PLEASE READ THE INTRODUCTORY PAGES VERY CAREFULLY.

THEY CONTAIN IMPORTANT POLICY STATEMENTS.

Curriculum guides are subject to revision. Updated versions of the Curriculum Guide will be posted on the School of Medicine website: http://asp.med.wayne.edu/curriculumguides.php

Revised October 4, 2016
Wayne State University School of Medicine
Domains and Competencies for the Medical Education Program Leading to the MD Degree

Background information

In 2013, the Association of American Medical Colleges (AAMC) synthesized over 150 competency lists from across medical education continuum, physician specialties and subspecialties, countries and healthcare professions to develop a list of common learner expectations utilized in the training of physicians and other health professionals: Physician Competency Reference Set (PCRS). These competencies define the desired outcomes across the continuum of education, training, and practice.¹

The AAMC also developed the 13 Core Entrustable Professional Activities for Entering Residency (EPAs) that all entering residents should be expected to perform on day 1 of residency without direct supervision regardless of specialty choice (see Appendix 1). The EPAs provide the clinical context for the PCRS competencies. Each EPA can be mapped to the competencies that are critical to making an entrustment decision.² More information about the EPAs and development of curriculum for the measurement of entrustment is available in the AAMC’s Publication: Core Entrustable Professional Activities for Entering Residency Curriculum Developers Guide: https://members.aamc.org/eweb/upload/Core%20EPA%20Curriculum%20Dev%20Guide.pdf

New Institutional Domains of Competency and Competencies

In 2016, Wayne State University School of Medicine (WSUSOM) analyzed the current institutional learning objectives and decided to revise its competency domains and related competencies for the program leading to the MD degree. As a result, the new AAMC domains of competency were assumed and many institutional competencies changed; in some areas, the previous WSUSOM competencies were maintained but mapped to a PCRS competency and in other areas the new PCRS competencies were adopted. The new domains and competencies are intended to be in line with the AAMC’s PCRS and to map the competencies to the EPAs. WSUSOM Undergraduate Medical Education Curriculum Committee approved the competency domains and competencies on June 8, 2016; they will be instituted in the 2016-2017 academic year. Please note that the competencies that represent the WSUSOM mission toward urban clinical excellence are highlighted throughout the document.

### DOMAIN 1: KNOWLEDGE FOR PRACTICE (KP): Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care

<table>
<thead>
<tr>
<th>Relevant Entrustable Professional Activities</th>
<th>Reference to the PCRS</th>
<th>WSUSOM Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 1, 3, 13</td>
<td>KP 1</td>
<td>KP 1: Demonstrate an investigatory and analytic approach to clinical situations</td>
</tr>
<tr>
<td>EPA 2</td>
<td>KP 2</td>
<td>KP 2: Apply established and emerging biophysical scientific principles fundamental to health care for patients and populations</td>
</tr>
<tr>
<td>EPA 2, 7</td>
<td>KP 3</td>
<td>KP 3: Apply established and emerging principles of clinical sciences to diagnostic and therapeutic decision making, clinical problem solving, and other aspects of evidence-based health care</td>
</tr>
<tr>
<td>EPA 2, 3, 7</td>
<td>KP 4</td>
<td>KP 4: Apply principles of epidemiological sciences to the identification of health problems, risk factors, treatment strategies, resources, and disease prevention/health promotion efforts for patients and populations*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KP 5: Apply psychosocial principles and concepts in the delivery of health care, including assessment of the impact of psychosocial-cultural influences on health, disease, care-seeking, care-compliance, and barriers to and attitudes toward care*</td>
</tr>
<tr>
<td></td>
<td>KP 6</td>
<td>KP 6: Contribute to the creation, dissemination, application, and translation of new health care knowledge and practices</td>
</tr>
</tbody>
</table>

### DOMAIN 2: PATIENT CARE (PC): Provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health

<table>
<thead>
<tr>
<th>Relevant Entrustable Professional Activities</th>
<th>Reference to PCRS</th>
<th>WSUSOM Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 10, 12</td>
<td>PC 1</td>
<td>PC 1: Perform routine technical procedures specified by the medical school and clerkship</td>
</tr>
<tr>
<td>EPA 1, 2, 4, 6, 10</td>
<td>PC 2</td>
<td>PC 2A: Take a satisfactory medical history including psychosocial, nutritional, occupational and sexual dimensions</td>
</tr>
<tr>
<td>EPA 1, 2, 4, 6, 10</td>
<td>PC 2</td>
<td>PC 2B: Perform a satisfactory physical exam</td>
</tr>
<tr>
<td>EPA 1, 2, 4, 6, 10</td>
<td>PC 2</td>
<td>PC 2C: Accurately document the clinical encounter</td>
</tr>
<tr>
<td>EPA 10, 11</td>
<td>PC 3</td>
<td>PC 3: Apply the concepts and principles of patient safety science in the delivery of clinical care</td>
</tr>
<tr>
<td>EPA 2, 3, 5, 10</td>
<td>PC 4</td>
<td>PC 4A: Apply laboratory and imaging methods in identifying diseases or health problems</td>
</tr>
<tr>
<td>EPA 2, 3, 5, 10</td>
<td>PC 4</td>
<td>PC 4B: Interpret laboratory data, imaging studies, and other tests required for the area of practice</td>
</tr>
<tr>
<td>EPA 3, 4, 10</td>
<td>PC 5</td>
<td>PC 5A: Utilize data from the history, physical exam and laboratory evaluations, with up-to-date scientific evidence to identify health problems</td>
</tr>
<tr>
<td>EPA 3, 4, 10</td>
<td>PC 5</td>
<td>PC 5B: Formulate an appropriate differential diagnosis</td>
</tr>
</tbody>
</table>
## DOMAIN 2: PATIENT CARE (PC): Provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health

<table>
<thead>
<tr>
<th>Relevant Entrustable Professional Activities</th>
<th>Reference to PCRS</th>
<th>WSUSOM Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 4, 5, 10, 11</td>
<td>PC 6</td>
<td>PC 6A: Formulate effective management plans (diagnostic, treatment, prevention strategies, including relieving pain and ameliorating the suffering of patients) for diseases and other health problems</td>
</tr>
<tr>
<td>EPA 4, 5, 10, 11</td>
<td>PC 6</td>
<td>PC 6B: Monitor the course of illnesses and to appropriately revise the management plan</td>
</tr>
<tr>
<td>EPA 3, 11, 12</td>
<td>PC 7</td>
<td>PC 7: Counsel and educate patients and their families to empower them to participate in their care and enable shared decision making*</td>
</tr>
<tr>
<td>EPA 8</td>
<td>PC 8</td>
<td>PC 8: Understand the need and value of consultations and referrals in the delivery of health care</td>
</tr>
<tr>
<td>EPA 3</td>
<td>PC 9</td>
<td>PC 9: Apply preventive and health maintenance principles and techniques in the delivery of health care*</td>
</tr>
<tr>
<td></td>
<td>PC 10</td>
<td>PC 10: Provide appropriate role modeling</td>
</tr>
<tr>
<td></td>
<td>PC 11</td>
<td>PC 11: Perform supervisory responsibilities commensurate with one’s roles, abilities, and qualifications</td>
</tr>
<tr>
<td></td>
<td>PC 12</td>
<td>PC 12: Diagnose and manage patients with common diseases and health-related conditions prevalent in urban settings*</td>
</tr>
</tbody>
</table>

## DOMAIN 3: PRACTICE-BASED LEARNING AND IMPROVEMENT (PBLI): Demonstrate the ability to investigate and evaluate one’s care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning

<table>
<thead>
<tr>
<th>Relevant Entrustable Professional Activities</th>
<th>Reference to PCRS</th>
<th>WSUSOM Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 2, 4, 6, 7</td>
<td>PBLI 1</td>
<td>PBLI 1: Recognize personal educational needs and to select and utilize appropriate resources to optimize learning</td>
</tr>
<tr>
<td></td>
<td>PBLI 2</td>
<td>PBLI 2: Set learning and improvement goals</td>
</tr>
<tr>
<td>EPA 7</td>
<td>PBLI 3</td>
<td>PBLI 3: Identify and perform learning activities that address one’s gaps in knowledge, skills, or attitudes</td>
</tr>
<tr>
<td>EPA 13</td>
<td>PBLI 4</td>
<td>PBLI 4: Systematically analyze practice using quality-improvement methods and implement changes with the goal of practice improvement</td>
</tr>
<tr>
<td>EPA 8</td>
<td>PBLI 5</td>
<td>PBLI 5: Incorporate feedback into daily practice</td>
</tr>
<tr>
<td>EPA 7</td>
<td>PBLI 6</td>
<td>PBLI 6: Locate, appraise, and assimilate evidence from scientific studies related to patients’ health problems</td>
</tr>
<tr>
<td>EPA 4, 7, 8</td>
<td>PBLI 7</td>
<td>PBLI 7: Use information technology to optimize learning</td>
</tr>
<tr>
<td></td>
<td>PBLI 8</td>
<td>PBLI 8: Participate in the education of patients, families, students, trainees, peers, and other health professionals</td>
</tr>
<tr>
<td>EPA 3, 7</td>
<td>PBLI 9</td>
<td>PBLI 9: Obtain and utilize information about individual patients, populations of patients, or communities from which patients are drawn to improve care*</td>
</tr>
</tbody>
</table>
**DOMAIN 3: PRACTICE-BASED LEARNING AND IMPROVEMENT (PBLI):** Demonstrate the ability to investigate and evaluate one’s care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning

| EPA 13 | PBLI 10 | PBLI 10: Recognize the need to engage in lifelong learning to stay abreast of relevant scientific advances |

**DOMAIN 4: INTERPERSONAL AND COMMUNICATION SKILLS (ICS):** Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals

<table>
<thead>
<tr>
<th>Relevant Entrustable Professional Activities</th>
<th>Reference to PCRS</th>
<th>WSUSOM Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 1, 4, 5, 6, 11</td>
<td>ICS 1</td>
<td>ICS 1: Effectively interact with patients, peers, families and other healthcare workers from diverse cultural backgrounds*</td>
</tr>
<tr>
<td>EPA 2, 5, 6, 7, 8, 9, 10, 13</td>
<td>ICS 2</td>
<td>ICS 2: The ability to effectively communicate with peers and members of the healthcare team in the care of patients and their families</td>
</tr>
<tr>
<td>EPA 8, 9</td>
<td>ICS 3</td>
<td>ICS 3: The ability to work cooperatively with other health care workers in the delivery of health care</td>
</tr>
<tr>
<td></td>
<td>ICS 4</td>
<td>ICS 4: Act in a consultative role to other health professionals</td>
</tr>
<tr>
<td>EPA 5, 11, 12</td>
<td>ICS 5</td>
<td>ICS 5: Maintain comprehensive, timely, and legible medical records</td>
</tr>
<tr>
<td>EPA 10, 12</td>
<td>ICS 6</td>
<td>ICS 6: Demonstrate sensitivity, honesty, and compassion in difficult conversations (e.g., about issues such as death, end-of-life issues, adverse events, bad news, disclosure of errors, and other sensitive topics</td>
</tr>
<tr>
<td>EPA 1, 9, 11</td>
<td>ICS 7</td>
<td>ICS 7: Demonstrate insight and understanding about emotions and human responses to emotions that allow one to develop and manage interpersonal interactions</td>
</tr>
</tbody>
</table>
**DOMAIN 5: PROFESSIONALISM (P):** Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles

<table>
<thead>
<tr>
<th>Relevant Entrustable Professional Activities</th>
<th>Reference to PCRS</th>
<th>WSUSOM Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 1, 6, 9</td>
<td>P 1</td>
<td>P 1: Demonstrate compassion, integrity, and respect for others, in particular people from vulnerable population*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P 2: Demonstrate responsiveness to patient needs that supersedes self-interest</td>
</tr>
<tr>
<td>EPA 1, 6, 8</td>
<td>P 3</td>
<td>P 3 Respect the patients’ dignity, privacy, and confidentiality in the delivery of health care</td>
</tr>
<tr>
<td>EPA 5, 13</td>
<td>P 4</td>
<td>P 4: Demonstrate accountability to peers, patients, society, and the profession</td>
</tr>
<tr>
<td>EPA 1</td>
<td>P 5</td>
<td>P 5: Demonstrate sensitivity and responsiveness to diverse populations, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation*</td>
</tr>
<tr>
<td>EPA 12</td>
<td>P 6</td>
<td>P 6: Demonstrate a 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</td>
</tr>
<tr>
<td></td>
<td>P 7</td>
<td>P 7: Demonstrate credibility, initiative, integrity and professional competence needed to gain the confidence and respect of others while providing clinical care or other services to diverse populations in an urban setting*</td>
</tr>
</tbody>
</table>

**DOMAIN 6: SYSTEMS-BASED PRACTICE (SBP):** Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care

<table>
<thead>
<tr>
<th>Relevant Entrustable Professional Activities</th>
<th>Reference to PCRS</th>
<th>WSUSOM Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 5</td>
<td>SBP 1</td>
<td>SBP 1: Describe the health care delivery systems including social, economic and political dimensions</td>
</tr>
<tr>
<td>EPA 9</td>
<td>SBP 2</td>
<td>SBP 2: Coordinate patient care within the health care system relevant to one’s clinical specialty</td>
</tr>
<tr>
<td>EPA 3, 4, 11, 12</td>
<td>SBP 3</td>
<td>SBP 3: Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population based care*</td>
</tr>
<tr>
<td>EPA 13</td>
<td>SBP 4</td>
<td>SBP 4: Advocate for quality patient care and optimal patient care systems to support and contribute to a culture of safety</td>
</tr>
<tr>
<td>EPA 13</td>
<td>SBP 5</td>
<td>SBP 5: Participate in identifying system errors and implementing potential systems solution</td>
</tr>
<tr>
<td></td>
<td>SBP 6</td>
<td>SBP 6: Perform administrative and practice management responsibilities commensurate with one’s role, abilities, and qualifications</td>
</tr>
</tbody>
</table>

**DOMAIN 7: INTERPROFESSIONAL COLLABORATION (IPC):** Demonstrate the ability to engage in an inter-professional team in a manner that optimizes safe, effective patient and population-centered care
<table>
<thead>
<tr>
<th>Relevant Entrustable Professional Activities</th>
<th>Reference to PCRS</th>
<th>WSUSOM Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 9</td>
<td>IPC 1</td>
<td>IPC 1: Work with other health professionals to establish and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust</td>
</tr>
<tr>
<td>EPA 9</td>
<td>IPC 2</td>
<td>IPC 2: Use the knowledge of one’s own role and those of other professions to appropriately assess and address the health care needs of the patients and populations served*</td>
</tr>
<tr>
<td>EPA 9</td>
<td>IPC 3</td>
<td>IPC 3: Communicate with other health professionals in a responsive and responsible manner that supports the maintenance of health and the treatment of disease in individual patients and populations</td>
</tr>
<tr>
<td></td>
<td>IPC 4</td>
<td>IPC 4: Participate in different team roles to establish, develop, and continuously enhance inter-professional teams to provide patient- and population-centered care that is safe, timely, efficient, effective, and equitable*</td>
</tr>
</tbody>
</table>

**DOMAIN 8: PERSONAL AND PROFESSIONAL DEVELOPMENT (PPD): Demonstrate the qualities required to sustain lifelong personal and professional growth**

<table>
<thead>
<tr>
<th>Relevant Entrustable Professional Activities</th>
<th>Reference to PCRS</th>
<th>WSUSOM Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PPD 1</td>
<td>PPD 1: Develop the ability to use self-awareness of knowledge, skills, and emotional limitations to engage in appropriate help-seeking behaviors</td>
</tr>
<tr>
<td></td>
<td>PPD 2</td>
<td>PPD 2: Demonstrate healthy coping mechanisms to respond to stress</td>
</tr>
<tr>
<td></td>
<td>PPD 3</td>
<td>PPD 3: Manage conflict between personal and professional responsibilities</td>
</tr>
<tr>
<td>EPA 6</td>
<td>PPD 4</td>
<td>PPD 4: Practice flexibility and maturity in adjusting to change with the capacity to alter behavior</td>
</tr>
<tr>
<td></td>
<td>PPD 5</td>
<td>PPD 5: Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients</td>
</tr>
<tr>
<td></td>
<td>PPD 6</td>
<td>PPD 6: Provide leadership skills that enhance team functioning, the learning environment, and/or the health care delivery system</td>
</tr>
<tr>
<td>EPA 6, 11, 12</td>
<td>PPD 7</td>
<td>PPD 7: Demonstrate self-confidence that puts patients, families, and members of the health care team at ease</td>
</tr>
<tr>
<td>EPA 2</td>
<td>PPD 8</td>
<td>PPD 8: Recognize that ambiguity is part of clinical health care and respond by using appropriate resources in dealing with uncertainty</td>
</tr>
</tbody>
</table>

* Competency that is aligned with WSUSOM’s mission and program goal of Urban Clinical Excellence
### Appendix 1

**AAMC Core Entrustable Professional Activities for Entering Residency**

<table>
<thead>
<tr>
<th>EPA</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 1</td>
<td>Gather a history and perform a physical examination</td>
</tr>
<tr>
<td>EPA 2</td>
<td>Prioritize a differential diagnosis following a clinical encounter</td>
</tr>
<tr>
<td>EPA 3</td>
<td>Recommend and interpret common diagnostic and screening tests</td>
</tr>
<tr>
<td>EPA 4</td>
<td>Enter and discuss orders and prescriptions</td>
</tr>
<tr>
<td>EPA 5</td>
<td>Document a clinical encounter in the patient record</td>
</tr>
<tr>
<td>EPA 6</td>
<td>Provide an oral presentation of a clinical encounter</td>
</tr>
<tr>
<td>EPA 7</td>
<td>Form clinical questions and retrieve evidence to advance patient care</td>
</tr>
<tr>
<td>EPA 8</td>
<td>Give or receive a patient handover to transition care responsibility</td>
</tr>
<tr>
<td>EPA 9</td>
<td>Collaborate as a member of an interprofessional team</td>
</tr>
<tr>
<td>EPA 10</td>
<td>Recognize a patient requiring urgent or emergent care and initiate evaluation and management</td>
</tr>
<tr>
<td>EPA 11</td>
<td>Obtain informed consent for tests and/or procedures</td>
</tr>
<tr>
<td>EPA 12</td>
<td>Perform general procedures of a physician</td>
</tr>
<tr>
<td>EPA 13</td>
<td>Identify system failures and contribute to a culture of safety and improvement</td>
</tr>
</tbody>
</table>
GENERAL ORGANIZATION OF THE CURRICULUM

The Year 1 Curriculum for 2012-2013 will consist of eight courses: Gross Anatomy, Histology/Embryology, Population, Patient, and Physician, Physiology, Biochemistry, Clinical Nutrition, Genetics and Neuroscience.

