtFb7IGPic
- Watch the YouTube video “Anatomical Landmarks When Intubating” (7 minutes 24 seconds) by George O. RRT at https://www.youtube.com/watch?v=P9U4nBziyw&list=WL&index=3&t=63s
- In NEJM Resident 360 click on “Rotation Prep”, select the “critical care” rotation
  o Click on the “ventilation” tab read all of the information under heading “fast facts”.
  o Scroll down towards the bottom of site and click on the “additional resources” heading and watch the NEJM video in clinical medicine: “noninvasive positive pressure ventilation” (10 minutes 20 seconds) and read its accompanying PDF article (June 4, 2015, N Engl J Med 2015; 372:e30, DOI: 10.1056/NEJMvcm1313336).
  o This part of the assignment is not required but strongly recommended especially before your ICU rotation during residency…watch the MedCram videos “Mechanical ventilation explained clearly” See below for the complete list of MedCram vent videos.
- Watch the YouTube video “Ventilator Association Pneumonia Prevention” (1 minute 53 seconds) by Kaiser Permanente Thrive at https://www.youtube.com/watch?v=51VraZs4W-U
- In UpToDate read “Risk factors and prevention of hospital-acquired and ventilator-associated pneumonia in adults”
MedCram Vent Videos found on YouTube

- Mechanical Ventilation Explained Clearly – Ventilator Settings and Modes (Remastered) by MedCram [https://www.youtube.com/watch?v=i6hmGVBBiJk]
- Ventilator Modes Explained! PEEP, CPAP, Pressure vs. Volume at [https://www.youtube.com/watch?v=iP_iN1qAPtI]
- Mechanical Ventilation Explained Clearly - Ventilator Settings & Modes at [https://www.youtube.com/watch?v=gk_Qf-JAL84&t=13s]
- Mechanical Ventilation Explained Clearly by MedCram.com | 2 of 5 at [https://www.youtube.com/watch?v=K0malG7Tz1o]
- Mechanical Ventilation Explained Clearly by MedCram.com | 3 of 5 at [https://www.youtube.com/watch?v=6Bdv7QhNNy4]
- Mechanical Ventilation Explained Clearly by MedCram.com | 4 of 5 at [https://www.youtube.com/watch?v=KHpJ21UWbhg]
- Mechanical Ventilation Explained Clearly by MedCram.com | 5 of 5 at [https://www.youtube.com/watch?v=Jx7oeJKzl9g]
- Ventilator Pearls Explained Clearly at [https://www.youtube.com/watch?v=NUN32O054G0]
- Ventilator Pearls Explained Clearly by MedCram.com | Part 2 at [https://www.youtube.com/watch?v=ex4Uh2J2hWQ]

Additional (optional) Resources for Module Two

- UpToDate article “Rapid sequence intubation for adults outside the operating room”
- YouTube video “Lesson 6 - Glidescope® or its Cousins: MICU Fellows Airway Course” by Dr. Gallagher’s Neighborhood at [https://www.youtube.com/watch?v=I1k_z8kGwt4]
- YouTube video “Will This Patient be Difficult to Intubate?” by JAMA Network at [https://www.youtube.com/watch?v=RnclqUYjwY]
- For a very brief overview of ventilator go to the website, Merck Manual Professional Version, search for “Overview of Mechanical Ventilation” or click on the link [https://www.merckmanuals.com/professional/critical-care-medicine/respiratory-failure-and-mechanical-ventilation/overview-of-mechanical-ventilation]
- For a brief overview of ventilator management go to the website Stat Pearls Ventilator Management at [https://www.ncbi.nlm.nih.gov/books/NBK448186/]
- Series of ventilator lectures by Strong Medicine on YouTube: for a complete list go to [https://www.youtube.com/playlist?list=PLBA5A30910F1FBF47]
- Rebelem.com also does a series on ventilator videos on YouTube (see the list below)
  - Frank Lodeserto at REBEL EM: Simplifying Mechanical Ventilation – Part I
Module Three
Arterial blood gas (ABG) interpretation
Insertion of arterial line
Arterial line (pressure transducer) troubleshooting
Venous blood gas (VBG) interpretation