ACADEMIC AND STUDENT PROGRAMS OFFICE

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vice Dean for Medical Education</td>
<td>Richard Baker, MD</td>
<td>577-5196</td>
</tr>
<tr>
<td>Associate Dean for Medical Education</td>
<td>Patrick Bridge, Ph.D.</td>
<td>577-1450</td>
</tr>
<tr>
<td>Assistant Dean for Basic Sciences</td>
<td>Matt Jackson, Ph.D.</td>
<td>577-1450</td>
</tr>
<tr>
<td>Assistant Dean for Clinical Sciences</td>
<td>Kendra Schwartz, M.D.</td>
<td>577-1450</td>
</tr>
<tr>
<td>Supervisor Records and Registration</td>
<td>JaEsta Jones,</td>
<td>577-1470</td>
</tr>
<tr>
<td>Director of Assessment and Education Research</td>
<td>Jason Booza, Ph.D.</td>
<td>577-3889</td>
</tr>
</tbody>
</table>

YEAR 1 COURSE DIRECTORS FOR 2016-2017

<table>
<thead>
<tr>
<th>Course</th>
<th>Director</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROSS ANATOMY</td>
<td>Paul Walker, PhD</td>
<td>577-1529</td>
</tr>
<tr>
<td>HISTOLOGY/EMBRYOLOGY</td>
<td>Rodney Braun, PhD</td>
<td>577-4764</td>
</tr>
<tr>
<td>BIOCHEMISTRY</td>
<td>Sharon Ackerman, PhD</td>
<td>577-8645</td>
</tr>
<tr>
<td>PHYSIOLOGY</td>
<td>Robert Lasley, PhD</td>
<td>577-9444</td>
</tr>
<tr>
<td>GENETICS</td>
<td>Michelle Cichon, MS</td>
<td>577-3982</td>
</tr>
<tr>
<td></td>
<td>Gerald Feldman, MD, PhD</td>
<td>577-6298</td>
</tr>
<tr>
<td>CLINICAL NUTRITION</td>
<td>Tonia Reinhard, MS, RD</td>
<td>577-2963</td>
</tr>
<tr>
<td></td>
<td>Mary Width, MS, RD</td>
<td>577-4370</td>
</tr>
<tr>
<td>NEUROSCIENCES</td>
<td>Jean Peduzzi-Nelson, PhD</td>
<td>577-1045</td>
</tr>
<tr>
<td>POPULATION, PATIENT, AND PHYSICIAN</td>
<td>Kendra Schwartz, MD</td>
<td>577-1450</td>
</tr>
<tr>
<td>SELF DIRECTED LEARNING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIRST PATIENT COURSE</td>
<td>Matt Jackson, PhD</td>
<td>577-1450</td>
</tr>
</tbody>
</table>
ACADEMIC PROGRAM

The Year 1 program is primarily devoted to understanding normal structure and function. In the course of achieving this objective, the curriculum is designed to help the student prepare him/her self for his/her role as a problem solver. This will involve acquiring basic information, but, more importantly, it will also involve understanding concepts and relationships. The lecture is one important method we have to help you learn. It is used to define part of what you are expected to know. It should be supplemented and reinforced by reading your assigned text readings, lecture notes, conferring with faculty and fellow students, and participating in the laboratories, computer assisted and problem solving sessions, and use of the web-based resources.

ACADEMIC COMMUNICATION

Official Student Notices, Curricular Updates and Other Communications

The E-mail provided by the University for every student is a powerful communications tool. As described below, each class has a Class Listserve established to allow students to talk to their class members, for faculty to provide course information to the class, and for administration to communicate with the class. Please check your E-mail on a regular basis.

Information which Academic and Student Programs and the Office of Student Affairs need to communicate to the class will be provided through the Class Listserve to all members of the class and will also be posted outside of Conjoint Teaching and on the class bulletin boards and inside the Student Affairs Office. Such communications will include the testing logistics memos, official schedule changes and information regarding meetings among others. Immediate, critical information will continue to be communicated to the class with a paper memo in students’ mailboxes in addition to the Listserve communication.

UNIVERSITY CLOSURE

In the event that Wayne State University closes due to severe weather then the School of Medicine will be closed. All classes, small group activities, and exams schedule during the closure will be cancelled. A revised schedule will be sent out via the list-serve.

Sign up for WSU broadcast messages here: http://computing.wayne.edu/broadcast/

E-MAIL ADDRESS AND CLASS LISTSERV

Faculty and Academic staff use a variety of methods to communicate with students. One of these methods is electronic mail (e-mail). All incoming medical students will be issued two e-mail addresses. The primary address, created and supported by the school of medicine will be issued during registration. The University will also issue an address that will allow you free access to the Internet and other on-line University services. This address will be mailed to you after classes begin by the University’s computing services division. Students who were undergraduates at Wayne State will continue to use their undergraduate addresses and will not receive new e-mail accounts or passwords.

A class listserv will be created for students, faculty and academic administration to communicate general announcements to the class. Students should read their e-mail daily for important curriculum information. If you have any question regarding your e-mail address or the listserv contact the Medical
Education Support Group, Suite 231 Mazurek Education Commons.

HONOR CODE
Wayne State University School of Medicine has an Honor Code expressed in the Oath of Academic Integrity presented to and signed by the Year 1 students during Orientation. Students, faculty and administration believe that academic and professional integrity is an important component in the training and practice of medicine.

Oath of Integrity

As a part of a community of medical students, I know that my instructors and fellow students have placed their trust in my academic and professional integrity. I recognize the importance of helping each other as we struggle. Dishonesty within a medical school, however, affects not only the student, but also the reputation of the institution, and potentially our future patients.

In view of this, I hereby vow to pursue my studies with integrity and conscience. I will not accept dishonesty among my peers and pledge to honor that trust that my instructors and fellow classmates have placed in me.

As a future physician, my patients and colleagues will entrust to me matters of a sensitive and confidential nature. In some circumstances, their very lives will depend upon my integrity. I will respect their faith in me and will maintain the level of dignity and honesty that medicine demands. From this day forward, I will keep honor in this profession.

ATTENDANCE
Participation in instructional activities reveals a student's attitude toward his/her professional preparation. Consequently, attendance is expected. **Attendance is mandatory** for laboratories, Clinical Medicine small groups, conferences, case studies, demonstrations, patient panels and clinic days. Attendance will be monitored using OneCard readers or sign-in sheets for off-campus activities.

MISSING ASSIGNMENTS Failure to complete all assignment, including make-up assignments for missed activities, **by the end of a course** could result in any of the following consequences:

- Being excluded from participation in any scheduling processes for the following year
- Being prevented from registering for the following year
- Having registration for the following year cancelled

LECTURE HALL ETIQUETTE
The following items highlight elements of common courtesy expected of all medical students who attend lectures:

- Silence all cell phones and pages in the lecture hall.

- If you attend lectures, plan to stay. Sit close to an exit if you think you may have to leave a lecture early.

- Do not engage in activities during lecture that have nothing to do with the class.

- Keep whispering to a minimum.
Your compliance with these issues is an indicator of professionalism and will be greatly appreciated by the School of Medicine faculty and your fellow student/peers.

**STUDENT DISABILITIES**
Services for students with disabilities are coordinated by the Student Disability Services (SDS) Office located on the first floor of the David Adamany Undergraduate Library at 5155 Gullen Mall. Detailed information about SDS, the Americans with Disability Act (ADA), SDS policies and procedures, documentation guidelines, and types of accommodations can be found on the SDS website [http://studentdisability.wayne.edu/index.php](http://studentdisability.wayne.edu/index.php). The medical school encourages you to refer to the SDS website if you have a documented disability or suspect you have a disability that will impact your medical school performance. The SDS office can be contacted at 313-577-1851. Office hours are Monday-Friday 8:30-5:00 with extended evening hours on Monday and Thursday evenings until 7:00 during the fall and winter. *For further information on the Student Disability Services, please refer to the Policy and Procedures Manual.*

**COURSE EXAMINATIONS**
There will be two types of examinations, promotional and non-promotional. The purpose of promotional examinations is to determine whether students have acquired the necessary knowledge and skills. Faculty can also administer examinations to enable students to assess their grasp of the material. Promotional examinations will **NOT** be returned to the students. Academic and Student Programs has instituted a Protected Examination Policy. Students are permitted, and strongly encouraged to use the Examination Question Citation process. Details of the Question Citation process will be presented to students at a separate Testing and Evaluation meeting prior to the first scheduled examination. *For further information on the course examination process, please refer to the Policy and Procedures Manual.*

A comparable examination will be administered for students who have an excused absence. It will be comparable in content to the original examination and it will have the same pass-fail level. The exam will **NOT** be retained by the student. Students cannot cite questions on a makeup examination. Make-up exam will be administered every month during the academic term. Students who receive excused absences will be automatically scheduled for an exam at the next available make-up date. Exam schedules may found in the online Year 1 course schedule.

**GRADING POLICIES**
When the process for determining the student’s final grades for courses, clerkships, electives or years is completed, one of the following grades will be placed on the student's transcript, i.e., I = Incomplete, U = Unsatisfactory, S = Satisfactory. Students that feel their grade is incorrect have the right to appeal the grade. *For further information on the Grading Policy, please refer to the Policy and Procedures Manual.*

**PROMOTION**
The Promotions Committee is the medical school decision-making body with regard to the promotions process and has the prerogative of determining the student’s fitness and suitability for the study and practice of medicine. The Promotions Committee makes decisions relative to the retention, promotion, and readmission of students. It also has the responsibility of assuring that the rules of the School and rights of the individuals involved have been fairly met. The Promotions Committee will formally provide
instructions for the exit interview with students who have been dismissed. For further information on the promotion process, please refer to the Policy and Procedures Manual

ACADEMIC STANDING
Enrolled students are designated to be in good academic standing unless they are officially placed on probation or are suspended. For further information on the Academic Standing, please refer to the Policy and Procedures Manual.

MODIFIED (DECELERATED) PROGRAM
A modified curriculum is offered that permits students to reduce their academic load in basic science courses and more effectively manage their time. The modified program will permit students to complete year 1 and year 2 courses in three years rather than the traditional two. This is a 5-year program that will change the graduation date for students who select it.

Students will be offered the modified program following exam failures in Anatomy and Histology. A student may accept or decline the offer and first year students are permitted to self-select the modified program. The deadline for the decision to modify is until all positions are filled or the day prior to winter recess, whichever occurs first.

A sample curriculum for the first year of the modified program would include: Histology, Biochemistry, Clinical Nutrition, and Genetics. A sample second year curriculum would be: Anatomy, Physiology, Neurosciences, and Clinical Medicine 1. Modified students who successfully complete the requirements for year 1 course will matriculate to a standard second year curriculum.

Modified program students will be considered part-time by the Medical School for both of the modified years. Therefore, the appropriate University policy for tuition assessment and federal regulations for financial aid for students carrying less than a full load will apply. It is the responsibility of the student to discuss the implications of modifying to part-time status with the Financial Aid Office.

MANDATORY DIRECTED STUDY FOR YEAR 1 AND YEAR 2 STUDENTS REPEATING COURSEWORK
Students who are repeating coursework in Years 1 or 2 must also enroll in and complete a directed study course. This is a mandatory requirement of the Promotions Committee designed to enhance a student’s study and test-taking skills with the goal of successful completion of remediation and to provide an educational foundation for advancement to the next level of training. For further information on the Directed Study Program, please refer to the Policy and Procedures Manual.

LEAVE OF ABSENCES
Students are expected to complete assignments as scheduled and pursue the course of study in the prescribed medical school sequence. On occasion a student’s normal progression may be interrupted by – illness, pursuance of another course of study or research, or personal reasons. All requests for a leave of absence from the School of Medicine must be made in writing to the Assistant Dean for Student Affairs. Leaves should be discussed with the student’s counselor and the Student Affairs Dean, prior to submitting a formal written request. For further information on requesting a Leave of Absence, please refer to the Policy and Procedures Manual.

POLICY REGARDING EXCUSED ABSENCES
The School of Medicine’s policy for absences from scheduled course/clerkship examinations is as follows:
• If you are ill on the day of a scheduled examination or have an unavoidable emergency and need to defer taking the examination to a later date, you are required to contact the Office of Student Affairs (313-577-1463) to report the nature of your medical emergency and request permission to defer taking the examination to a later date.

For further information on the Excused Absence Policy, please refer to the Policy and Procedures Manual.

ACADEMIC SUCCESS
To help students succeed a series of academic success programs have been developed through the Office of Learning and Teaching. The programs are open to all students, some or all of these programs may be required for students in remediation. Students will be required to attend these sessions in person. For further information on the Academic Success Program, please refer to the Policy and Procedures Manual.

STUDENT EVALUATION OF THE CURRICULUM
Evaluation is considered a course requirement. Students have input into the evaluation of the curriculum through two different processes.

• Wayne State University requires that all students evaluate all faculty using a standard question form. This is both a privilege and a responsibility for you as a WSU student. Students who have not turned in their evaluation for a course will not have their course grade posted. It is recognized that not all students attend all lectures (or have the comparable experience of viewing the streaming video or listening to audiotape of the session). However, all students are required to evaluate each course, and evaluate the appropriate items for all faculty regardless of attendance. For example, students can evaluate the quality of the lecture notes whether or not they listened to, or viewed (in person or through streaming video), the lecturer.

• The School of Medicine provides students a unique opportunity to give constructive feedback to faculty. Students participating in the Medical Education Evaluation Co-curricular program will conduct focus groups. The focus group leaders present a summary of their evaluation and suggested changes to the Course Director and the Assistant Deans for Evaluation and Basic Science Education. This is an opportunity for students and faculty to engage in meaningful dialog.

INJURIES, NEEDLESTICKS AND EXPOSURES TO BODY FLUIDS
During the course of a medical student’s education, he or she will come into contact with occupational hazards as a natural consequence of certain laboratory exercises. Medical students are at particular risk for needlestick injuries and other sharp injuries, since because they are in training they may not be skilled in specific procedures being performed. At all times, if a student is uncomfortable performing an assigned procedure because of the perception that his or her skills are inadequate or that supervision will not be adequate, then that student MUST refrain from doing the procedure and report to the instructor.
It is the obligation of the School of Medicine to formally educate its students regarding the prevention of occupational injuries. In addition, the school has developed programs by which students who are injured or exposed in the course of their training have the knowledge to properly seek care. Such programs are formally presented to students in the first, second and third years of the medical school curriculum.

In the event that a student is injured, stuck with a needle or other sharp instrument, or sustains exposure to a body fluid on mucus membranes or non-intact skin while engaged in coursework the student must report the incident to the instructor immediately. A written report must be completed detailing the circumstances of the exposure. The student should also notify his or her counselor of the reported incident.

A student who sustains an injury or exposure to blood and/or body fluids while participating in medical school coursework must go to the Occupational Health Services Section at UHC-4K if the event of a non-emergency injury and if the injury occurs between 8:00 am and 4:00 pm Monday-Friday. In the event of an emergency or if the injury occurs after hours or on a weekend, the student must go to the DRH emergency room. If medical treatment is required, the students’ medical insurance co-payments or deductibles will be waived for the first treatment. Follow-up medical appointment(s), if necessary, will be the responsibility of the student.

*For further information on the Injuries, needle stick and exposure policy, please refer to the Policy and Procedures Manual.*

**YEAR 1 GENERAL INSTRUCTIONS AND LABORATORY RULES**

During this year, you will be working in a laboratory used by other students who will be working with pathogenic micro-organisms, which are capable of causing infections, and you will be working with serum and blood products that might contain viral agents. For the protection of all individuals working in the laboratory, the following rules must be strictly observed:

1. Always wear a knee length laboratory coat when working in the laboratory. **DO NOT** wear this laboratory coat outside the laboratory.

2. No food or drink should be consumed in the laboratory. **FOOD** should be stored **ONLY** in the refrigerators labeled "**FOOD ONLY**" in the inner lab. Students are responsible for keeping this refrigerator clean.

3. Students must refrain from eating, smoking, or putting anything in their mouths.

4. Before beginning any work in the laboratory, wipe the bench top with a sponge which has been moistened with a disinfectant solution found in the inner lab.

5. At the end of the laboratory period, the sink must be cleared of all debris. Materials must be put away in their proper drawer and waste materials must be disposed of into the appropriate container. All equipment must be removed from the top of the workbench and the area wiped with disinfectant solution.

6. Before leaving the laboratory, during or after an experimental session, students must wash their hands thoroughly with soap and water. Anti-bacterial soap is provided at the large sink in each
inner laboratory.

7. Report anything which might be hazardous to you or your fellow students to your laboratory instructor. Your laboratory instructor should report anything that he/she cannot handle to Conjoint Teaching Services.

8. Report any spilled or broken material that you think may be infectious to your laboratory instructor.

9. In case of any accident report first to your laboratory instructor and then to Conjoint Teaching Services.

10. Always use the equipment and drawers indicated for your use.

11. Laboratory supplies and materials will be clearly indicated for your use. **DO NOT** use any Year 2 materials.

12. Store any materials to be used or observed at a later class period in a drawer in the inner lab or refrigerator, as required.

13. Discards:

   - Discard all disposable materials such as tubes, etc., and any material contaminated with blood or serum in the cans marked "**Microbiological Discards**". These materials will be picked up and sterilized once a week.

   - Slides, Pasteur pipettes, berel pipettes should be placed in the small white containers on the bench top.

   - Large pipettes should be discarded in the white and red pipette jars provided.

   - All syringes and needles must be discarded in the "**SHARPS**" container provided.

   - **NEVER** discard materials used in the laboratory experiments in the **WHITE CANS** labeled "**PAPER ONLY**".

**DRESS CODE**
We do not have a dress code, but we expect you to have an appearance that inspires confidence in you and your school when working with patients and dealing with the public.

**STUDENT SENATE**
The Student Senate is asked to appoint a representative from each class to the Curriculum Committee and the Promotions Committee. It is through these committees as well as through discussions with the individual faculty members, Course Directors, Assistant Deans of Academic and Student Programs, and the Executive Vice Dean, that your perspective can be presented effectively and our program can be improved. Students also play an important role in evaluating each course.
THE VERA P. SHIFFMAN MEDICAL LIBRARY
The Vera P. Shiffman Medical library welcomes WSU School of Medicine students, faculty and staff to its newly renovated permanent location in the Mazurek Medical Education Commons. The hours of service are: 8:00 a.m. – midnight, Monday – Thursday; 8:00 a.m. -8:00 p.m. Friday, noon-8 p.m. Saturday and noon – midnight Sunday. In addition to open reading areas study rooms are available and can be reserved during the library’s service hours. When not in use other Mazurek classrooms are available for study purposes when the library is closed. Your WSU One Card provides you with access to the library and should be presented on entry.

Library services including circulation/reserves and reference are now located on the main floor of Mazurek along with books and journals published after 1980. A collection of books and DVDs for ‘class reserve’ and some of the more popular examination review books are located behind the service desk. While reserve materials are restricted to three hours, books in the circulating collection may be signed out for one month; journals do not circulate. You may find more materials in our library catalog that can be accessed from any location. Our online catalog gives the location of library resources and links to online materials including several thousand electronic journals. The library’s web site at http://www.lib.wayne.edu/shiffman directs students to the online catalog, databases and more. Shiffman also provides One Card operated photocopiers and printers for both desktop and wireless printing.

In addition to wireless access for WSU students, faculty and staff in all areas, the library houses a ten seat computer training lab that is available to students when it is not in use. Off campus access to many library resources including electronic textbooks and examination review materials, MEDLINE, online journals and web resources will require student’s WSU Access ID (ab1234). For more details about computer labs and remote access please see www.lib.wayne.edu/shiffman or send questions or suggestions to askmed@wayne.edu

MEDICAL EDUCATION SUPPORT GROUP
The Medical Education Support Group (room 231 Mazurek Medical Education Commons) offers students support services for BlackBoard and PDA applications.
MAP OF SCOTT HALL

FIRST FLOOR

MAZUREK MEDICAL EDUCATION COMMONS

ACCESS TO BASEMENT

MAZUREK MEDICAL EDUCATION COMMONS

CONFERENCE

MEDIA ROOM

KITCHEN

TV STUDIO

CONF REAM

CONF ROOM

CONF ROOM

CONF ROOM

ACCESS TO BASEMENT

MAIN ENTRANCE

ACCESS TO BASEMENT

BUSINESS OFFICE

OFFICE OF THE DEAN

INFORMATION
Course Overview:
Gross Anatomy (MD1 5000) is a 12-credit course for Yr-1 medical students that teaches the macroscopic anatomy of the human body and introduces the language of medicine. A full-cadaver dissection experience is the centerpiece of the course that encompasses 96-hours of student-faculty interaction. This experience is supplemented by 56-hours of lectures on gross anatomy topics and clinical correlations on radiological anatomy and other medical specialties. There are also ultrasound training sessions embedded into the course and an opportunity for patient interaction in a nerve lesion conference. The course is taught using a regional approach, which is the preferred method of instruction when cadaver dissection is the central teaching & learning tool. This strategy divides the body into regional units: Unit I: Upper Limb & Back; Unit II: Head & Neck; Unit III: Thorax & Abdomen; and Unit IV: Pelvis & Lower Limb (described below). Gross anatomy is different than any other course you will ever take. It is much more than memorizing anatomical terms and facts. Gross anatomy teaches skills in observation, deductive reasoning, perseverance, teamwork, professionalism, empathy, and life-long learning. The course also builds confidence, independence, and leadership. Wayne State medical graduates have a reputation of ‘fearlessness’- being ready to jump into the center of a problem and get a little dirty. This reputation begins with gross anatomy. Welcome to medical school!

Course Goals & Objectives:
The primary course goal is to enable the medical student to acquire knowledge of the normal structure and organization of the human body. This fundamental knowledge provides the basis for understanding normal body functions. A secondary goal is to build a foundation of skills that enable the student to recognize and appreciate normal human variation, as well as to detect abnormal structures that may be related to disease processes.

Learning Objectives Common to all Lectures and Laboratory Dissections

1. Describe the normal anatomy of the region under study.
2. Relate the anatomy of each structure to its basic function(s).
3. Apply knowledge of anatomy to evaluate clinically relevant problems.

Exam questions are mapped to these 3 learning objectives for all lectures. As such, there are no individual learning objectives listed at the beginning of each lecture.
Course Description by Regional Unit:

Unit I: Upper Limb & Back
The student will acquire knowledge of the anatomy and function of the upper limb and back, including the structural contents and anatomical relations of the anterior thoracic wall, axilla, arm, forearm, wrist, hand, and back. The structural components and movements of upper limb joints are covered. The student is specifically instructed on the anatomical basis of the diagnosis of upper limb nerve lesions, and introduced to patients with representative lesions. The laboratory experience allows the acquisition of dissection skills in a relatively uncomplicated region of the body as a basis for complexities encountered in other regions.

Unit II: Head & Neck
The student will acquire knowledge of the anatomy & function of the structures of the neck, face/parotid region, infratemporal fossa, skull, scalp and cranial cavity, pterygopalatine fossa, nasal cavity, pharynx, larynx, eye, orbit, and ear. The student is also expected to achieve familiarity with the distribution and functional components of the cranial nerves, as a basis to gain an understanding of their peripheral distribution as followed in later dissections of other body regions. The distribution and components of the autonomic nervous system of the head and neck are also covered.

Unit III: Thorax & Abdomen
The presentation of these two regions as an integrated unit follows their morphologically natural relationship. The acquisition of an intimate knowledge of the anatomical organization of these regions forms the basis for the later acquisition of skills in physical diagnosis, and is essential to the correct interpretation of current technological biomedical visualizations of these regions. The lymphatic drainage of these regions is presented, and emphasis placed on the distribution of the autonomic nervous system components. A systematic anatomical approach is employed for the lectures and dissections of the thoracic cavity, pleura, lungs, mediastinum, and heart. The student is expected to gain a three-dimensional knowledge of the anterior abdominal wall and inguinal structures, and of the structural features, and anatomical relations of the stomach, small and large intestines, spleen, liver, pancreas, kidneys, and suprarenal glands.

Unit IV: Pelvis & Lower Limb
The integration in the presentation of these regions is necessitated by the vascular and nervous components, which functionally link them. The student is expected to gain a basic knowledge of the interrelation of these regions to facilitate the student's future understanding of the potential postoperative complications involving defecation, urination, parturition, the sexual functions of pelvic organs, and of functional deficits in the biomechanical movements of the lower limbs. The sequence of study and dissections consists of the anatomy of the male and female perineum and external genital organs, pelvic genital organs, urinary bladder, rectum, and anal canal. Special attention is given to the blood supply, innervation, and lymphatic drainage of the region. The format in the presentations of the lower limb is similar to the upper limb. Appropriate emphasis is employed in the study of the lower limb joints, particularly the hip and knee joints, as these represent such frequent deficits in the biomechanics of lower limb movement. The student is expected to acquire knowledge of the anatomical contents and organization of the gluteal region, thigh, popliteal fossa, knee, leg, ankle, and foot.
The specifics of what you will learn in gross anatomy:

1. Correctly use anatomical terminology.
2. Describe the bones and their major components.
3. List attachments, actions, and innervation of the muscles.
4. Describe the formation and distribution of the nerves and nerve plexuses and the role of the nerves in selected reflexes.
5. Describe the spinal cord, spinal nerves, cranial nerves and the coverings of the brain and spinal cord.
6. Describe the formation and distribution of the blood vessels, as well as key anastomoses between vessels.
7. Summarize the flow of lymphatic fluid, including nodes and major vessels, and drainage of organs.
8. Describe the various fossae, spaces, compartments, and transitional zones, including their boundaries and contents.
9. Describe the components of the major joints.
10. Describe the organs and glands including location, surfaces, borders, blood supply, lymph drainage, innervation, and connective tissue coverings.
11. Describe the components and functions of the autonomic nervous system, and their role in selected reflexes.
12. Discuss visceral sensory innervation and referred pain.
13. Identify the components and derivations of fascial layers.
14. Describe the process of respiration.
15. Describe the serous membranes of the body cavities, including mesenteries, membranes, and ligaments.
16. Describe the borders and contents of the body cavities and list which structures are peritoneal.
17. Relate embryological development to adult anatomy for selected structures.
18. Describe the gait cycle, the role of muscles of the lower limb in normal gait, and common gait deviations and their causes.
19. Discuss the relationships of the anatomic structure studied.
20. Predict the effects of damage to nerves or other selected anatomic structures.
21. Describe selected clinical conditions.
22. Apply knowledge of anatomic structures to analyze clinical case scenarios.
Course Structure & Attendance Policy:

1. **Lectures in Gross Anatomy**: Lectures are designed to facilitate the student’s own ability to integrate and learn the complete anatomy of the human body, especially as related to the cadaver dissection experience. All lectures are recorded and made available for streaming on Blackboard. Attendance is optional.

2. **Laboratory Dissection**: A complete cadaver dissection experience is provided under direction of experienced gross anatomy faculty. Clinical relevancy of dissected structures is stressed. Upper-level medical and graduate students may be present to provide teaching assistance. Clinical faculty are present at selected times to relate the anatomy to their specialty areas. Attendance is required! Students must swipe-in and out with the WSU OneCard.

3. **Radiological Anatomy**: Presentations given by radiologists who discuss imaging techniques that reveal anatomical structures. Examples of normal and pathological structures will be shown. Students are not tested on the mechanistic details of the imaging techniques, but are responsible for anatomical structures reviewed during the presentation. All lectures are recorded and available for streaming on Blackboard. Attendance is optional, but highly encouraged. Sessions are most often scheduled prior to a required event.

4. **Other Clinical Correlations**: Presentations given by physicians in a specific medical specialty. Basic anatomy is reviewed as related to selected clinical conditions observed in patients. Students are responsible for all anatomical structures reviewed, and may be tested on selected clinical conditions. All lectures are recorded and available for streaming on Blackboard. Attendance is optional, but highly encouraged. Sessions are most often scheduled prior to a required event.

5. **Ultrasound (US) Training**: Four sessions provide important introductory US training on selected anatomical structures. These hands-on training sessions are conducted by clinical faculty who have developed a successful US curriculum for Yr-I medical students. Attendance is required! Students must swipe-in and out with the WSU OneCard.

6. **Nerve Lesion Conference**: One conference focusing on upper extremity nerve lesions that provides the student with the opportunity to directly interact with patients. The objective is to provide you with an opportunity to apply your recently acquired knowledge of the anatomy of the brachial plexus in diagnosing nerve lesions of the upper limb and to develop skills in interviewing patients. You will take a brief history and examine patients with actual nerve injuries. Start developing your professionalism by being on time, having clean hands and fingernails and a clean lab coat. Be courteous and thank the patient for their time at the end of examination. The patients are volunteers and are taking time to participate in the conference to advance your medical education. Prior to meeting the patients, there will be a lecture on the basic principles of conducting a neurological examination. After the conference, surgeons will provide the correct diagnosis and discuss each case. Further information will be emailed to the class prior to the conference. Attendance is required! Students must swipe-in and out with the WSU OneCard.

7. **Examinations**: There are 4 Unit exams - each contains a Written Exam and a Lab Practical exam. There is also a final NBME exam. Unit exams are not cumulative. The NBME exam is cumulative.
   - **Unit Written Exams**: Each exam contains 50 multiple-choice questions worth 1-pt each. Exams are taken in the Mazurek computer labs and administered by the Office of Assessment and Medical Education Research (Director: Jason Booza, PhD). Each question has ONE best answer. Questions will focus on a single anatomical topic or integrate material across several topics discussed during the unit. Many questions use clinical scenarios. Radiological images, cross sections, or drawings may also be used on these exams. The course pack and dissection guide are the primary sources of the
questions. A small number of questions may be generated from clinical correlations, radiology reviews, and ultrasound sessions, but these will always relate to anatomical structures or concepts stressed in the course pack or dissection guide. Questions test one of the 3 learning objectives defined above.

- **Unit Lab Practical Exams:** Each exam contains 100 multiple-choice questions (0.5-pt each question). Exams are taken in the gross anatomy laboratories. Each question has ONE best answer. Structures will be tagged on cadavers, prosections, radiologic images, cross sections or bones. Students may be asked to identify the tagged structure or answer a thought-type question about the tagged structure. The course pack and dissection guide are the primary sources of the questions. A small number of questions may be generated from clinical correlations, radiology reviews, and ultrasound sessions, but these will always relate to anatomical structures or concepts stressed in the course pack or dissection guide. Questions test one of the 3 learning objectives defined above.

- **NBME Exam:** A national multiple-choice exam that uses clinical case scenarios to test the student’s cumulative knowledge on gross anatomy and embryology. The NBME exam counts for 10% of the final grade in gross anatomy. To view the subject content of the Gross Anatomy & Embryology NBME exam, please visit [http://www.nbme.org/Schools/Subject-Exams/Subjects/basicsci_gross.html](http://www.nbme.org/Schools/Subject-Exams/Subjects/basicsci_gross.html).

8. **Peer Narrative Assessments:** The student’s performance in the gross anatomy laboratory will be evaluated by his/her assigned teammates at the cadaver table via the method of peer narrative assessment. These evaluations are required and will be completed as per instruction provided at a later date. The evaluative score will not factor into the student’s grade percentage, but a below acceptable performance will be identified for remediation and could affect the student’s final outcome.

**Gross Anatomy Facilities:**
Laboratories Rooms 310, 320, 330, 340
Prosection Room 115 Scott (contains refrigeration units for pro-section storage)
Study Room 107 Scott (contains cross section and radiological images)
Classroom 117 Scott (not used for Yr-1 gross anatomy)
Body Bequest Office 525 Scott (mortuary staff who run the gross anatomy facilities)

*All located in the basement (ground floor) of Scott Hall*
**Study Resources:**

1. **Your Cadaver**
   The laboratory dissection portion of the course is the main contributor to student success in gross anatomy. A complete description of the laboratory dissection experience, including the student Code of Conduct, is found in the next section of the course pack.

2. **The Course Pack**
   The course pack contains a complete set of faculty-authored notes on each anatomical topic that students are expected to master for the exams. Topics are explained in lectures that students can attend ‘live’ or ‘stream’ at their option. Information in the course pack is the final authoritative source for the unit exams.

3. **Texts**
   - *Dissection Guide: Required.* One copy kept with cadaver per 3-student side of the team.
   - *Atlas: Required.* One copy kept with cadaver per 3-student side of the team.
   - *Textbook: Recommended.* Used by faculty to develop lectures and notes.

   The Shiffman Medical Library subscribes to **Clinical Key**, which provides electronic access to materials published by Elsevier. Go to [https://library.wayne.edu/shiffman/](https://library.wayne.edu/shiffman/) and click on Clinical Key (under Quick Links). Search the name of the text published by Elsevier.

4. **Blackboard**
   The WSU Blackboard site contains all documents of the course in electronic format, plus other course materials that students find useful:
   - Log-In with university access number and password.
   - Under My Courses click on MD1_Gross Anatomy (c/o 2020)
   - Streaming site: gross anatomy lectures including clinical correlation and radiology lectures listed by title, faculty name, and date of recording.
   - Lecture Notes & Slides: the course pack and the complete series of lecture slides-powerpoint pics shown in lecture & saved as pdf organized in folders by faculty name.
   - Course Resources Folder: skull anatomy, cross sections, radiology images, ultrasound sessions, muscles, temporal bone & ear, prossections, and practice quizzes.
   - Supplemental Resources Folder: contains links to optional resources such as Acland Dissection Videos, Net Anatomy, Anatomy TV, and Radiology at WSU.
   - Discussion Board: There is an open discussion forum for each unit. Students may post questions and answers. Instructors will check the accuracy of the postings and comment where appropriate. Anonymous postings are prohibited.
5. Additional Self-Study Materials
   - Bones (located in the drawer of your cadaver table)
   - Prosections (115 Scott)
   - Cross sections and radiological images (Blackboard and 107 Scott)
   - Shiffman Medical Library- items to check out at circulation desk include:
     a) Skulls & Models
     b) Acland Dissection DVD Atlas of Human Dissection (6 disc set)

Expectations of Professional Behavior

   - *Use common courtesy when attending any required or optional event.* Arrive a few minutes early and become quiet when it is time to start the presentation. The speaker will activate the microphone when ready to start. If you have to leave during the presentation, do so quietly and without disruption. Talking amongst your colleagues or on cell phones is prohibited during the presentation. Cell phones should be turned off or set to airplane mode. Do not check email on electronic devices or have anything open that is not pertinent to the presentation.
   - *All students are required to attend laboratory and participate in the dissection.* Information on the Code of Conduct and laboratory professionalism is found in a subsequent section of the course pack. Students must adhere to all policies of the laboratory.
   - *Unprofessional Behavior:* Fellow students or instructors can bring unprofessional behavior to the attention of the course director and/or to the Office of Medical Education. It is really bad news for student behavior to reach the attention of the SoM Professionalism Committee. A form describing unprofessional behavior may be placed in the student's file and have negative consequences on the career trajectory.

How to Obtain Help

   - *Do you have a question about something in the course pack?* Email specific questions to the faculty member who authored the notes. If no response, email course director.
   - *Do you have too many questions that cannot be solved by email?* Email the faculty member who authored the notes to set up an office visit. If no response, email the course director.
   - *Do you need a tutor?* Students should understand that faculty will only answer specific questions and are prohibited from providing tutorial services. If you need a tutor, email Dr. Matthew Jackson (mpjacks@med.wayne.edu) in the Office of Medical Education.

Other Helpful Events

   - *Noon-Time Reviews:* These are reviews in gross anatomy led by Supplemental Instructional Leaders (Yr-II medical students). Consult the Google calendar for the dates.
   - *Practice Practical Exams:* These are set-up and administered by Supplemental Instructional Leaders (Yr-II medical students) prior to the unit exams. Look for an announcement sent to your email for the times/dates.
   - *Unit Reviews:* One review per unit conducted by the faculty. These are not on the regular schedule. Dates/times will be announced.
<table>
<thead>
<tr>
<th>Faculty</th>
<th>Email</th>
<th>Office</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mihir Bagchi, PhD</td>
<td><a href="mailto:mbagchi@med.wayne.edu">mbagchi@med.wayne.edu</a></td>
<td>8105 Scott Hall</td>
<td>577-1312</td>
</tr>
<tr>
<td>Elizabeth Berger, PhD</td>
<td><a href="mailto:eberger@med.wayne.edu">eberger@med.wayne.edu</a></td>
<td>8263 Scott Hall</td>
<td>577-0286</td>
</tr>
<tr>
<td>Anna Ettinger, PhD</td>
<td>not available</td>
<td>527 Scott Hall</td>
<td>577-1037</td>
</tr>
<tr>
<td>Dennis Goebel, PhD</td>
<td><a href="mailto:dgoebel@med.wayne.edu">dgoebel@med.wayne.edu</a></td>
<td>9345 Scott Hall</td>
<td>577-8724</td>
</tr>
<tr>
<td>Mark Ireland, PhD</td>
<td><a href="mailto:mireland@med.wayne.edu">mireland@med.wayne.edu</a></td>
<td>212 Scott Hall</td>
<td>577-1529</td>
</tr>
<tr>
<td>Harry Maisel, MB ChB</td>
<td><a href="mailto:hmaisel@med.wayne.edu">hmaisel@med.wayne.edu</a></td>
<td>8271 Scott Hall</td>
<td>577-8313</td>
</tr>
<tr>
<td>Jose Rafols, PhD</td>
<td><a href="mailto:jrafols@med.wayne.edu">jrafols@med.wayne.edu</a></td>
<td>8123 Scott Hall</td>
<td>577-1049</td>
</tr>
<tr>
<td>Robert Skoff, PhD</td>
<td><a href="mailto:rskoff@med.wayne.edu">rskoff@med.wayne.edu</a></td>
<td>9327 Scott Hall</td>
<td>577-1165</td>
</tr>
<tr>
<td>Jean Peduzzi-Nelson, PhD</td>
<td><a href="mailto:jpeduzzi@med.wayne.edu">jpeduzzi@med.wayne.edu</a></td>
<td>7133 Scott Hall</td>
<td>577-8995</td>
</tr>
<tr>
<td>Paul Walker, PhD</td>
<td><a href="mailto:pdwalker@med.wayne.edu">pdwalker@med.wayne.edu</a></td>
<td>9352 Scott Hall</td>
<td>577-5678</td>
</tr>
<tr>
<td>Shunbin Xu, MD PhD</td>
<td><a href="mailto:sxu@med.wayne.edu">sxu@med.wayne.edu</a></td>
<td>8137 Scott Hall</td>
<td>577-0127</td>
</tr>
</tbody>
</table>
The Importance of Cadaver Dissection to Your Medical Education

Knowledge of the structure of the human body is fundamental to the practice of scientific medicine. At the conclusion of this course you will have dissected the entire human body and have a basic understanding of its structure. This knowledge, and your ability to build upon its foundation, will determine your future success as a physician. Cadaver dissection is much more than a teaching tool of anatomical facts and concepts. The student’s independent dissection of the cadaver is a discovery process that engages all parts of the student’s brain- not just the parts that help memorize facts or choose correct answers on multiple-choice exams.