Outcomes for Module Three
- Students will be able to interpret an arterial blood gas result. EPA 3
- Students will be able to create a differential diagnosis for an acid base disorder. EPA 2
- Students will be able to describe how to insert an arterial catheter. EPA 12
- Students will be able to troubleshoot problems with an arterial catheter. EPA 12

Note to the students: ABGs take some time to master. Keep learning and practicing!! Find a system that works for you and stick with it!!

Assignments for Module Three
- Watch the YouTube video “Understand the Arterial Blood Gas “ABG”! Awesome!” (22 minutes 20 seconds) https://www.youtube.com/watch?v=1TnykLis7nA by MedImmerson. This is a good introduction video to ABG interpretation.
- Here is another good introductory ABG video on YouTube, “Acid/Base || USMLE” (8 minutes 22 seconds) by Dirty Medicine at https://www.youtube.com/watch?v=J9jisOXB_Oo&t=189s
- Then read NEJM article “Physiological Approach to Assessment of Acid-Base Disturbances” (October 9, 2014, N Engl J Med 2014; 371:1434-1445 DOI: 10.1056/NEJMra1003327) and work through the examples at the end of the article and those in the supplementary appendix (click on the supplementary appendix link in the article to access those exercises – keep scrolling down the supplement to find the
exercises). Read the correction to the original article – find the link to the correction on the right hand side of the screen listed under “related articles”. Because this article and the supplement can be a little difficult to find, I’ve uploaded it into eMedley for you. Go to the course “Introduction to the ICU: Online Course” and find the document entitled, “Physiological Approach to Assessment of Acid-Base Disturbances”, the document called “ABG NEJM Supplement”, and the document called “Correction to ABG NEJM Article”.

- Watch the NEJM video in clinical medicine “Ultrasound Guided Insertion of a Radial Arterial Catheter” (9 minutes and 35 seconds) and read its accompanying PDF article (October 9, 2014, N Engl J Med 2014; 371:e21, DOI: 10.1056/NEJMvcm1213181).
- Watch the NEJM video in clinical medicine “Use of Pressure Transducers” (13 minutes and 21 seconds) and read its accompanying PDF article (April 6, 2017, N Engl J Med 2017; 376:e26, DOI: 10.1056/NEJMvcm1513613) and the correspondence about the article (July 27, 2017, N Engl J Med 2017; 377:400-401, DOI: 10.1056/NEJMc1705833) 
- Read the UpToDate article “Venous blood gases and other alternatives to arterial blood gases”

Additional (optional) Resources for Module Three

- There is a series of ABG Lectures on YouTube on Strong Medicine – these are very comprehensive and would be good to watch before your residency [https://www.youtube.com/playlist?list=PLFDCF820E88FC83ED](https://www.youtube.com/playlist?list=PLFDCF820E88FC83ED)
- An online acid-base book can be found at [https://www.anaesthesiamcq.com/AcidBaseBook/ABindex.php](https://www.anaesthesiamcq.com/AcidBaseBook/ABindex.php)
- The above website has practice cases that you can work through and you can access those at [https://www.anaesthesiamcq.com/AcidBaseBook/ab9_6.php#cases](https://www.anaesthesiamcq.com/AcidBaseBook/ab9_6.php#cases)

Module Four

Acute Respiratory Distress Syndrome (ARDS)
The Prone Position in ARDS
Community Acquired Pneumonia (CAP)
Health care associated pneumonia (HCAP)/Ventilator associated pneumonia (VAP)