It is through dissecting the human body that one comes to understand its structure and 3-dimensional relationships, as well as the diversity of human variation. Dissection provides the opportunity to explore anatomical concepts that are not necessarily described in textbooks or atlases. The human cadaver is often described as the medical student’s ‘first patient’. Structural variations encountered during dissection may point to disease processes or help the student develop a greater appreciation of human individuality. Feelings of humanity are brought to the surface for each student, as well as feelings of empathy and compassion for others.

To feel anxiety and trepidation about cadaver dissection is normal. Confronting and controlling your emotions is the beginning of professional development. In the laboratory you will encounter proof of the reality of disease, aging, and death. Your professional development requires that you come to intellectual and emotional terms with these unpleasant realities. The process of cadaver dissection also helps each student learn to set aside emotions when circumstances require objective and rational thinking. These are important steps in learning how to strike the appropriate balance between clinical objectivity and emotional involvement.

Cadaver dissection also teaches the value of active observation- the habit of looking with an inquiring mind. This skill will serve you well in the examining room. You will gain practice in deductive reasoning. While attempting the identification of an anatomical structure or relationship, you will marshal the facts you know to eliminate possibilities and confirm predictions. Such skills will serve you well in differential diagnosis. You will learn to the language of anatomy, which is fundamental to the language of medicine. You will become able to communicate anatomical knowledge correctly and effectively. You will learn to “toughen up.” Dissection will require you to do some rather unpleasant things and to encounter some messy circumstances. Such experiences will season you for far more unpleasant situations in the hospital. You will learn the habit of having a reason for every statement you make. This will help prepare you for the practice of evidence-based medicine.

You are fortunate to have the opportunity to participate in full cadaver dissection. Resolve to experience it as a great adventure and take pride in the privilege of participating in this time-honored tradition of medical school.

**Code of Conduct:**
The Uniform Anatomical Gift Law of the State of Michigan permits the dissection of the human body. The Body Bequest Program of Wayne State University provides the bodies for your education, prior to their final interment.

The Code of Conduct will apply at all times in the Gross Anatomy Laboratories:

1. Dissection of the human body shall be performed with dignity and respect.
2. Students assigned to a cadaver will be responsible for the proper conduct of the dissection according to the dissection guide and faculty instruction.
3. All identifying information about the cadaver is confidential.
4. Students may not dissect or alter cadavers assigned to other students.
5. Human tissues, including prosections, bones and skeletons, may not be removed from the laboratories.
6. Neither the cadaver nor any part thereof may be photographed or video-recorded by the students.
7. Neither the cadaver nor any parts thereof are to be positioned or displayed in an inappropriate, comical or obscene manner.

**Laboratory Rules:**

1. Students must abide by the “Code of Conduct in Gross Anatomy Laboratory” at all times.
2. No eating or drinking is allowed. There is no smoking allowed anywhere on campus.
3. **NO VISITORS ALLOWED.** Only medical students, faculty, and mortuary staff are permitted in the laboratory. Friends or family members are strictly prohibited from the laboratory.
4. No playing of radios or other electronic devices in the laboratory.
5. All cadaver materials (including prosections) are to be kept moist and wrapped after use.
6. Wear appropriate clothing (including your name tag) and behave professionally at all times.
7. Students must keep the laboratories clean and orderly. Pick up and sweep around your table at the end of each dissection.
Policies on Attendance and Participation:

Attendance in Gross Anatomy Laboratory is Mandatory! You are required to swipe in and out of lab with your OneCard. You must contact a counselor to obtain an excused absence from lab. If irregularities are noted in weekly attendance reports, you will have to see a counselor and could have a Professional Behavior Deficiency Form placed in your file.

Dissection is a Privilege and Participation is Mandatory! Every student is required to dissect and will be evaluated by their peers on how they have contributed to the overall success of the team. Anyone not attending laboratory and/or not dissecting will be called to account and required to explain how their inadequate participation negatively affects their own medical education as well as puts at risk the health and lives of their future patients.

Preparing for the First Day of Dissection:

Reserve a locker by placing a lock on the locker of your choice. Women’s lockers are located in Rooms 118, 331 and 344. Men’s lockers are in Room 114.

Obtain lab supplies: You will need the required Grant’s Dissection Guide, Netter Atlas, disposable gloves, dissecting kit, and a lab coat. Lab apparel is optional: it can be scrubs or regular clothing. Mask and goggles are not necessary but are permissible. Hypo-allergenic gloves can be purchased if you have a latex allergy. Once you change into lab attire, you should remain in the basement – lab attire is not appropriate in any other part of Scott Hall.

Familiarize yourself with the Laboratory: Inspect the gross anatomy laboratory and adjacent areas. Immediately outside the main laboratory entrance, note the Gross Anatomy Bulletin Board. Important course information, updates and policies are posted on the Board as well as electronically on Blackboard or by email to the class listserve. Note that each laboratory has x-ray view boxes, sinks, soap dispensers, paper towel dispensers, and first aid kits. One or more central tables are for display of prosections, special tools, degreasing agents, watering bottles, and sharps disposal containers. All used scalpel blades (sharps) are placed in the sharps containers for disposal. Do not place them in the regular trash. Note the waste containers. Red bins are for trash (e.g. paper towels, gloves) and yellow bins are for tissues from the cadaver (e.g. skin, fat). Do not mix them. Electrical outlets are suspended from the ceiling: use a hook to pull them down - DO NOT stand on chairs or tables to reach them.

Explore the contents of your table: A representative assortment of bones for study will be found in the drawer of your table. Bones may not be removed from the laboratory. One or more skeletons will be available in each laboratory. Each drawer should contain an electric Striker saw, handsaw, bone cutters, chisel, and mallet. There should also be disposable face shields for use at certain times during the dissection process.
**Your Cadaver:**
The age and cause of death of your donor is posted on the door of each laboratory. Always be cognizant of the fact that your cadaver is the body of someone’s loved one: treat the cadaver as you would wish your own body, or that of a member of your family, to be treated. The privilege of dissection is made possible by the generosity of donors and their families. It is their intent that you make full use of the opportunity to learn from their gift. Fulfill their expectations and honor their wishes by dissecting with purpose and respect.

**The Body Bequest Program:**
All bodies utilized in our anatomy program are donated. A brochure providing information on the Body Bequest Program is posted in each laboratory. At the end of the course, each donor’s body is cremated and their ashes placed in a canister. Depending on the wishes of the family, the ashes are returned to the family or interred at the WSU-SOM burial site during the annual Memorial Service.

**Memorial Service for Donors and Families:**
You will have an opportunity to express your gratitude to the donors and their families for their contribution to your medical education at the annual memorial service and interment of ashes. The service takes place in early May and is a fitting close to your first year of medical school. You will receive email notification of the time/date/location of the service.

**The Embalming Process:**
Bodies prepared for dissection are not given the cosmetic treatments typical of those prepared for viewing at funerals. Upon receipt, donor’s body is given an identification number (do not remove the numbered tag). The body is bathed and the head shaved. The right carotid artery is exposed and an injection tube is inserted. The entire body is perfused via the vasculature with embalming fluid. Ten to 15 gallons of fluid is injected under pressure. This results in the body appearing somewhat distended; erectile tissues may fill and the scrotum typically becomes ballooned. A hole is placed in the calvaria to open the superior sagittal sinus to improve perfusion of the brain.

**Health & Safety Concerns:**
There is no extraordinary health risk associated with dissection of embalmed cadavers. Bodies of individuals known to have had serious infectious diseases such as tuberculosis, hepatitis, AIDS, etc. are not accepted. The concentrated embalming fluid used contains formaldehyde and phenol and is toxic to bacteria, viral pathogens and most fungus. In addition, bodies are cured for at least three months prior to use. Should you sustain a laceration or puncture wound in gross laboratory, simply treat it as you would any other cut. Wash out the wound, encourage bleeding, apply antiseptic and a band-aid. If it is more serious, consult an instructor. First Aid kits are on the wall opposite the doors of each laboratory. Formaldehyde levels encountered in the gross anatomy laboratory are below levels deemed by the EPA to pose a health hazard. Levels have been monitored in previous years and are well within acceptable ranges. If you have respiratory problems, special masks are available. See your counselor to arrange a fitting. Some students have reported that wearing soft contact lenses in lab may result in eye irritation. If you are pregnant or think you might be, you should advise the course director and consult your obstetrician. At the time of this writing, there are no known health risks to pregnant women.
or the embryo/fetus from exposure to formaldehyde or other components of embalming fluid at the concentrations encountered during dissection. To be on the safe side, you will still need permission from your physician to continue in the course. After consultation with your physician and Environmental Services, you may opt to wear a mask or other type of respirator. If you have a health condition that you think might be a problem in lab, please contact the course director.

**Emergency:**
In case of emergency, call WSU police at 313-577-2222. For all other non-emergency medical situations, follow directions posted on laboratory doors or inform your laboratory instructors. If needed, there is a telephone adjacent to the basement elevators.

**Care of the Cadavers:**
At the end of each session, water down or wrap the dissection in moist paper towels and replace the skin flaps. Cover with the plastic wrap and zip the body bag completely. The body bag should conceal the entire body; no parts should be visible. You are encouraged to examine and review dissections other than your own. The more examples you see, the better. However, you are to dissect only the body assigned to you and no other. When you have finished reviewing someone else’s dissection, put everything back in place, make certain the dissection is moist and wrap the body properly. Follow the Golden Rule and treat the cadavers of other students as you would want them to treat yours. If there is mold or other problems with preservation, please call it to the attention of Barbara Norgan in Room 525.

**Dissection Assignments:**
Dissections are numbered. Consult the class schedule to determine dissection assignments. Some dissections can be completed within the assigned laboratory session, but many require extra time and effort for a quality end-product. The efficiency of dissection is greatly enhanced by reading the dissection guide assignment and reviewing the atlas in advance. You are expected to KNOW all structures MENTIONED in the dissection guide and to DISSECT all structures appearing in **bold print** unless otherwise indicated by your instructors. It is required that students take turns dissecting. At the end of lab, review together your major findings. Expect to complete the details of the dissection and conduct reviews of the dissection during non-scheduled (open lab) times.

**Laboratory Staffing:**
Each dissection room (310, 320, 330, 340) will be staffed by 2-faculty members that rotate to another room each unit. At various times, labs will also be staffed by 1-2 supplement instructional leaders who also perform noon-time reviews and run the practice practical sessions. At various times, physicians will visit the laboratory to share their knowledge of applied anatomy and clinical experiences.
Open Lab:
The laboratory is open for dissection and review after hours from 5:00 - 10:00 PM weekdays and 9:00 AM - 5:00 PM on weekends. During normal working hours (9:00 AM – 5 PM weekdays), the labs may be open if there are no other scheduled events on the calendar. It is important to note that labs are CLOSED during a 2-day period prior to each unit exam. In order to be admitted to open lab, students must dress appropriately for laboratory dissection and wear their name tags. Students must also have their OneCard ready to show a lab guard in the event that identification is needed. Remember- you are not allowed to dissect a cadaver that you are not assigned. You may review structures on someone else’s cadaver, but make sure you wrap it up properly afterwards. Laboratory guards are on duty in Room 121 to oversee the appropriate use of open laboratory hours. They will document and report unprofessional behavior to the course director. Guards are prohibited from providing gross anatomy instruction to the students. There must be 2 lab guards on duty for open lab, otherwise cancellation will occur without notice and the labs will be locked. Students should email the course director if they cannot gain access to the labs during posted open lab hours.

Your Dissection Team:
Laboratory partners are randomly assigned and students have no input into the assignments. You will be given your table assignment and meet your dissection partners during orientation. Requests for a later change in table assignment are granted only in exceptional circumstances. The delivery of health care depends on team-work and gross anatomy laboratory will provide you with an opportunity to develop these skills. Similar to the clinics, differences in style and approach can be worked out through effective communication. Work as a team by dividing tasks. The non-dissector for the day can conduct reviews and verbal quizzes, read instructions to the dissectors, or look up pictures in the atlas. The gross anatomy laboratory is a time when your entire class is together. Take this opportunity to make friends. Your professional development will be enhanced by sharing experiences with colleagues; they are sources of information, intellectual stimulation and emotional support.

Dissection Skills:
Before taking up your instruments, you should have reviewed the dissection and:
- Have a clear mental picture of the region to be dissected.
- Have specific objectives.
- Be aware of key structures that can be inadvertently lost or damaged.
- As in surgery, don’t cut what you can’t see.

Your primary instruments for dissection will be scalpel, forceps, scissors, probe and fingers. A video will be shown prior to the first laboratory demonstrating basic dissection techniques. Information is also provided in your dissection guide and your instructors can demonstrate methods. Treat scalpel blades with care. Attach and remove blades from the handle as illustrated in the video. Place used blades in the Sharps Container. Always use a sharp blade to obtain a good dissection. Use your scalpel sparingly; once beyond the skin, you can separate most structures by “blunt dissection” with your fingers by working along natural planes of separation. If the space is too small for your fingers, then practice the spreading technique with your scissors: the scissors tip is inserted into a plane of separation and the tips spread to effect separation of tissues. Under no circumstances should you tear tissues, not only does it result in a messy unclear dissection, but it is disrespectful. Similarly, it is disrespectful to stick
scalpels or probes in the donor’s body in a pin-cushion fashion. Other tools used in dissection include mallets, chisels, saws and bone cutters. These will be found in the drawer of your table. Striker saws (electric autopsy saws) will be issued for removal of calvaria and other special procedures.

**Radiological Anatomy:**
Radiological Anatomy is incorporated into this course to familiarize you with the common radiological modalities encountered in the clinics (x-rays, MRI, CT, etc.), to learn to relate anatomical knowledge gained by dissection to the interpretation of radiological images, and to introduce images as a tool to study anatomical relationships. There are radiological anatomy clinical correlations in all units. Sessions meet in Jaffar Auditorium as posted in your class schedule. Additional images are included in Blackboard and in Room 107. You are expected to know all the structures indicated and identification keys are included. You will see these and similar images on both written and practical examinations. Written and practical examinations may include questions regarding structures not included in the identification keys.

**Skull & Ear Self-Study:**
The objective of these interactive self-study materials is to review the anatomy of the skull and ear. Both skull and ear images can be accessed through Blackboard. This information may be tested in both written and practical examinations.

**Faculty:**
Faculty members are present during regular laboratory hours to instruct, advise and demonstrate, but not to do the dissection for you. The names of your instructors for the unit will be posted on the door of each laboratory. Faculty members are not present during open lab. It is permissible to go to a table where an instructor is holding forth, but excessive shadowing of faculty is discouraged because it can interfere with instruction. Gross Anatomy Faculty teaching in the entire course include: Drs. Bagchi, Ettinger, Goebel, Ireland, Maisel, Peduzzi-Nelson, and Walker. This core faculty is augmented by additional staff teaching in 2 units: Drs. Berger, Skoff and Xu. Instructors are available during regular laboratory hours to answer your questions and to provide information and advice concerning your dissection. If you require additional assistance, e-mail an instructor with your question, make an appointment to see an instructor, or consult with Dr. Jackson or the Year I Counselor for availability of tutors.

**Practical Examinations:**
The logistics of the practical examinations will be explained prior to the first examination. Practical examination questions are generally either “identification” or “thought” in format. For identification questions, you are required to select the correct name of the tagged structure; in thought questions you are required to answer a question about the tagged structure. All questions are in single answer multiple-choice format. You have approximately 60 seconds in which to examine the tagged structure. Tags may be attached to dissected structures on cadavers, bones, prosections, radiographic images, cross section images, anatomical models or other appropriate examples. Unless indicated otherwise, the structure to be identified is at the end of an arrow or a string attached to a numbered hemostat. Only normal, representative examples are used for questions. **SPECIMENS MAY NOT BE TOUCHED.** Specimens are never purposely placed in unusual positions; however, it is sometimes necessary in order to
provide the best view. Always check the orientation of the specimen before answering the question. If you have a question regarding a tag, call the nearest instructor. However be aware that you are not allowed to ask interpretative questions.

Prior to entering the laboratory you will be given an examination answer sheet. Place your name and ID number where indicated. Upon entering the lab, you will be given a copy of the examination; print your name in the upper right hand corner of the first page. You may make notes, diagrams, etc. on the exam but it must be returned at the end of the examination. Only answers entered on the answer sheet will be counted.

Upon entering the laboratory go to the question number indicated on your answer sheet. If “RS” appears go to any vacant rest stop (a chair labeled “Rest Stop”). Await instructions. A series of tones will indicate when to move to the next position (question or rest stop). You are not allowed to return to a question. Use your time at each rest stop to read questions in advance, or attempt to determine the best answers to previously unanswered questions.

It is your responsibility to bring two or more sharpened No. 2 pencils, and an opaque clip board. A lab coat and rubber gloves are suggested. Since it is often cold in the labs, you should wear warm clothing. Wear comfortable shoes and visit the rest room prior to the examination. Books and notes are not allowed. Talking or communicating with other students is not allowed. Bathroom breaks are permitted only in cases of extreme urgency; time lost out of lab will cost you points.

Announcements and instructions will be provided before the examination. The course pack and dissection guide will be used as the ultimate sources of information in adjudication of disputes regarding acceptable answers on practical examinations.
**Course Materials and Study Aids:**
Study aids are located in the laboratory, Room 107, or the Shiffman Library (Mazurek Commons).

- **Laboratory**
  - Cadavers
  - Prosections
  - Bones
  - Models
  - Radiographic Images

- **Blackboard**
  - Course notes
  - Powerpoint presentations (pdf)
  - Streaming videos of lectures
  - Anatomy cross sections and keys
  - Radiologic images and keys
  - Ultrasound training sessions
  - Practice exam questions
  - Netter muscle charts
  - Skull and Ear presentations
  - Acland Dissection Videostream
  - Anatomy TV
  - Net Anatomy

- **Room 107**
  - Cross sections and keys (hard copy version)
  - Radiologic images and keys (hard copy version)
  - Various reference books and atlases (old editions)

- **Shiffman Library**
  - Skulls
  - Models
  - Acland’s DVD Atlas of Human Anatomy (6 disc set)

- **Apps**
  - Essential Anatomy (from the App Store)
  - Pocket Body (from the App Store)
  - Visible Body (from the App Store)
**Study Skills:**
In order to assimilate a large volume of knowledge in a short period of time you must PREVIEW & REVIEW laboratory assignments and course pack information. To complete dissections efficiently and on time you must come to laboratory prepared: you must have read over the dissection and studied the atlas in advance. You must have a good idea of what structures you are looking for and where to find them. Learning styles differ: organize information to facilitate recall. Techniques found useful are:
  - Preparing flash cards
  - Making simple sketches
  - Making outlines/tables
  - Drawing diagrams (e.g. arteries)
  - Making a list of all structures to be dissected
  - Using mnemonics
  - Peer-to-peer teaching

**Summer Prosectorships:**
The prosections you will study were prepared by Year II students selected to participate in the Summer Prosector Program. Prosectors prepare anatomical specimens, set up the gross anatomy laboratories for the incoming class, and prepare instructional materials. Funding comes from the Financial Aid Office; therefore applicants must qualify for the College Work Study Program. Information on the program will be made available during Unit 4. Prosectors may also elect to be gross anatomy lab guards and return as Teaching Assistants in the labs.

**First Patient Project (FPP):**
This self-directed, life-long learning project is required and will be discussed as part of a separate course. However, your participation in the FPP begins in the gross anatomy laboratory. Please visit the FPP site on Blackboard to learn more. Gross anatomy faculty will provide some guidance, but you are expected to progress through the FPP independently and as an active member of your dissection team.
SCHOOL OF MEDICINE
Year 1 - TEXTBOOKS
2016-2017

II. HISTOLOGY/CELL BIOLOGY

Required/Highly recommended textbook:


Recommended atlases (an atlas of some kind is highly recommended):

   Available as E-Book free online on “Clinical Key-Elsevier” through Shiffman Library: https://www.clinicalkey.com/#/browse/book/3-s2.0-C20090600258

   NOTE: Sold as separate 3-hole-punched sheets that can be organized and placed in a binder.

Useful (alternative books and atlases):

   Available as E-Book free online on “Clinical Key-Elsevier” through Shiffman Library: https://www.clinicalkey.com/#/browse/book/3-s2.0-C20130002782


Note: The publishers have textbook websites. If you have purchased any of the above books, you can access online features through the publisher. These include an e-book version and other features. See the flyleaf of each book for details.

“The Point”- Lippincott Williams & Wilkins textbook website: http://www.thepoint.lww.com
“Student Consult” - Elsevier textbook website: https://studentconsult.inkling.com/
III. EMBRYOLOGY

Required:


Recommended or useful alternative textbooks:


Or available as E-Book free online on “ebrary” through Shiffman Library: http://site.ebrary.com/lib/wayne/docDetail.action?docID=10648607
Discipline: Histology/Cell Biology
Course Director: Rodney Braun, Ph.D.

Course Goals:
The first goal of the Year 1 Histology/Cell Biology Course is to engage the medical student in learning the key concepts related to recognizing the normal appearance of human cells, tissues, and organs, as well as relating the structure and histological organization of the cells, tissues, and organs to their functional role in the human body. The systematic application of this knowledge will be applied to pathological examples in Year 2. The second goal is to begin to develop professional behavior in the medical student by having the student effectively and professionally interact as a member of a team of their peers.

Course Objectives:
Overall Course Objectives: At the end of the Histology/Cell Biology Course, the students will be able to:
- Describe the microanatomy (morphology) of cells, tissues, and organs of the human body at the light microscopic level.
- Describe significant fine structural features of cells or tissues as viewed with transmission electron microscopy, scanning electron microscopy, freeze-fracture electron microscopy, immunocytochemistry, or other selected research techniques.
- Correlate the specialized or unique histological structural features at the light and electron microscopic levels with their normal function in the human body.
- Demonstrate accountability to their peers by working as a reliable and valuable member of the laboratory team in a professional manner.

Specific Course Objectives: At the end of the Histology/Cell Biology Course, the students will be able to:
1. Describe the morphology and function of cellular organelles and their components.
2. Describe the morphology and function of the components of epithelial tissue and glands.
3. Describe the morphology and function of connective tissue proper and cartilage.
4. Describe the morphological organization and formation of bone.
5. Describe the morphology and function of blood components.
6. Describe the morphology and function of hemopoietic cells and the components of bone marrow.
7. Describe the morphology and function of the components of nervous tissue.
8. Distinguish among the types of muscle and describe the morphology and function of the components of muscle tissue.
9. Describe the morphology and function of blood vessels (vascular system).
10. Describe the morphology and function of the components of the integument.
11. Describe the morphology and function of the components of the oral cavity.
12. Describe the morphology and function of endocrine glands.
13. Describe the morphology and function of the components of the eye.
14. Describe the morphology and function of the components of the inner ear.
15. Describe the morphology and function of the components of the lymphatic system.
16. Describe the morphology and function of the components of the respiratory system.
17. Describe the morphology and function of the components of the heart.
18. Describe the morphology and function of the components of the upper alimentary canal: the esophagus and stomach.
19. Describe the morphology and function of the components of the lower alimentary canal: the intestines and anal canal.
20. Describe the morphology and function of the organs associated with the digestive system: the liver, gallbladder, and pancreas.
21. Describe the morphology and function of the components of the urinary system.
22. Describe the morphology and function of the components of the male reproductive system.
23. Describe the morphology and function of the components of the female reproductive system.
24. Demonstrate teamwork and proper professional behavior as part of a laboratory team.

NOTE: For the purposes of the Histology & Cell Biology course, the word “describe” includes the ability to recognize cells, tissues, and organs in histological sections at the light and electron microscopic levels.

Detailed Learning Objectives: will accompany each lecture.

Course Structure:
The course is organized into 4 units. Unit 1 is Histology only, while Units 2, 3, and 4 contain a mixture of Histology and Embryology (see Embryology course pack). Topics are coordinated as much as possible with Gross Anatomy. Material will be presented in lecture and laboratory format to highlight the normal structural and functional relationships in specific cells, tissues, and organs. Laboratory sessions will be interactive virtual microscopy labs, in which students work independently in small groups with faculty assistance. The interactive labs will foster teamwork and student-to-student interactions. Faculty will assess the laboratory performance of each individual student and will provide written narrative feedback at the end of the course. Scientific knowledge will be assessed using text-based and image-based multiple-choice examinations.

Key Personnel/Contact Information:

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>OFFICE</th>
<th>PHONE</th>
<th>E-MAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bruce A. Berkowitz*</td>
<td>7327 Scott Hall</td>
<td>577-9035</td>
<td><a href="mailto:baberko@med.wayne.edu">baberko@med.wayne.edu</a></td>
</tr>
<tr>
<td>Rodney D. Braun</td>
<td>7105 Scott Hall</td>
<td>577-4764</td>
<td><a href="mailto:rbraun@med.wayne.edu">rbraun@med.wayne.edu</a></td>
</tr>
<tr>
<td>A. Genene Holt</td>
<td>454 Lande Building</td>
<td>577-5073</td>
<td><a href="mailto:agholt@med.wayne.edu">agholt@med.wayne.edu</a></td>
</tr>
<tr>
<td>Ashok Kumar*</td>
<td>Kresge Eye Institute, K-416</td>
<td>577-6213</td>
<td><a href="mailto:akuma@med.wayne.edu">akuma@med.wayne.edu</a></td>
</tr>
<tr>
<td>Kwaku Nantwi</td>
<td>8326 Scott Hall</td>
<td>577-7925</td>
<td><a href="mailto:knantwi@med.wayne.edu">knantwi@med.wayne.edu</a></td>
</tr>
<tr>
<td>P. Lalit Singh</td>
<td>8332 Scott Hall</td>
<td>577-5032</td>
<td><a href="mailto:plsingh@med.wayne.edu">plsingh@med.wayne.edu</a></td>
</tr>
<tr>
<td>Ryan Thummel</td>
<td>8327 Scott Hall</td>
<td>577-1061</td>
<td><a href="mailto:rthummel@med.wayne.edu">rthummel@med.wayne.edu</a></td>
</tr>
</tbody>
</table>

*Lab instructor only
Discipline: Embryology
Course Director: Rodney Braun, Ph.D.

Course Goal:
The overall goal of the Year 1 Embryology Course is to engage the medical student in learning the key concepts related to the development of human cells, tissues, and organs.

Course Objectives:
Overall Course Objectives: At the end of the Embryology Course, the students will:

- Demonstrate knowledge of the sequence of development of the human body from fertilization through the establishment of the major organ systems and continuing through birth to adulthood.
- Demonstrate understanding of the contribution of various germ layers and precursors to definitive structures, including the role of cell interactions, induction, growth, and differentiation.
- Demonstrate the ability to correlate developmental events with the structural organization of the human body as observed in the study of gross anatomy and histology.
- Describe the origin of commonly occurring malformations in terms of abnormal developmental processes.

Specific Course Objectives: At the end of the Embryology Course, the students will be able to:
1. Define basic terms in embryology and describe the stages of embryological development.
2. Describe the process of fertilization.
3. Describe the bilaminar embryo and the embryological changes that occur during week 2 of development.
4. Describe the trilaminar embryo and the embryological changes that occur during week 3 of development.
5. Describe neurulation and embryo folding and the embryological changes that occur during weeks 4-8 of development.
6. Describe the process of placentation.
7. Describe the development of the pharyngeal apparatus and face.
8. Describe the development of the skeletal system.
9. Describe the development of the eye, ear, and the olfactory mucosa.
10. Describe the development of the respiratory system and the formation of the body cavities.
11. Describe the development of the cardiovascular system.
12. Describe the development of the gastrointestinal system.
13. Describe the development of the urogenital system.

Detailed Learning Objectives: will accompany each lecture.
Format of Class:
The Medical Embryology course is organized into 3 units and is taught simultaneously with Units 2, 3, and 4 of Medical Histology. Unit 1 is Histology only, while Units 2, 3, and 4 contain a mixture of Histology and Embryology (see Histology course pack). Embryology starts in Unit II (August 29, 2016). Material will be presented in lecture format with various clinical examples and presentations to highlight the normal cell, tissue, and organ development. Knowledge will be assessed using verbal multiple-choice examinations.

Participating Faculty Contact Information:

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>Department</th>
<th>Telephone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.R. Armant</td>
<td>Obstetrics/Gynecology</td>
<td>577-1748</td>
<td><a href="mailto:darmant@med.wayne.edu">darmant@med.wayne.edu</a></td>
</tr>
<tr>
<td>B.A. Berkowitz</td>
<td>Anatomy &amp; Cell Biology</td>
<td>577-9035</td>
<td><a href="mailto:baberko@med.wayne.edu">baberko@med.wayne.edu</a></td>
</tr>
<tr>
<td>R.D. Braun</td>
<td>Anatomy &amp; Cell Biology</td>
<td>577-4764</td>
<td><a href="mailto:rbraun@med.wayne.edu">rbraun@med.wayne.edu</a></td>
</tr>
<tr>
<td>D.J. Goebel</td>
<td>Anatomy &amp; Cell Biology</td>
<td>577-8724</td>
<td><a href="mailto:dgoebel@med.wayne.edu">dgoebel@med.wayne.edu</a></td>
</tr>
<tr>
<td>R. Thummel</td>
<td>Anatomy &amp; Cell Biology</td>
<td>577-1061</td>
<td><a href="mailto:rthummel@med.wayne.edu">rthummel@med.wayne.edu</a></td>
</tr>
</tbody>
</table>
Discipline: Physiology
Course Director: Robert Lasley, Ph.D.
Laboratory Director: Patrick Mueller, Ph.D.

Course Overview:
Physiology is a study of normal cellular, tissue and organ function, multiple aspects of which require core knowledge of biochemistry and anatomy. All of the knowledge presented in the physiology curriculum is of fundamental importance to your understanding and dealings with human disease. Your comprehension of physiology will play an important role in your ability to understand and recognize pathophysiology.

Course Objectives:
At the end of this course, students are expected to:

1. Describe the basic mechanisms that regulate water exchange between intracellular and extracellular fluid compartments.
2. Explain how the processes of ion movements across cell membranes generate membrane potentials and action potentials.
3. Describe excitation-contraction coupling in skeletal, cardiac, and smooth muscle.
4. Explain the mechanisms of normal functions of the heart, lung, kidney, digestive, and reproductive systems, and their regulation by the endocrine system.
5. Demonstrate the ability to interpret physiological data to distinguish between normal and abnormal organ function.
6. Apply knowledge of fundamental mechanisms of organ function to the understanding of disease processes and to the selection of therapies.

Course Structure:
Material in the course is presented in 1) lecture format, 2) laboratories, and 3) problem based learning (PBL) sessions. Attendance for both the laboratories and PBL sessions is mandatory.

Laboratories:
There are three laboratories in the course - ECG and cardiovascular labs in Unit 1; a pulmonary lab in Unit 2. Each lab, which is scheduled for 2.5 hours, will meet in the 2nd floor medical student laboratories, with half of the class assigned to a morning session; half to an afternoon session. During each session students will first collect and analyze physiological data on a student volunteer in each group. Students will then work through a patient case study related to the topics covered in that lab (and related lectures). One question related to each laboratory will be on the respective Unit exams.

Students will be assigned to a specific room and will be organized in the same groups of 6 used in the First Patient Course. Laboratories will be staffed by faculty and student facilitators, who have been trained in the use of the software and hardware. Facilitators will assist you with problems you may encounter, but they will not be setting up the labs for you. Facilitators are also not necessarily experts in the subject content of the labs.

Students are expected to prepare for the labs by staying current with the lectures and coursepack. Students are encouraged to preview each laboratory to familiarize themselves with the equipment, the software and the exercises to be performed. In order to preview the lab, you will need to establish an
on-line account with the program that will be used for data collection and analysis in the labs. More detailed information for accessing the labs online will be provided in the course syllabus.

**Problem Based Learning (PBL):**
Three PBL sessions will be held during the final week (M, W, F) of Unit 3 with each session lasting ~ 2 hours. Eight-nine students will be assigned to each group, and each group will be assigned to a specific room with a specific facilitator. In the first session students will be provided with two short cases after which the group will work together to define learning objectives for each case. In the second session the research findings for the first case will be shared by the group; the second case will be discussed in the third session. The facilitator will be there to keep students on topic with their discussions and prompt you if a learning objective is not being identified. Facilitators are not expected to be experts in the PBL subject matter. At the conclusion of each case discussion, students will be provided with the specific learning objectives that the case studies were meant to address. At least one question from each case study will be on the Unit 3 exam.

**Student Assessments:**
Students will be evaluated by both multiple choice examinations and narrative assessments. The course is divided into 3 Units, each of which concludes with an exam. At the conclusion of Unit 3, students will also take the Physiology NBME comprehensive exam. The final course grade will be determined by the scores on the three exams; the comprehensive exam will constitute 10% of the final grade. The minimum guaranteed pass rate is 70% accuracy on the three combined Unit exams + the NBME exam.

During the lab sessions students will be narratively assessed for competency in the following domains: 1) preparation, 2) participation 3) knowledge, 4) quality of work, 5) professionalism (with members of team), 6) professionalism (professional behavior, demeanor, and work ethic), 6) self-directed/lifelong learning

Students will receive formative assessment after the first lab, and summative assessment following the Pulmonary Lab in January. Arriving on time and working efficiently based on having previewed the lab constitute primary aspects of “preparation.” Students who repeatedly score < 3 (on a scale of 1-5, with 5 being the best) on multiple domains will be required to complete a remediation assignment designed by the Course Director. Students who fail to complete the remediation assignment by the required date will receive an incomplete for the course. Incompletes are reported to the Promotions Committee for academic decision.
### Participating Faculty Contact Information:

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Office</th>
<th>Telephone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steven Cala</td>
<td>4235 Scott Hall</td>
<td>577-8734</td>
<td><a href="mailto:scala@med.wayne.edu">scala@med.wayne.edu</a></td>
</tr>
<tr>
<td>Stephen DiCarlo</td>
<td>6213 Scott Hall</td>
<td>577-1557</td>
<td><a href="mailto:sdicarlo@med.wayne.edu">sdicarlo@med.wayne.edu</a></td>
</tr>
<tr>
<td>Sascha Drewlo</td>
<td>C.S. Mott Center</td>
<td>577-1158</td>
<td><a href="mailto:sdrewlo@med.wayne.edu">sdrewlo@med.wayne.edu</a></td>
</tr>
<tr>
<td>Nardhy Gomez-Lopez</td>
<td>4620 C.S. Mott Center</td>
<td>577-8904</td>
<td><a href="mailto:ngomezlo@med.wayne.edu">ngomezlo@med.wayne.edu</a></td>
</tr>
<tr>
<td>Bhanu Jena</td>
<td>5245 Scott Hall</td>
<td>577-1532</td>
<td><a href="mailto:bjena@med.wayne.edu">bjena@med.wayne.edu</a></td>
</tr>
<tr>
<td>Robert Lasley</td>
<td>8239 Scott Hall</td>
<td>577-9444</td>
<td><a href="mailto:rlasley@med.wayne.edu">rlasley@med.wayne.edu</a></td>
</tr>
<tr>
<td>Todd Leff</td>
<td>111 Lande Bldg.</td>
<td>577-3006</td>
<td><a href="mailto:tleff@med.wayne.edu">tleff@med.wayne.edu</a></td>
</tr>
<tr>
<td>Jason Mateika</td>
<td>VA-B4332</td>
<td>576-4481</td>
<td><a href="mailto:jmateika@med.wayne.edu">jmateika@med.wayne.edu</a></td>
</tr>
<tr>
<td>Donal O'Leary</td>
<td>2241 Elliman Bldg.</td>
<td>577-9074</td>
<td><a href="mailto:doleyary@med.wayne.edu">doleyary@med.wayne.edu</a></td>
</tr>
<tr>
<td>Jeyasuria Pancharatnam</td>
<td>338 C.S. Mott Center</td>
<td>577-2153</td>
<td><a href="mailto:suria@med.wayne.edu">suria@med.wayne.edu</a></td>
</tr>
<tr>
<td>Jeffrey Ram</td>
<td>6112 Scott Hall</td>
<td>577-1558</td>
<td><a href="mailto:jeffram@med.wayne.edu">jeffram@med.wayne.edu</a></td>
</tr>
<tr>
<td>Noreen Rossi</td>
<td>908 Harper Hosp. Bldg.</td>
<td>745-7145</td>
<td><a href="mailto:nrossi@med.wayne.edu">nrossi@med.wayne.edu</a></td>
</tr>
<tr>
<td>Douglas Yingst</td>
<td>5253 Scott Hall</td>
<td>577-1548</td>
<td><a href="mailto:dyingst@med.wayne.edu">dyingst@med.wayne.edu</a></td>
</tr>
</tbody>
</table>
Discipline: Biochemistry and Molecular Biology
Course Director: Sharon Ackerman, Ph.D.

The two principal objectives of this course are to provide every student with a solid background in basic, medically relevant biochemistry, in preparation for his/her future medical training and the best possible preparation for the USMLE Step 1 Examination. The latter is based on the curriculum outline shown below.

Structure and function of proteins
- principles of protein structure and folding
- enzymes: kinetics, reaction mechanisms
- structural and regulatory proteins: ligand binding, self-assembly regulatory properties

Energy metabolism (metabolic sequences and regulation) and disorders
- generation of energy from carbohydrates, fatty acids, and essential amino acids; glycolysis, pentose phosphate pathway, tricarboxylic acid cycle, ketogenesis, electron transport and oxidative phosphorylation, glycogenolysis
- storage of energy: gluconeogenesis, glycogenesis, fatty acid and triglyceride synthesis
- thermodynamics: free energy, chemical equilibria and group transfer potential, energetics of ATP and other high-energy compounds

Metabolic pathways of small molecules and associated diseases
- biosynthesis and degradation of amino acids (eg, homocystinuria) biosynthesis and degradation of purine and pyrimidine nucleotides (eg, gout, Lesch-Nyhan syndrome).
- biosynthesis and degradation of lipids (eg, dyslipidemias, carnitine deficiency, adrenogenital syndromes) biosynthesis and degradation of porphyrins.
- biosynthesis and degradation of other macromolecules and associated abnormalities, complex carbohydrates (eg, lysosomal storage disease), glycoproteins, and proteoglycans.