Outcomes for Module Four
• Students will be able to describe the pathophysiology of acute respiratory distress syndrome. EPA 2
• Students will be able to diagnose acute respiratory distress syndrome. EPA 2
• Students will be able to create a differential diagnosis for acute respiratory distress syndrome. EPA 2
• Students will be able to explain why prone positioning is used in acute respiratory distress syndrome. EPA 12
• Students will be able to diagnose community acquired pneumonia, hospital acquired pneumonia, and ventilator associated pneumonia. EPA 2
• Students will be able to access the guidelines for community acquired pneumonia, hospital acquired pneumonia, and ventilator associated pneumonia. EPA 7

Assignments for Module Four
• Watch the YouTube video “Acute Respiratory Distress Syndrome (ARDS)” (13 minutes 16 seconds) by Doctor Mike Hansen at https://www.youtube.com/watch?v=INGKH7JnIpM&list=WL&index=8&t=0s
• In NEJM Resident 360 click on the “rotation prep” tab, click on the “change rotation” tab and choose “critical care”, then click on the “ARDS” tab, read everything under the “fast facts” tab
• Watch the YouTube video “Acute respiratory distress syndrome (ARDS) Etiology, Clinical features, Diagnosis, and Treatment” (21 minutes 59 seconds) by Premiered at https://www.youtube.com/watch?v=KXw8LXKcmrw&list=WL&index=9&t=1052s
• Watch the YouTube video “Proning the ARDS patient- why do we do it?” (3 minutes and 57 seconds) by Jonathan Downham at https://www.youtube.com/watch?v=FS4t5w1eCYw&list=WL&index=1
• In NEJM Resident 360 click on the “rotation prep” tab, click on the “change rotation” tab and choose “infectious disease”, then click on the “pneumonia tab”, read everything under the “fast facts” tab

Additional (optional) Resources for Module Four (you should know the guidelines below when you do your residency)
• Download your very own ARDS ventilator protocol pocket card at http://www.ardsnet.org/tools.shtml
• HAP/VAP Guidelines. “Management of Adults With Hospital-acquired and Ventilator-associated Pneumonia: 2016 Clinical Practice Guidelines by the Infectious Diseases
Society of America and the American Thoracic Society” found at https://www.idsociety.org/practice-guideline/hap_vap/

- Centers for Disease Control (CDC) CAP/HAP links to Prevention Guidelines found at https://www.cdc.gov/pneumonia/management-prevention-guidelines.html

**Module Five**

**Sedation and delirium in the ICU**

**Stress ulcer prophylaxis**

**DVT prophylaxis**

**Outcomes for Module Five**

- Students will be able to describe the use of sedation in the intensive care unit (ICU). EPA 4
- Students will be able to describe the causes of delirium in the intensive care unit. EPA 2
- Students will be able to describe strategies to reduce delirium in the ICU (i.e. the general principles of the ABCDEF bundle and the PADIS mnemonic (guidelines)). EPA 13
- Students will be able to identify which patients require stress ulcer prophylaxis. EPA 4
- Students will be able to describe the general principles of venous thromboembolism prevention. EPA 4

**Assignments for Module Five**

- In NEJM Resident 360 click on the “rotation prep” tab, click on the “change rotation” tab and choose “critical care”, then click on the “sedation and delirium” tab, read everything under the “fast facts” tab
  - Scroll down to the bottom and click on “additional resources” and click to view the CAM (Confusion Assessment Method) Worksheet – just look around so you can see all of the resources you could use in the future.
- Go to https://www.sccm.org/ICULiberation/ABCDEF-Bundles and read the purpose for the ABCDEF Bundle, know what the mnemonic stands for, and click around to skim through the various components, see the resources available for you to use in the future. FYI - You will need to know this stuff for your residency ICU rotations.
- Go to https://www.sccm.org/ICULiberation/Guidelines and skim through this website, know what the mnemonic PADIS stands for, and see the resources available for you to use in the future. FYI - For your residency ICU rotation you will need to know the PADIS Guidelines, which you can download at the website above but you don’t need to read through them today.
- Read the “summary and recommendations” section in the UpToDate article “Stress ulcers in the intensive care unit: Diagnosis, management, and prevention”, (reading the entire article is much better), know which patients require stress ulcer prophylaxis.
- In the UpToDate article “Prevention of venous thromboembolic disease in acutely ill hospitalized medical adults” read the following sections: introduction, epidemiology,
definition of VTE prophylaxis, our approach, and the summary and recommendations. Skip the section on “methods of thromboprophylaxis” (just know that you will need to know this for your residency).