Gene expression: DNA structure, replication, and exchange
- DNA structure: single- and double-stranded DNA, stabilizing forces, supercoiling analysis of DNA: sequencing, restriction analysis, PCR amplification, hybridization
- DNA replication, mutation, repair, degradation, and inactivation
- gene structure and organization; chromosomes; centromere, telomere recombination, insertion sequences, transposons

Gene expression: transcription (including defects)
- transcription of DNA into RNA, enzymatic reactions, RNA, RNA degradation
- regulation: cis-regulatory elements, transcription factors, enhancers, promoters, silencers, repressors, splicing.

Gene expression: translation (including defects)
- the genetic code
- structure and function of tRNA
- structure and function of ribosomes
- protein synthesis
- regulation of translation
- post-translational modifications (phosphorylation, addition of CHO units)
- protein degradation
Physiological biochemistry (including defects)
- Glucose homeostasis and Diabetes
- pH, water, and electrolyte regulation.
- Heme metabolism
- Cell cycle and cancer
- Aging
- Protein folding disorders
- HIV/AIDS

Examinations:
Each of the three units of the BMB course will have a 2hr examination, with the number of questions determined according to the following formula: 3 questions per lecture

The retake examination will consist of questions selected evenly from the examinations for each of the three units of the BMB course.

Participating Faculty Contact Information:

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Office</th>
<th>Telephone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharon Ackerman</td>
<td>4213 Scott Hall</td>
<td>577-6845</td>
<td><a href="mailto:Sackerm@Med.Wayne.Edu">Sackerm@Med.Wayne.Edu</a></td>
</tr>
<tr>
<td>Ladislau Kovari</td>
<td>4263 Scott Hall</td>
<td>577-0296</td>
<td><a href="mailto:Kovari@Med.Wayne.Edu">Kovari@Med.Wayne.Edu</a></td>
</tr>
<tr>
<td>Domenico Gatti</td>
<td>5300 Scott Hall</td>
<td>577-0620</td>
<td><a href="mailto:Dgatti@Med.Wayne.Edu">Dgatti@Med.Wayne.Edu</a></td>
</tr>
</tbody>
</table>
Discipline: Clinical Nutrition
Course Directors: Tonia Reinhard, M.S., R.D. and Mary Width, M.S., R.D.

Course Objectives:
At the end of the Clinical Nutrition course, students will:
- Know terminology commonly used in clinical nutrition.
- Understand how the nutrients in food are made available to the body through digestion, absorption and metabolism.
- Identify the specific functions for each of the nutrients, and apply the functional role of each nutrient to diseases involving both inadequate and excessive nutrient intake.
- Know the techniques and methods used in nutritional assessment.
- Be familiar with nutrition throughout the lifespan.
- Understand the role of nutrition in the prevention and management of chronic diseases.
- Understand methods of nutrition support, including enteral and parenteral nutrition.

Material will be presented in lecture format and in patient panels that includes topics of clinical interest. To judge course competency, students must pass a written examination with a minimum score of 75%.

Participating Faculty Contact Information:

<table>
<thead>
<tr>
<th>Participants</th>
<th>Office</th>
<th>Telephone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonia Reinhard</td>
<td>3009 Science Hall</td>
<td>577-2963</td>
<td><a href="mailto:Tonia.Reinhard@Wayne.Edu">Tonia.Reinhard@Wayne.Edu</a></td>
</tr>
<tr>
<td>Mary Width</td>
<td>3009 Science Hall</td>
<td>577-4370</td>
<td><a href="mailto:Marywidth@Wayne.Edu">Marywidth@Wayne.Edu</a></td>
</tr>
</tbody>
</table>
Discipline: Neuroscience
Course Director: Jean Peduzzi-Nelson, Ph.D.

Course Overview:
The Neuroscience course provides a series of lectures and laboratories on the anatomical, physiological, biochemical and behavioral foundations of Neuroscience upon which the student will build clinical knowledge and skills in Pathology, Neurology and Psychiatry in subsequent years. There are two main objectives in the course: First that the student comprehends the neurobiology of nervous tissue, and secondly understands the organization of the major centers and nerve pathways in the human central nervous system.

The Neuroscience course is divided into four subject areas: 1) morphological/functional correlates of neuronal activity, 2) sensory systems, 3) motor and sensorimotor integrating systems and 4) forebrain systems. For each area, the student is expected to correlate specific neuroanatomical, neurophysiological and biochemical parameters in order to understand how a given system operates and how that system integrates with the rest of the nervous system. To accomplish this goal, it is necessary for the student to become proficient with certain concepts while mastering the details supported by those concepts. The first subject area includes the anatomical, functional and biochemical organization of the neuron. Using the single neuron as a model, the student relates basic anatomical and functional properties to more complex neural circuits concerned with sensory and motor processing. In the former case, the student determines how systems of related neurons maintain a constant flow of externally and internally derived information to higher brain centers. For the motor systems, the student correlates the various supraspinal motor centers with specific somatic and visceral motor activity and sensory processing. The final subject heading, the forebrain system, introduces the student to areas of the brain dealing with mentation and instinctual behavior. The student is expected to know what types of intellectual and behavioral activities are most common in the normal individual and what types of neural integration can most likely explain these functions.

Clinical material has been included in the course. This is accomplished by a series of lectures by invited clinical faculty, their lectures serving as an introduction to clinical Neurology and Neurosurgery, as well as to highlight some of the clinical aspects of Neuroscience. Patient panel are also added to give the student a first-hand perspective of the effects of spinal cord injury or movement disorders in the patient population.

Course Objectives:
At the end of the Neuroscience course the student will:

Demonstrate fundamental knowledge of the structure, function and chemical organization of neurons and supporting cells in the central nervous system.
Understand the tridimensional organization of centers and nerve pathways that bear significant clinical relevance.
Understand the anatomical relationships between nerve centers and pathways at different brain levels, which will be useful to identify clinical central nervous systems disorders.
Demonstrate ability to correlate anatomical features from histological preparations and computerized images (MRIs, CT-scans).

Competency:
Students demonstrate competency by their performance in two (Neuro I and II) exams which are equally weighted in determining their final grade. Each exam consists of 100 MC/SA questions where both lecture and image-based laboratory components are represented. However whereas 20% (straight identification) of the questions in Neuro I come from the Lab portion of the course, 30% (problem solving) lab questions are included in Neuro II. Students are also tested on context of clinical correlation material presented in lecture.

**Neuroscience Laboratory:**
The laboratory component of the course comprises eleven laboratory exercises which are conducted in the Mazurek Education Commons (MEC) Labs. MEC (double) Labs are manned by seven faculty (Drs. Rafols, Goebel, Goshgarian, Ichinose, Pan, Peduzzi and Walker), with an approximate ratio of 50 students per instructor. While the context of each lab is primarily designed around the CNS functional circuits presented in lecture, the subject matter presented is broad and includes presentation of images (both histologic and MRIs) pertinent to the circuits, discussion of anatomically focal lesions and neurologic signs/symptoms derived from the same lesions. Discussion and student participation in the labs are encouraged. A Laboratory Manual (designed by Drs. Peduzzi and Rafols) with descriptive text and image sequence ensures uniformity of instruction delivered by instructors in the labs. **Attendance to the laboratories is required.**

**Laboratory Objectives & Guidelines:**
Each of the eleven laboratory exercises is self-contained in that its context can be learned independently from the others. With the exception of the first (Lab 1, “Blood Supply, Ventrices/CSF, and Topography of the Spinal Cord and Brainstem”), each exercise focuses on descriptive anatomical relationships of CNS centers and pathways underlying well-established functional circuits (e.g., somatosensory, auditory, vestibular, visual, etc.). This focus has dual objectives: 1) to reinforce didactic material previously presented in lecture, and 2) gain a tridimensional understanding on the organization of CNS centers and pathways in relation to images of presented cross-sectional levels. In register with the second objective is the presentation of forty-six anatomically-restricted (i.e., focal) lesions that recapitulate the structure/function of CNS structures. While contrived, such lesions often mimic real clinical experience. In addition the lesions are helpful to illustrate to, and discuss with the student, what clinical signs/symptoms may result from either direct destruction of a given center or interruption of its related pathways. The students are encouraged to ask questions throughout the exercise.

The Manual is intended to be used together with the “Atlas of the Human Brain” (also part of the course package provided by Conjoint Teaching Services), the images of which are to be consulted with instructors. Images are projected in the assigned sequence found in the Manual. Each instructor first calls an image number (designated in the Manual as Atlas Fig. #, left column), followed by a descriptive text (Description, center column) which dovetails with the structures (List of Terms, right column) that need to be learned for that particular image. For each presented image, lab instructors have been encouraged to neither deviate from the assigned sequence of terms, nor add terms unlisted for the image in question. In fact, for any image, provided the instructor adheres to the Description text, each and all of the listed terms should be easily covered.

For approximately the first half of the exercises, special emphasis will be made by the instructor in identifying a set of structures that unequivocally characterizes a particular cross-sectional level of the brainstem and spinal cord (e.g., rostral midbrain is identified by
the presence of the oculomotor nuclear complex and the superior colliculus). This sets the stage for two further objectives met later during the Course: 1) identification of a lesion's level based on signs/symptoms from damage to structures found only at that level, and 2) correlation of a given structure in both histological and MRI images at comparable brain levels. This last objective is essential in learning to identify CNS structures in CT scans and MRIs, and therefore deemed important in preparing the student for a successful clinical career.

**Sample of Neuroscience Laboratory Schedule For 2014:**

<table>
<thead>
<tr>
<th>LAB</th>
<th>DAY</th>
<th>DATE</th>
<th>TIME</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Friday</td>
<td>March 7</td>
<td>9:00AM-12:00 Noon</td>
<td>Blood Supply, Ventricles/CSF, Topography of Spinal Cord and Brainstem.</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Friday</td>
<td>March 14</td>
<td>9:00AM-12:00 Noon</td>
<td>Spinal Cord &amp; Medulla (X-sections). Review of Somato-Sensory Pathways. Atlas Lesions # 2, 4, 6.</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>Wednesday</td>
<td>March 19</td>
<td>9:00AM-12:00 Noon</td>
<td>Pons &amp; Midbrain (X-sections). Review of Trigeminal Pathways. Atlas Lesion # 32.</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>Friday</td>
<td>March 21</td>
<td>9:00AM-12:00 Noon</td>
<td>Auditory &amp; Vestibular Circuits. Vestibulo-Ocular Reflexes. Atlas Lesions # 10, 16, 25.</td>
<td>21</td>
</tr>
<tr>
<td>5</td>
<td>Wednesday</td>
<td>March 26</td>
<td>9:00AM-12:00 Noon</td>
<td>Visual Pathway. Lesions of Visual Pathway. Visual Reflexes. Atlas Lesions # 21, 30, 31, 37, 43.</td>
<td>29</td>
</tr>
<tr>
<td>6</td>
<td>Friday</td>
<td>March 28</td>
<td>9:00AM-12:00 Noon</td>
<td>Upper (UMN) and Lower (LMN) Motor Neurons. Atlas Lesions # 1, 3, 7, 9, 14, 15, 17, 18, 19, 22, 27, 34.</td>
<td>36</td>
</tr>
<tr>
<td>7</td>
<td>Friday</td>
<td>April 11</td>
<td>9:00AM-12:00 Noon</td>
<td>Cerebellum: Afferents/Efferents. Atlas Lesions # 5, 8, 11, 12, 13, 20, 23, 26, 28.</td>
<td>43</td>
</tr>
<tr>
<td>8</td>
<td>Wednesday</td>
<td>April 16</td>
<td>9:00AM-12:00 Noon</td>
<td>Basal Ganglia: Centers and Pathways. Introduction to Horizontal Sections (optional). Atlas Lesions # 29, 33.</td>
<td>51</td>
</tr>
<tr>
<td>9</td>
<td>Friday</td>
<td>April 18</td>
<td>9:00AM-12:00 Noon</td>
<td>Cerebral Cortex: Topography and Functional Areas. Atlas Lesions # 39, 40, 41, 42, 44, 45, 46.</td>
<td>57</td>
</tr>
<tr>
<td>10</td>
<td>Wednesday</td>
<td>April 23</td>
<td>9:00AM-12:00 Noon</td>
<td>Chemosenses: Taste and Olfactory Circuits. Correlation of MRIs/Histological Sections (new).</td>
<td>61</td>
</tr>
<tr>
<td>11</td>
<td>Friday</td>
<td>April 25</td>
<td>9:00AM-12:00 Noon</td>
<td>Limbic System and Hypothalamus. Atlas Lesions #</td>
<td>68</td>
</tr>
<tr>
<td>12</td>
<td>Wednesday</td>
<td>April 30</td>
<td>9:00AM-12:00 Noon</td>
<td>MRIs. Final Lab Review. Practice Practical Exam. Dr. Peduzzi-Nelson (in Jaffar Auditorium)</td>
<td>75</td>
</tr>
</tbody>
</table>
### Participating Faculty Contact Information:

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Office</th>
<th>Telephone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jean Peduzzi- Nelson, PhD</td>
<td>9312 Scott Hall</td>
<td>313-993-4393</td>
<td><a href="mailto:jpeduzzi@med.wayne.edu">jpeduzzi@med.wayne.edu</a></td>
</tr>
<tr>
<td>Lourdes Alfonso, MD</td>
<td>839 Rehab Institute of MI</td>
<td>313-745-0566</td>
<td><a href="mailto:lalfonso@med.wayne.edu">lalfonso@med.wayne.edu</a></td>
</tr>
<tr>
<td>Maysaa Basha, MD</td>
<td>8D, UHC</td>
<td>313-577-1244</td>
<td><a href="mailto:mmerhi@med.wayne.edu">mmerhi@med.wayne.edu</a></td>
</tr>
<tr>
<td>Paul Cullis, MD</td>
<td>1350 Kirts Rd., Troy, MI</td>
<td>248-645-1238</td>
<td><a href="mailto:pcullis@michiganneurology.com">pcullis@michiganneurology.com</a></td>
</tr>
<tr>
<td>Donald DeGracia, PhD</td>
<td>3125 Scott Hall</td>
<td>313-577-6745</td>
<td><a href="mailto:ddegraci@med.wayne.edu">ddegraci@med.wayne.edu</a></td>
</tr>
<tr>
<td>Maher Fakhouri, MD</td>
<td>8D, UHC</td>
<td>313-577-1244</td>
<td><a href="mailto:mfakhouri@med.wayne.edu">mfakhouri@med.wayne.edu</a></td>
</tr>
<tr>
<td>Alexander Gow, PhD</td>
<td>148 Elliman Building</td>
<td>313-577-9401</td>
<td><a href="mailto:agow@med.wayne.edu">agow@med.wayne.edu</a></td>
</tr>
<tr>
<td>Tomomi Ichinose, PhD</td>
<td>8314 Scott Hall</td>
<td>313-577-0836</td>
<td><a href="mailto:tichinos@med.wayne.edu">tichinos@med.wayne.edu</a></td>
</tr>
<tr>
<td>Zhuo-hua Pan, PhD</td>
<td>8360 Scott Hall</td>
<td>313-577-9830</td>
<td><a href="mailto:zhpan@med.wayne.edu">zhpan@med.wayne.edu</a></td>
</tr>
<tr>
<td>Jean Peduzzi-Nelson, PhD</td>
<td>8137 Scott Hall</td>
<td>313-577-8995</td>
<td><a href="mailto:jpeduzzi@med.wayne.edu">jpeduzzi@med.wayne.edu</a></td>
</tr>
<tr>
<td>Kumar Rajamani, MD</td>
<td>8C, UHC</td>
<td>313-745-1540</td>
<td><a href="mailto:krajaman@med.wayne.edu">krajaman@med.wayne.edu</a></td>
</tr>
<tr>
<td>Jeffrey Ram, PhD</td>
<td>6112 Scott Hall</td>
<td>313-577-1558</td>
<td><a href="mailto:jeffram@med.wayne.edu">jeffram@med.wayne.edu</a></td>
</tr>
<tr>
<td>Paul Walker, PhD</td>
<td>9352 Scott Hall</td>
<td>313-577-5678</td>
<td><a href="mailto:pdwalker@med.wayne.edu">pdwalker@med.wayne.edu</a></td>
</tr>
<tr>
<td>Dennis Goebel, PhD</td>
<td>9345 Scott Hall</td>
<td>313-577-8724</td>
<td><a href="mailto:dgoebel@med.wayne.edu">dgoebel@med.wayne.edu</a></td>
</tr>
<tr>
<td>Harry Goshgarian, PhD</td>
<td>9304 Scott Hall</td>
<td>313-577-1045</td>
<td><a href="mailto:hgoshgar@med.wayne.edu">hgoshgar@med.wayne.edu</a></td>
</tr>
</tbody>
</table>
DISCIPLINE: GENETICS
Course Directors: Gerald Feldman, MD & Michelle Cichon, MS CGC

Course Overview:
You are at the forefront of a new model of medicine. The future paradigm will be preventative in nature instead of curative. This will be accomplished by utilizing one's genome to guide the physician. Personalized medicine is in its infancy, but won't be there for long. The field of human genetics (the study of biological variation in humans) is spurring the field of medical genetics (the study of biological variation in humans as it relates to health and disease). Advancement in molecular technology is the driving force behind this new form of medicine, which has applications in all disciplines. It is crucial that every clinician obtain knowledge of genetics as well as guidance in staying on top of the latest technology in this field.

The purpose of this course is to lay the genetics/genomics foundation for you to continue to learn and integrate basic genetic principles and the tools of molecular genetics into your clinical practice. It will provide you with key concepts in genetics that are necessary for all clinicians. Whenever possible, these concepts will be demonstrated using clinical cases. With this form of teaching, we hope to assist you in seeing the importance of genetics in your future practice.

Physicians need to be cognizant of the social, legal, and ethical issues that come with discoveries in medical genetics and genomics. These issues will be touched upon throughout the course and open discussion during small groups will be encouraged.

The course contains 21 lectures, one self-study, five small group Team-Based Learning (TBL) sessions with team quizzes, two patient panels, a clinic day, a class review, and a final exam. The TBL’s conducted during the small group sessions are designed to enable you to apply in a clinically relevant way information presented in the lectures. These small group sessions are an essential component of the course and will be led by genetics professionals.

Course Objectives:
At the end of this introductory medical genetics course, you should understand the following broad objectives based upon recommendations set forth by the Association of Professors of Human and Medical Genetics and the National Coalition for Health Professional Education in Genetics:

- Identify how the organization of the genome and regulation of gene expression, environment, and behavior are related to medical genetic diagnoses
- Recognize general genetics terminology
- Recognize the genetics professionals who may be consulted or act as referral sources for patients at risk for genetic disease
- Compare and contrast how genetic variation is related to normal phenotype and disease phenotype, identifying common genetic conditions
- Identify principles of inheritance patterns through constructing and interpretation of pedigrees obtained from family and medical histories and calculate recurrence risks for families based on inheritance patterns and/or the Hardy Weinberg principle
- Evaluate the clinical, ethical, legal, and social implications for genetic diagnosis, family health, prediction, and personalized medicine
- Distinguish when genetic testing/ genetic screening/population screening is employed, which testing modality to order, and how to interpret the findings of such tests
- Identify treatment/interventions for genetic conditions in patients and their families
Genetics will not be like any of your other first year courses. It is more clinically based and will act as an introduction to your Year 2 courses. We do not expect you to memorize every detail of every disease, instead we would like you to understand the main concepts and how they apply to clinical practice. The learning objectives listed before each lecture in your class notes will help you to know what areas to focus on during your study. The exam and quizzes are based off of these learning objectives. All of the information should be in the notes, but if there is something new in the lecture and it fits one of the learning objectives then you should know it.