Additional (optional) Resources for Module Five
- Read the UpToDate article “Sedative-analgesic medications in critically ill adults: Selection, initiation, maintenance, and withdrawal”
- Read the UpToDate article “Sedative-analgesic medications in critically ill adults: Properties, dosage regimens, and adverse effects”

Module Six
Types of shock
Vasopressors
Central line placement
PICC line placement

Outcomes for Module Six
- Students will be able to describe the different types of shock. EPA 2
- Students will be able to diagnose a patient with shock. EPA 2
- Students will be able to describe the general principles for the treatment of shock. EPA 4
- Students will be able to describe the different vasopressors used in shock. EPA 4
- Students will be able to describe how to place a central venous catheter using ultrasound guidance. EPA 12
- Students will be able to describe how a PICC line is inserted. EPA 12

Assignments for Module Six
- In NEJM Resident 360 click on the “rotation prep” tab, click on the “change rotation” tab and choose “critical care”, then click on the “shock and sepsis” tab, read everything under the “fast facts” tab
- Watch the YouTube videos on shock by Strong Medicine – as listed below
  o Shock: Lesson 1 - Diagnosis and Classification (12 minutes 37 seconds) at https://www.youtube.com/watch?v=vKr_B6zw7M8&list=PLYojB5NEEakXi2wW00LkbkcaESav1Quk9
• Watch one out of the two following NEJM videos in clinical medicine on central line placement using ultrasound in its entirety (and read the accompanying pdf), the others are there for your reference. The last three videos rely on anatomical landmarks for placement (good to know in case ultrasound isn’t available – you don’t need to watch them now unless you want to)
• Watch the YouTube video on “PICC LINE INSERTION FULL PROCEDURE” (14 minutes and 14 seconds) by Toni Aoun at https://www.youtube.com/watch?v=9FvUsjie8ic
• Read the UpToDate article “Complications of central venous catheters and their prevention”
Additional (optional) Resources for Module Six

- You can YouTube various videos about the RUSH ultrasound exam for further information
- Before your residency you should be familiar with central line associated blood stream infections. For an introduction to this topic read the online article “Central Line Associated Blood Stream Infections (CLABSI)” by StatPearls found at https://www.ncbi.nlm.nih.gov/books/NBK430891/
- YouTube video by MedCram “Shock Explained Clearly - Cardiogenic, Hypovolemic, and Septic” at https://www.youtube.com/watch?v=CbM4UlE1TQ
- UpToDate article, “Intravascular catheter-related infection: Prevention”

Module Seven
Sepsis
Septic Shock
CXR Interpretation

Outcomes for Module Seven

- Students will be able to describe sepsis and septic shock. EPA 2
- Students will be able to recognize and diagnose a patient with sepsis and septic shock. EPA 2
- Students will be able to initiate treatment for sepsis and septic shock using the one hour bundle. EPA 4
- Students will know where to find the complete guidelines used to diagnose and treat septic shock. EPA 7
- Students will be able to interpret a normal and an abnormal chest x-ray. EPA 3

Assignments for Module Seven

- Watch the YouTube video “Sepsis and Septic Shock” (17 minutes 20 seconds) by Strong Medicine at https://www.youtube.com/watch?v=3EVpyBORw5Y
- Read the UpToDate article “Sepsis syndromes in adults: Epidemiology, definitions, clinical presentation, diagnosis, and prognosis”. Know how to identify patients with
sepsis, i.e. how to diagnose it. Early recognition of sepsis is critical to improving mortality. Sepsis is a medical emergency!

- Go to the website https://www.sccm.org/SurvivingSepsisCampaign/Home
  
  - Hover over the tab “guidelines and bundles”, choose “adult patients” from the drop down menu, scroll down and read the “1-hour bundle” information, know all of the one hour bundle elements.
  
  - Click on the “Hour-1 Bundle Pocket Card and Infographic” and read through it – you can download this for yourself if you’d like.
  
  - Go back to the website (listed above) and hover over the tab “tools and education”, choose “implementation guide” from the drop down menu. Download and read through the entire guide.
  
  - Eventually you will need to know the entire sepsis guideline for your residency, if you want to download it now just go back to the “guidelines and bundles” tab, choose “adult patients” from the drop down menu, then click on the blue wording that says “Critical Care Medicine” or “Intensive Care Medicine”. You do not need to read through this now. For now I want you to be able to identify a septic patient and know how to start the one hour bundle. Also know that if the nurse cannot draw blood cultures on the patient (because of difficulty getting IV access, etc), this should not delay the administration of antibiotics. But every reasonable effort should be made to try to get the cultures first. Remember antibiotics in sepsis is life saving!
  
  - Go back to the website (listed above) and hover over the tab “tools and education”, choose “protocols and checklists” from the drop down menu. Check out some of the ways hospitals choose to identify patients with sepsis i.e. their protocols. Every hospital has their own protocol – when you get out to your residency make sure you know your hospital’s protocol for identifying septic patients. However, every hospital should follow the one hour sepsis treatment bundle and the rest of the sepsis guidelines.

- Watch the video “The Hour One Bundle Functional or Fantasy” (31 minutes 1 second) located on the website https://www.sccm.org/LearnICU/Resources/Surviving-Sepsis-Campaign-Hour-1-Bundle-Teaching-S

- Watch the YouTube CXR Lecture Series on CXR interpretation done by Strong Medicine (11 videos, each video is between 11 – 24 minutes). The list can be found via this link https://www.youtube.com/watch?v=PDaRNPUNc10&list=PLYojB5NEEakU6vTUAoUeVhgRzQgaoSnFi&index=2&t=0s

Additional (optional) Resources for Module Seven

- Download the phone app “Sepsis Clinical Guide” – this is a very good app.
- Chest radiographs at https://www.saem.org/cdem/education/online-education/m3-curriculum/group-diagnostic-testing/radiographic-interpretation/chest-radiograph
Introduction to Chest Radiology an online learning course at https://www.med-ed.virginia.edu/courses.rad/cxr/index.html

Module Eight
Communication of bad news
DNR Orders
Palliative care in the ICU
Post-ICU care syndrome
Neuromuscular weakness related to critical illness

Outcomes for Module Eight
- Students will be able to apply breaking bad news techniques during patient encounters. EPA 1
- Students will be able to discuss Do Not Resuscitate wishes with a patient. EPA 11
- Students will be able to describe the general principles of palliative care in the intensive care unit. EPA 4
- Students will be able to describe post-ICU syndrome and describe the general strategies employed to mitigate the syndrome. EPA 2
- Students will be able to describe intensive care unit-acquired weakness (ICUAW). EPA 2

Assignments for Module Eight
- Watch the YouTube video “5 Tips for breaking bad news to patients” (47 seconds) by TheDOMagazine at https://www.youtube.com/watch?v=GxnBDi9Vv8
- Watch the YouTube video “How Should Providers Deliver Bad News?” (7 minutes 27 seconds) by IHI Open School at https://www.youtube.com/watch?v=qHGvjv_7PLU
- Watch the YouTube video “We’re Doing Dying All Wrong | Ken Hillman | TEDxSydney” (14 minutes 2 seconds) by Tedx Talks at https://www.youtube.com/watch?v=gQVC-8WEB7s
- Watch the YouTube video “How to Discuss Do Not Resuscitate (DNR) Orders with Patients” (11 minutes 8 seconds) by OhioHealth at https://www.youtube.com/watch?v=-H6-yUpzd4
- Watch the YouTube video “DNR Code Status Explained Clearly” (14 minutes 9 seconds) by MedCram at https://www.youtube.com/watch?v=L3ejcptaXEc
- Watch the YouTube video “Palliative Care in the ICU & End of Life Care Explained Clearly” (8 minutes 37 seconds) by MedCram at https://www.youtube.com/watch?v=b3QraGZ9BSg
• Read the UpToDate article “Palliative care: Issues in the intensive care unit in adults”
• Watch the YouTube video “Post-intensive care syndrome? What is it? How can we help?” (26 minutes 14 seconds) by Critical Care Summit at https://www.youtube.com/watch?v=WpKnLeNJRFa
• Watch the video on “Intensive care unit-acquired weakness: The next challenge” (3 minutes 52 seconds) at https://www.esicm.org/ictv-intensive-care-unit-acquired-weakness-angus-dec-2017/