**Participating Faculty Contact Information:**

<table>
<thead>
<tr>
<th>PARTICIPANTS</th>
<th>OFFICE</th>
<th>EMAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerald Feldman</td>
<td>2375 Scott Hall</td>
<td><a href="mailto:gfeldman@med.wayne.edu">gfeldman@med.wayne.edu</a></td>
</tr>
<tr>
<td>Leigh Ann Flore</td>
<td>CHM Specialty Center</td>
<td><a href="mailto:lflore@med.wayne.edu">lflore@med.wayne.edu</a></td>
</tr>
<tr>
<td>Lawrence Grossman</td>
<td>3238 Scott Hall</td>
<td><a href="mailto:lgross@med.wayne.edu">lgross@med.wayne.edu</a></td>
</tr>
<tr>
<td>Angela Trepanier</td>
<td>2375 Scott Hall</td>
<td><a href="mailto:atrepani@med.wayne.edu">atrepani@med.wayne.edu</a></td>
</tr>
<tr>
<td>Mili Thakur</td>
<td>2375 Scott Hall</td>
<td><a href="mailto:mthakur@med.wayne.edu">mthakur@med.wayne.edu</a></td>
</tr>
<tr>
<td>Michelle Cichon</td>
<td>3311 Scott Hall</td>
<td><a href="mailto:mcichon@med.wayne.edu">mcichon@med.wayne.edu</a></td>
</tr>
</tbody>
</table>
Self-Directed Learning First Patient Course
Course Director: Matt Jackson, PhD

Course Overview:
Students will use their first patient findings that are provided during the Gross Anatomy labs to develop a self-directed learning project. This will permit learners to address knowledge gaps and develop clinical reasoning skills throughout the basic science curriculum using a personalized self-directed learning plan. Student teams of six assigned for the Gross Anatomy lab will be maintained throughout the second year to permit scheduling a capstone experience which is an oral presentation of their First Patient findings and pertinent research to their classmates and faculty advisors. Team interaction during the first year will be a required element of the project but the ultimate outcome will be an individualized self-directed learning plan. Faculty advisors will be selected based on their commitment to medical student education and critical thinking experience. It is anticipated that each faculty advisor will be responsible for three student groups or a total of 18 students. Therefore, there will be a need for 17 faculty advisors per class.

Students’ independent study plans will be required to reflect their progression through the basic science curriculum. Their reports will reflect knowledge of normal human structure and function gained during first year and progressing to the pathophysiology and treatment of disease learned during second year. Students will present findings from their first patient during a grand rounds-style forum attended by classmates and faculty advisors. Presentations will be scheduled during January and February using the time and student groupings scheduled for the Physical Diagnosis course. Students’ independent study project will reinforce necessary critical appraisal and self-directed learning skills. This course provides student an opportunity to explore their personal knowledge gaps and gain a better foundation in normal human structure and function, pathophysiology, socioeconomic factors of disease and the impact of medical errors on patients.

Students in the basic science years may choose to develop the pathophysiology of disease or focus on specialized areas such as genetic etiologies or therapeutic interventions. Faculty advisors are not assigned as experts in a particular field but will provide mentorship and evaluate the validity of their students’ research approach, their capacity to effectively review pertinent literature, their teamwork during the early phase of the project, and their presentation skills. Faculty advisors will provide a narrative assessment of their students’ self-directed learning plan as they progress through the basic science curriculum. Assessment will be based on the students’ ability to effectively develop and present their independent learning plan. First and second year transcripts will include credit as a pass/fail Self-Directed Learning course. Students who fail to complete the independent learning curriculum will be required to remediate before promotion to the next year. A remediation plan will be developed by the faculty advisor and Assistant Dean of Basic Science Education for those students.
Definitions of Self-Directed Learning

ACADEMIC YEAR 2015-2016 LCME STANDARD ED-5-A WILL BECOME ELEMENT 6.3

6.3 SELF-DIRECTED AND LIFE-LONG LEARNING. The faculty of an institution that sponsors a medical education program ensures that the program’s curriculum includes self-directed learning experiences and time for independent study to allow students to develop the skills of lifelong learning. Self-directed learning involves students’ self-assessment of learning needs; independent identification, analysis, and synthesis of relevant information; and appraisal of the credibility of information sources.

FIVE ELEMENTS OF SELF-DIRECTED LEARNING (adapted from Univ. of Louisville)

Students must:

1. Assess their own learning needs, individually or in groups (i.e., set their own learning objectives).
2. Identify, analyze, and synthesize information relevant to their self-identified learning needs.
3. Assess the credibility of information sources they find.
4. Share the information with their peers and supervisors.
5. Receive feedback on their information retrieval and synthesis skills.
Self-Directed First Patient Project

Objectives
1. Reinforce self-directed learning skills through the basic science curriculum
2. Use the medical student’s first patient to develop an aptitude for clinical reasoning
3. Facilitate longitudinal integration of basic science content throughout the first and second year curricula
4. Provide an opportunity for students to practice critical appraisal skills

Project plan
1. Student teams will be Gross Anatomy lab assignments; six students per team
2. Student teams will maintain their first patient chart throughout Gross Anatomy lab noting any signs of structural abnormalities, pathologies, or surgical interventions
3. Student teams will submit to their faculty mentor an area of investigation
4. Individual students will be required to develop a self-directed learning plan based on the area of investigation selected by their team.
5. Assessment schedule:
   i. Team reports and first individual student reports will be due following completion of the Anatomy and Histology courses (M1/November)
   ii. Second individual student reports will be due following completion of the Physiology and Biochemistry courses (M1/February)
   iii. Third individual student reports will be due following completion of the Neuroscience, Genetics and Clinical Nutrition courses (M1/May)
   iv. Students will present their self-directed learning findings to classmates and faculty advisors during second year (M2/December – February)

Self-directed learning plan requirements
1. Abnormal findings for their first patient
2. Contribution of abnormal findings to patient death
3. Identification of personal knowledge gaps related to the patient’s disease processes
4. Proposed area of research that will be presented in second year
5. Potential clinical reasoning research areas:
   i. Pathophysiology of disease process
   ii. Congenital aspects of disease
   iii. Pharmacotherapy
   iv. Epidemiology including lifestyle impact
   v. Infectious etiology
   vi. Impact of medical error on patient outcome

Faculty advisor evaluation
1. The quality and completeness of the work plan
2. Ability to progressively address knowledge gaps throughout the basic sciences
3. Capacity to search and apply research findings from pertinent literature
4. Clinical reasoning skills
5. Prepare and present their case study to peers and faculty
Responsibilities

Faculty Advisors will assess their students’ progress three times during the Academic Year

Progress Report #1 - November 2016 following completion of the Anatomy and Histology courses

Requirement (each report is 1 page, single-spaced)

1. Each team will submit for review their patient chart which includes anatomic abnormalities, pathologies, surgical device implantation
2. Each team will select a common condition for exploration and include a learning plan of work.
3. Each student will submit for review their personal knowledge gaps and how they anticipate that the plan of work will expand their understanding. Potential areas of clinical reasoning research:
   i. Pathophysiology of the disease process
   ii. Congenital aspects of disease
   iii. Pharmacotherapy
   iv. Epidemiology including lifestyle impact
   v. Infectious etiology

Faculty assessment
Satisfactory or Unsatisfactory progress by the three teams:
1. Did the team maintain a patient chart during Anatomy?
2. Does the team’s plan of work demonstrate a collaborative effort?
3. Did the team identify a manageable clinical reasoning area of investigation?

Satisfactory or Unsatisfactory progress by the 18 individual students:
1. Did the student submit their report on time?
2. Did they demonstrate a reasonable grasp of the clinical problem by making a reasonable attempt to identify personal knowledge gaps?
3. Do they understand how the basic sciences curriculum will reduce their knowledge gaps?

Progress Report #2 - February 2017 following completion of the Physiology and Biochemistry courses

Requirement (each report is 1 page, single-spaced)

1. Each student will submit for review a reflection how their personal progress in the curriculum to date has impacted their knowledge gaps.
2. Student reports will include 2 pertinent references

Faculty assessment
Satisfactory or Unsatisfactory progress by the students:
1. Did the student submit their report on time?
2. Does each student’s reflection statement demonstrate a reasonable progression through the curriculum?
3. Does each student provide pertinent references

Progress Report #3 - May 2017 following completion of the Neuroscience, Genetics and Clinical Nutrition courses

Requirement
1. Each student will reflect on the impact that the curriculum, their review of the pertinent literature.
2. Student reports will include 2 new pertinent references.

Faculty assessment
Satisfactory or Unsatisfactory progress by the students:
1. Did the student submit their report on time?
2. Does each student’s reflection statement demonstrate a reasonable progression through the curriculum?
3. Did each student select a clinical area of investigation that will be suitable for presentation in second year?
4. Did each student provide an original set of pertinent references?

Capstone Experience - December– February during the sophomore year
Requirement
1. Student teams will develop a mini-grand rounds style presentation of their first patient including a summary of the clinical findings and their self-directed learning progression throughout the basic science curriculum. Team presentations will reflect how their knowledge and clinical reasoning skills have evolved through the curriculum, their review of the literature, and their personal clinical and/or research experience. The sophomore class will be divided according to Physical Diagnosis groups and presentations will be attended by faculty advisors and classmates.
2. Individual students will present a summary of their individual knowledge gaps and reflect how their perception of the First Patient experience has progressed since the Anatomy course.
3. Individual students will summarize their research findings as they pertain to the area selected by their team.

Faculty assessment
1. Satisfactory or Unsatisfactory presentation by the teams and individual students’ summary statements demonstrating an expanded knowledge base and progression of clinical reasoning skills.
2. A narrative assessment form will be used to evaluate the individual student’s development through the Self-Directed First Patient Course.
WAYNE STATE UNIVERSITY
SCHOOL OF MEDICINE

POPULATION, PATIENT AND
PHYSICIAN (P3)
SYLLABUS
PART 1

2016-2017
### Population, Patient and Physician (P3)- Part 1

#### Table of Contents

<table>
<thead>
<tr>
<th>Page #</th>
<th>Lecture/Materials</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>P3 Faculty and Staff</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Course Schedule</td>
<td></td>
</tr>
<tr>
<td>5 – 10</td>
<td>Introductory Materials</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Clinical Medicine 1 Reading Resources</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td><strong>Self Study:</strong> Place Matters- Social Determinants of Health</td>
<td>Self Study</td>
</tr>
<tr>
<td>13 – 18</td>
<td><strong>Self Study:</strong> Evidence-Based Practice Assignment #1</td>
<td>Self Study</td>
</tr>
<tr>
<td>19</td>
<td>Basic Life Support (BLS)</td>
<td></td>
</tr>
<tr>
<td>20 - 28</td>
<td><strong>Lecture:</strong> Course Introduction Including Obtaining a Medical History/The Medical Record/Interviewing</td>
<td>Dr. Appel</td>
</tr>
<tr>
<td>29 - 42</td>
<td><strong>Self Study:</strong> Introduction to Public and Population Health</td>
<td>Self Study</td>
</tr>
<tr>
<td>43 - 48</td>
<td><strong>Self Study:</strong> Professionalism</td>
<td>Self Study</td>
</tr>
<tr>
<td>49 - 54</td>
<td><strong>SG 1:</strong> Interviewing/Chief Complaint/HPI</td>
<td>Small Group Instructor</td>
</tr>
<tr>
<td>55</td>
<td><strong>Lecture:</strong> Clinical Prevention Guidelines</td>
<td>Dr. K. Schwartz</td>
</tr>
<tr>
<td>56 - 59</td>
<td><strong>Self Study:</strong> Evidence-Based Practice Assignment #2</td>
<td>Self Study</td>
</tr>
<tr>
<td>60 - 62</td>
<td><strong>Self Study:</strong> Terminology in Clinical Medicine</td>
<td>Self Study</td>
</tr>
<tr>
<td>63 - 64</td>
<td><strong>Self Study:</strong> Exposure History</td>
<td>Self Study</td>
</tr>
<tr>
<td>65 - 72</td>
<td><strong>SG 2:</strong> Ethics/Professionalism/PMH/FH/OE Exposures: The Uncomfortable Arm/Appropriate Introductions and Interactions for Physicians in Training</td>
<td>Small Group Instructor</td>
</tr>
<tr>
<td>73</td>
<td><strong>Panel:</strong> Humanities in Medicine</td>
<td>Drs. Appel &amp; Morreale</td>
</tr>
<tr>
<td>74 - 77</td>
<td><strong>Lecture:</strong> The Pediatric Interview</td>
<td>Dr. Friday</td>
</tr>
<tr>
<td>78 - 87</td>
<td><strong>SG 3:</strong> OE Exposure/Family and Financial Stress/Acute Illness: Linda Samples Follow-Up Visit</td>
<td>Small Group Instructor</td>
</tr>
<tr>
<td>88 - 97</td>
<td><strong>SG 4:</strong> Acute Illness: Sore Throat - Pediatrics</td>
<td>Small Group Instructor</td>
</tr>
</tbody>
</table>
Population, Patient, and Physician Course
August 10 - December 10, 2016

Population Health, Evidence-based Practice, Cultural Awareness
Director
Kendra Schwartz, MD, MSPH
Academic and Student Programs

Service Learning
Director
Jennifer Mendez, PhD
Academic and Student Programs

Clinical Medicine Faculty and Staff
Director
Joel Appel, D.O.
Academic and Student Programs

Section Directors
Chih Chuang, M.D. (Physical Diagnosis)
Academic and Student Programs

Course Coordinators
Gini Gilchrist  577-9329
Academic and Student Programs

Small Group Facilitators
Heather Abraham, M.D.
Joel Appel, D.O.
Allie Dakroub, M.D.
Trifun Dimitrijevski, M.D.
Mark Faber, M.D.
Yvonne Friday, M.D.
Marla Rowe Gorosh, M.D.
Julie Hays, M.D.
Greg Hays, M.D.
Rachel Klamo, D.O.
Sarkis Kouyoumjian, M.D.
Karl Lauterbach, M.D.
Jacqueline Leja, M.D.

Diane Levine, M.D.
Meghan Liroff, M.D.
James Meza, M.D.
Courtney Moore, M.D.
Mary Morreale, M.D.
John Otremba, M.D.
Pierre Tannous, M.D.
Jarrett Weinberger, M.D.
Nakia Williams, M.D.
Scott Yaekle, M.D.
Chin Yi, M.D.

Contributing Faculty
Joel Appel, D.O.
Yvonne Friday, M.D.
Kendra Schwartz, M.D.
*SMALL GROUP (SG) sessions are scheduled for 2 hours between 8:00 am and 12:00 pm, as assigned for your specific small group.

<table>
<thead>
<tr>
<th>Day/Date</th>
<th>Time/Due Date</th>
<th>Session Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 10</td>
<td>5:00 pm – 8:00 pm</td>
<td>Urban Clinical First Encounter</td>
</tr>
<tr>
<td>August</td>
<td>8/31/16</td>
<td><strong>Self-Study:</strong> “Place Matters” Social Determinants of Health Assignment</td>
</tr>
<tr>
<td>August – December</td>
<td>12/16/16</td>
<td>Service Learning Site Visits</td>
</tr>
<tr>
<td>October</td>
<td>10/5/16</td>
<td><strong>Self-Study:</strong> Evidence-based Practice #1 with Blackboard Problem Set #1</td>
</tr>
<tr>
<td>Friday, October 14 or Monday, October 17</td>
<td>8:00 am – 5:00 pm As Assigned</td>
<td><strong>Basic Life Support</strong> – REQUIRED</td>
</tr>
<tr>
<td>Tuesday, October 25</td>
<td>8:30 am – 10:00 am</td>
<td><strong>Lecture:</strong> Clinical Medicine Introduction (Dr. Appel) – REQUIRED Including the Medical Interview and the Medical Record</td>
</tr>
<tr>
<td>October</td>
<td>10/26/16</td>
<td><strong>Self Study:</strong> Introduction to Public and Population Health</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Self Study:</strong> Professionalism &amp; Professionalism Case Studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Blackboard QUIZ #1</strong></td>
</tr>
<tr>
<td>Thursday, October 27</td>
<td>8:00 am – 12:00 pm</td>
<td><strong>SG 1</strong>: Interviewing/Chief Complaint/HPI – REQUIRED</td>
</tr>
<tr>
<td>Friday, October 28</td>
<td>8:30 am – 10:00 am</td>
<td><strong>Lecture:</strong> Population Health Indicators and Clinical Prevention Guidelines (Dr. Schwartz)</td>
</tr>
<tr>
<td>November</td>
<td>11/4/16</td>
<td><strong>Self Study:</strong> Terminology in Clinical Medicine</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Self Study:</strong> Exposure History (preparation for SG 2)</td>
</tr>
<tr>
<td>November</td>
<td>11/9/16</td>
<td><strong>Blackboard QUIZ #2</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Self-Study:</strong> Evidence-based Practice with Blackboard Problem Set #2</td>
</tr>
<tr>
<td>Thursday, November 10</td>
<td>8:00 am – 12:00 pm</td>
<td><strong>SG 2</strong>: Ethics/Professionalism/PMH/FH/OE Exposures: The Uncomfortable Arm/Appropriate Introductions and Interactions for Physicians in Training – REQUIRED</td>
</tr>
<tr>
<td>Friday, November 11</td>
<td>9:00 – 11:00 am</td>
<td><strong>Panel:</strong> Humanities in Medicine (Drs. Appel &amp; Morreale) – REQUIRED</td>
</tr>
<tr>
<td>Tuesday, November 15</td>
<td>9:00 am – 10:00 am</td>
<td><strong>Lecture:</strong> The Pediatric Interview (TBA)</td>
</tr>
<tr>
<td>November</td>
<td>11/30/16</td>
<td><strong>Blackboard QUIZ #3</strong></td>
</tr>
<tr>
<td>Thursday, December 1</td>
<td>8:00 am – 12:00 pm</td>
<td><strong>SG 3</strong>: OE Exposures/Family and Financial Stress/Acute Illness: Linda Samples Follow-Up Visit – REQUIRED</td>
</tr>
<tr>
<td>December</td>
<td>12/7/16</td>
<td><strong>Blackboard QUIZ #4</strong></td>
</tr>
<tr>
<td>Thursday, December 8</td>
<td>8:00 am – 12:00 pm</td>
<td><strong>SG 4</strong>: Acute Illness: Sore Throat – Pediatrics – REQUIRED</td>
</tr>
</tbody>
</table>
Population, Patient and Physician (P3)
Course Director: Kendra Schwartz, M.D. MSPH

Course Overview:
P3 is a Year 1 course that provides students the opportunity to learn, practice, and apply knowledge and skills as a physician-in-training, in diverse urban clinical settings as well as in the local community. Through large group sessions, small group sessions, online modules, self-directed reflective assignments, and clinical and community engagement, students will actively participate in activities demonstrating the interconnectedness of the population, patient and physician.