Additional (optional) Resources for Module Eight
• UpToDate article “Palliative care: The last hours and days of life”
• UpToDate article “Post-intensive care syndrome (PICS)”
• YouTube video “THRIVE: Redefining Recovery” by SCCM at https://www.youtube.com/watch?v=T03palv4mYU
• UpToDate article “Neuromuscular weakness related to critical illness”

Policies, disclaimers, and other resources (i.e. the fine print) for this course

Failure to Complete Required Assignments
Failure to complete the required assignments listed in this document is considered a violation of WVSOM’s policy on student professionalism Institutional Policy ST-01 (https://www.wvsom.edu/About/policies_procedures) and will be reported as such.

Evaluation Policies
Students will receive a pass or fail from this elective. Evaluation will be based on completion of assignments.

Remediation Policy
There is no remediation for this elective.

Core Competencies
Please refer to your student “Clinical Education Manual” for information regarding core competencies and core entrustable professional activities for entering residency. Your manual can be found at https://www.wvsom.edu/Academics/publications/Clinical_Education_Manual.

The core competencies can be found using this link: http://www.wvsom.edu/Academics/pre-clinica-competencies

The AACOM 2016 core entrustable professional activities for entering residency can be found at https://www.aacom.org/docs/default-source/med-ed-presentations/core-epas.pdf?sfvrsn=10
The AAMC 2017 core entrustable professional activities for entering residency can be found at [https://www.aamc.org/what-we-do/mission-areas/medical-education/cbme/core-epas/publications](https://www.aamc.org/what-we-do/mission-areas/medical-education/cbme/core-epas/publications)

**Professionalism**

Professionalism will be exhibited each day in class and each student will be expected to adhere to institutional policy [ST-01](http://www.wvsom.edu/About/policies_procedures) and their own statement below which was written by the student government association:

“As medical students of the West Virginia School of Osteopathic Medicine, we acknowledge and value the importance of professional conduct. We recognize that the behavior and attitudes of individuals and groups reflects on all of us, our institution, and our profession. Professionalism encompasses but is not limited to the virtues of respect, integrity, honesty, confidentiality, and dependability. We will strive to uphold these values in our endeavors at all times. We will show honesty and integrity to all those we come into contact with, meaning that we will adhere to the moral and ethical principles we have been taught and show soundness of moral character. We will be expected to maintain confidentiality in all settings no matter how small the issue. Above all else we will show self-less service to our patients, colleagues, institution and community.”

For further details that relate to professional behavior, refer to the following institutional policies that can be accessed on the WVSOM Website at [http://www.wvsom.edu/About/policies_procedures](http://www.wvsom.edu/About/policies_procedures)

**Copyright**

Materials used in this course may be copyrighted and should not be shared with individuals not currently enrolled in this course. Sharing copyrighted materials outside of WVSOM will result in having a note in the student’s Dean’s file regarding unprofessional conduct.

**All Institutional Student Related Policies**

To view all institutional student related policies, log onto the WVSOM web page and access the following: [http://www.wvsom.edu/OMS/student-policies](http://www.wvsom.edu/OMS/student-policies)

This syllabus is subject to change upon written notification.