During Year 1, the course will focus on:
- population health
- health information databases
- social determinants of health
- health disparities
- patient interviewing skills
- basic physical examination skills
- the doctor-patient relationship
- cultural awareness
- clinical reasoning skills
- patient safety and quality healthcare
- clinical epidemiology and critical appraisal
- self-identification as a competent, caring, ethical physician-in-training

Course Objectives:
At the end of Year 1, students will demonstrate a basic level of proficiency in fulfilling the following objectives:

Population Health
1. how to assess the health status of populations using available data
2. role of socioeconomic, environmental, cultural and other population-level determinants on the health status of individuals and populations
3. strategies to work with the community to enhance the health of the population

Collaborative and Interprofessional Relationships
1. effective doctor-patient relationships
2. awareness of the effect of cultural biases (implicit or explicit) on interpersonal relationships
3. productive relationships with other health care providers, students and members of healthcare systems
4. collaborative relationships with community service providers

Patient Interviewing
1. conducting a comprehensive patient interview
2. active listening
3. motivational interviewing
Physical Examination
1. basic components of the physical examination
2. respecting patient’s comfort and privacy

Oral Presentations and Clinical Documentation
1. documentation of clinical data in a clear, concise manner
2. identification of basic normal and abnormal physical findings
3. basic oral presentation skills

Clinical Reasoning
1. integration, organization, and interpretation of information gathered during the medical history and physical examination
2. critical thinking to develop differential diagnoses
3. evaluation of health literature and its implications for patient and population health

Professional Identity
1. professional behavior and active participation in all aspects of the course, intellectual honesty, as well as respect for patients, families, colleagues and faculty
2. being a collaborative member of the healthcare team in contributing to improved health of patients, including patient safety and privacy
3. reflection on process of becoming a physician, including the challenges, opportunities and well-being

Expectations for successful completion of the course:
1. Prepare for and participate in all small group sessions, service learning opportunities, and large group patient panels.
2. Submit all assignments.
   a. Service learning poster or presentation
   b. Description of the demographic and social environment based on zip code of the students’ “First Patient” and reflection of how that environment could affect health of the patient
   c. Evidence-based Practice worksheets (3 total assignments)
3. Prepare for and take all Blackboard quizzes. Total of 12 quizzes.
4. Pass the Year 1 OSCE.
Attendance:
- Attendance is mandatory for all small group sessions and large group panel presentations. It is also mandatory for the CM1 introduction/orientation by Dr. Appel on 9/29/2016.
- Attendance is highly recommended for all other large group sessions.
- Missed small group sessions and large group panel presentations will be considered unprofessional and may be reported to the Professionalism Committee.
- Attendance of required sessions is a course requirement. Any student missing 4 or more required sessions will be subject to remediation.
- Reasonable accommodations will be offered to students who provide advanced notice to Dr. Appel, Course Director, of conflicts between religious obligations and any of the required sessions of the CM1 course. Dr. Appel must be notified of the conflict no later than 10/6/2016 by email with a read receipt. Generally, students will be offered a make-up session or be required to complete an alternative learning experience to avoid having an absence held against them.

Remediation:
Any student who misses 4 or more required sessions, or one or more required quiz(zes), will be subject to remediation. Remediation will involve a 30-page research paper, including 40 references, on a subject determined by the course director.

Web-Based Instruction and Self-Study:
Registering on Blackboard is required for the course. PowerPoint presentations by lecturers and other resources and course information can be accessed via Blackboard. You are responsible for knowing all material presented in these formats. Self-study materials are a supplemental resource to the lectures and will be covered on the quizzes.

REMEMBER: All official communication is sent via WSU email. Please check your email daily.

FYI: HOW TO FORWARD YOUR WSU EMAIL TO YOUR WSU-SOM EMAIL:
2. Login using your WSU access ID (ab1234) and password.
3. Select “Account” from the upper right menu.
4. Select “Set or Change Mail Forwarding.”
5. Enter your medical school email address (you can select either setting, “Keep a copy on server” OR “Do not keep a copy on server.”)
6. Select “OK.”
If you have any further questions or access problems, please contact Ms. Amie Dozier in BioMedical Communications at adozier@med.wayne.edu.
The Population, Patient, and Physician course includes material from several areas. The backbone of the course is the small group sessions that focus on clinical medicine skills. Other areas of emphasis include:

- Population health
- Epidemiology/Biostatistics/Evidence-based Practice
- Cultural awareness
- Critical appraisal
- Professionalism

**Early Clinical Exposure and Service Learning:**

Early clinical exposure will be accomplished through the new service learning requirement. Students also will be able to apply concepts of population health and cultural awareness through their service learning requirements. Each student will be assigned to a team. Each team will attend 5 different sessions for 2 hours at a local clinic for the uninsured or underinsured. These clinical assignments will take place through the Co-Curricular Program and can be counted toward the Co-Curricular Assignments.

In addition, students will complete 10 hours with their team in a mentoring or outreach role. These required clinical and mentoring requirements are designed to:

- Improve students’ educational experience by providing opportunities to practice clinical skills, apply classroom knowledge and demonstrate understanding through reflection, while serving the needs of the local community;
- Strengthen community relationships and demonstrate the value of medical students’ participation as volunteers.

At the end of the Year 1, students will be expected to have completed the following objectives for the Service Learning component of the Population, Patient and Physician course:

1. Promote community engagement by collaborating with local community agencies and the people they serve.
2. Demonstrate proficiency in clinical skills as taught in the clinical medicine course.
3. Prepare a poster presentation or report on the role of the health care provider in a service learning opportunity.
4. Demonstrate the ability to work effectively within a culturally diverse and/or interprofessional health care team.
5. Describe wellness, determinants of health, and opportunities for health promotion and disease prevention.
6. Describe the potential health-related impact on patients of behavioral and socioeconomic factors.
7. Assist patients in addressing health-related issues.
9. Describe the health care needs of medically underserved populations.
10. Describe the core professional attributes needed to provide effective care in a multidimensional and diverse society.
Cultural Awareness:
As stated above the Service Learning component of the P3 course provides excellent opportunities for students to develop and enhance their cultural awareness. Communication skills will be emphasized throughout the entire P3 course, and particular importance will be placed on communicating professionally, in a culturally sensitive manner with patients from diverse backgrounds as well as with co-workers, colleagues, and supervisors.

At the end of Year 1, students completing this material will be able to describe

1. how biases, privilege, and cultural assumptions affect your approach to patient care.

2. social determinants of health, societal inequities and medical social economics as they relate to patient care and the health of the community.

3. importance of communicating with a culturally diverse health care team. (this is also an objective of the Service Learning component of P3)

4. assets and resilience of the surrounding community to create sustainable collaborations.

5. ways in which you can invest in the urban community across varying levels of policy and leadership to enhance the health of the urban community. (overlaps with Service Learning component of P3)

Population Health, Evidence-based Practice and Critical Appraisal:
Introduction to concepts of population health, clinical epidemiology, and critical appraisal will take place throughout Year 1 through the P3 course. Students will be expected to apply these concepts to the cases they discuss in Clinical Medicine, in the First Patient course, as well as through Blackboard assignments.

At the end of Year 1, students will be able to describe

Population Health

1. how to assess the health status of populations using available data (e.g., public health surveillance data, vital statistics, registries, surveys, electronic health records and health plan claims data)

2. distribution of morbidity and mortality by age, gender, race, socioeconomic status, and geography in the United States

3. role of socioeconomic, environmental, cultural, and other population-level determinants of health on the health status and health care of individuals and populations

4. leading causes of death, leading underlying causes of death, and health disparities in the United States

5. Healthy People 2020 Objectives both in assessment of health status and as a component of strategies to improve community health
Clinical Epidemiology/Evidence-based Practice

1. distribution of disease in a population according to person, place and time
2. how to calculate measures of disease occurrence and disease severity including incidence, prevalence, and case-fatality
3. major epidemiologic study designs including strengths and weaknesses of each and issues of interpretation of each including bias and confounding
4. measures of association including relative risk and odds ratios
5. how to interpret measures of association, confidence intervals and p-values
6. how to evaluate medical and public health literature and its implications for patient and population health
7. how to employ the concepts of primary and secondary prevention as they relate to common clinical preventive services
8. appropriate conditions for screening in terms of characteristics of the disease, the patient and the screening test
9. how to calculate the characteristics of diagnostic tests: sensitivity, specificity and positive and negative predictive values
10. how to evaluate screening tests in terms of their validity, results and generalizability
Population, Patient, and Physician- Part 1
Reading Resources

Required:
- Syllabus, additional lecturer handouts
- Blackboard assignments

Helpful:

Web sites:
- http://www.usersguides.org/ (JAMA or “Users Guide textbook supported online access)
- The JAMA Clinical Rational Examination Series:
- The Institute for Healthcare Improvement, a patient care quality and safety resource:
  http://www.ihi.org*
- You may also find a medical dictionary such as Stedman’s useful for this course, as well as for other courses during the first two years.

Equipment:
Year 1 required equipment: stethoscope

Year 2 recommended equipment: stethoscope (good quality – comparable to Littman Cardio 3), oto-ophthalmoscope kit, tuning forks – 128 Hz and 512Hz, reflex hammer, penlight

*You are encouraged to register on the IHI website and complete the Open School Course modules. Specifically, the course on Patient and Family Centered Care (PFC) 101 entitled Dignity and Respect. This site allows you to print off a certificate of completion.
As a component of the First Patient Project and Population, Patient and Physician Course

According to the World Health Organization, the Social Determinants of Health are the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries.

Assignment
1. Watch video about social determinants of health individually or as group. The video is named “Unnatural Causes - Place Matters”. It is 29 min long. Available on Blackboard

2. As a group, use the zip code of first patient to determine the following circumstances of the people living in that zip code:
   a. Racial/ethnic composition
   b. Average household income
   c. Poverty levels (percentage of person living below poverty
   d. Transportation – e.g. household ownership of car, usual mode of transportation
   e. Violence/crime in that zip code
   f. Education level in zip code
   g. Unemployment level in zip code
   h. Health insurance coverage

3. As a group, make a table with the information you find for the patient’s zip code

4. Write a paragraph of how the environmental circumstances of the patient may have affected his/her health.

5. Place the one-page of information (table and paragraph) on a piece of paper. Insert the piece of paper into a plastic sleeve and keep at “bedside” of first patient.

6. Reflect with your group on how the patient’s environment differed from your own when growing up.

Resources
American FactFinder, U.S. Census Bureau factfinder.census.gov/
CLRSearch.com for violence
Definition
The most common definition for Evidence-based Practice is from Dr. David Sackett, who is recognized as one of 3 “fathers” of modern clinical epidemiology. He described Evidence-based Practice as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. This means integrating individual clinical expertise with the best available external clinical evidence from systematic research.”

Clinical Epidemiology is regarded as a bridging discipline, applying epidemiological principles to healthcare problems and management. There are calculations associated with clinical epidemiology that are important to learn. These concepts and calculations are tested in USMLE Step 1 examination.

Objectives
At the end of this session, you will be able to:

1. Describe the components of a well-built clinical question
2. Identify searching strategies for using PubMed to answer clinical questions
3. Describe the following study designs and strengths and limitations
   a. Meta-analysis
   b. Systematic review
   c. Randomized controlled trial
   b. Cohort study
   c. Case-control study
   d. Cross-sectional study
   e. Case-report/case series
4. Describe measures of association that can be derived for different types of studies
5. Interpret measures of association, measures of benefit or harm, confidence intervals and p-values
Instructions for the Assignment
1. Use the Duke tutorial to address the objectives listed above

http://guides.mclibrary.duke.edu/c.php?g=158201&p=1036002

The tutorial will not take more than one hour. Please complete all of it.

2. Use other resources listed below to enhance your understanding of different calculations and interpretation of statistics (Objective #5)

How to calculate Odds Ratio (3 minute video) – Used for Case Control Studies
https://www.youtube.com/watch?v=ITi0SxmQTO8

How to calculate Relative Risk (3 minute video) – Used for Cohort Studies
https://www.youtube.com/watch?v=xk2uK14eHNs

How to calculate Absolute Risk Reduction, Number Needed to Treat (Harm) for Randomized controlled trials
https://www.youtube.com/watch?v=M16SqIMqVto&list=PLD_pSEvgCSTTJocq6j_P74NzKpwRPAcdp

3. Complete the online worksheet

Additional Resources
Center for Evidence-based Medicine website: www.cebm.net

Lectures from Translational Medicine course 2015-16 by Dr. Meza
Worksheet for Evidence-based Practice Assignment #1

1. Review the study designs below. Write a short description of methodology for each – one to two sentences. Then number them in order from most rigorous (#1) to least rigorous (6) (least susceptible to bias to most susceptible to bias).

   a. Case report/Case series
   b. Cohort study
   c. Cross-sectional Survey
   d. Meta-analysis
   e. Case-Control study
   f. Randomized controlled trial
   g. Systematic review

2. The numbers below are from a case-control study conducted by Dr. Schwartz. Take the numbers from the text and insert them correctly into the labeled 2 x 2 table. Calculate the Odds Ratio.

There were 1201 cases of renal cell carcinoma and 1226 non-cancer controls. Among the cases, there were 500 who had never been diagnosed with hypertension (HTN) and 701 who had been diagnosed with HTN. Among controls, there were 718 who had never been diagnosed with HTN and 508 who had been diagnosed with HTN. Calculate the odds ratio for developing renal cell carcinoma among hypertensives as compared to non-hypertensives.

   a. What is the exposure in this example?

   b. What is the outcome of interest?

   c. Among those with the outcome, is there increased risk of exposure? Calculate the Odds Ratio to answer this question using the 2 x 2 table below.

Show your work.

<table>
<thead>
<tr>
<th></th>
<th>Case</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTN</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
d. Describe in words what this odds ratio means.

e. The 95% confidence interval for the calculated OR is (1.7-2.5). Describe in words what a confidence interval is. Does the OR and confidence interval indicate a significant difference in exposure risk between cases and controls?

3. The OR calculation can also be stratified by race. Calculate the OR for black participants and white participants using the 2 x 2 tables below.

a. Among black cases, 102 had never been diagnosed with HTN and 256 had been diagnosed. Among black controls, 273 had never been diagnosed with HTN and 246 had been diagnosed. Label the table and calculate OR. Show your work.

<table>
<thead>
<tr>
<th></th>
<th>Case</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No HTN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Among white cases, 398 had never been diagnosed with HTN and 445 had been diagnosed. Among white controls 445 had never been diagnosed with HTN and 262 had been diagnosed. Label the table and calculate OR. Show your work.

<table>
<thead>
<tr>
<th></th>
<th>Case</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No HTN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c. Which racial group has the higher risk of developing renal cell carcinoma if they have been diagnosed with HTN?

_African American/Black have higher odds of developing renal cell carcinoma in this sample population. However it would be necessary to compare the confidence intervals of the two groups to see if they overlap. If they do, there would be no statistically significant difference in risk._

4. Let’s say that you were funded to follow a group of people with and without hypertension to determine the number of total participants who developed renal cell carcinoma.
a. What type of study is this called?

b. How does a cohort study differ from a case-control study?

c. What is the measure of risk determined from a cohort study?

d. Use the 2 x 2 table below to show how you would calculate relative risk with the following numbers.

Among 1000 hypertensives followed for 20 years, 5 developed renal cell carcinoma. Among the 1000 people without hypertension, 1 person developed renal cell carcinoma. What is the relative risk of developing renal cell carcinoma among hypertensives? Show your work.

<table>
<thead>
<tr>
<th>Cancer</th>
<th>No cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTN</td>
<td></td>
</tr>
<tr>
<td>No HTN</td>
<td></td>
</tr>
</tbody>
</table>

5. Use the table below reproduced from a classic study of the use of Angiotensin Converting Enzyme inhibitor (ACE-I, a type of anti-hypertensive medication) in congestive heart failure. This study, called the CONSENSUS trial, compared enalapril (an ACE-I) to placebo. Use the table to calculate the absolute risk of death among patients with severe congestive heart failure who took enalapril and those on a placebo. (citation: CONSENSUS Trial Study Group. Effects of enalapril on mortality in severe congestive heart failure. New England Journal of Medicine 316:1429-35, 1987.)
Table 2. Mortality from Any Cause in the Two Groups (Enalapril and Placebo)

<table>
<thead>
<tr>
<th></th>
<th>Treatment Group</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Placebo (N=126)</td>
<td>Enalapril (N=127)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Mortality at 6 mo</td>
<td>55</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>44</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Mortality at 1 yr</td>
<td>66</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>52</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

a. What is the absolute risk of death at 6 months for enalapril compared to placebo? Show your work.

b. What is the absolute risk of death at 1 year for enalapril compared to placebo. Show your work.

c. Calculate the Number Needed to Treat (NNT) for enalapril for 6 months. Show your work.

d. Explain what this NNT number means in words.
Friday, October 14, 2016 or
Monday, October 17, 2016

8:00 am - 5:00 pm (As Assigned)

Students will be assigned to one of 4 groups and attend a half-day session that will lead to obtaining an American Heart Association BLS certification card. The didactic portion of this course will be completed on-line with the School providing an access code to the American Heart Association’s on-line training modules. Practice and a practical certification exam will take place on-site with instructors in one of the four half day sessions.

Learning Objectives:
- Perform appropriate CPR/2-person CPR.
- Perform appropriate infant CPR.
- Demonstrate appropriate use of AED.
- Demonstrate appropriate use of Bag-Mask-Valve System.
- Be able to relieve choking in adults, children and infants.
- Be able to deal with Foreign Body Airway Obstruction (FBAO).

Key Points:
1. For Lone Rescuer remember it is now C-A-B.
2. Adult BLS differs from Child BLS.
3. Adult BLS:
   a. Unresponsive and no breathing -> ACTIVATE EMS -> Start CPR (Get Defibrillator) -> Check Rhythm (Repeat every 2 minutes).
   b. In adults cardiac arrests are mostly due to primary sudden cardiac death, thus need defibrillation for rescue.
4. Child BLS:
   a. Unresponsive and no breathing -> Start CPR (Get Defibrillator if available) -> Stay with child.
   b. In children cardiac arrests are primarily due to asphyxia thus just need compressions and ventilation.
5. For CPR push hard and push fast, at least 100 compressions per minute.
Population, Patient, and Physician- Part 1
Clinical Medicine Introduction
Including the Medical History and the Medical Record

Tuesday, October 25, 2016

8:30 am – 10:00 am - REQUIRED

Lecture: Dr. Appel

Learning Objectives:
- Review CM1 schedule and syllabus
- Identify CM1 instructors and important contact information
- Discuss large group sessions, small group sessions, and web-based materials
- Review course evaluation
- Describe the Patient-Centered Clinical Method as an evolving model of patient/physician interaction that defines clinical decision making as an integration of evidence-based medicine and the patient’s values.

The Medical History
1. Describe the structure of the initial phase of the medical interview.
2. Contrast the two methods of clinical care: the traditional biomedical method and the newer patient-centered method.
3. Learn effective interviewing techniques, interview structure and method of recording

The Patient Interview
1. Describe the importance of communication in the patient physician relationship.
2. List the 3 functions of the medical interview.
3. Describe the role of empathy in the doctor-patient relationship
4. Demonstrate non-verbal skills (eye contact, posture, environment) important for successful medical interviewing
5. Demonstrate the appropriate use of questioning skills in eliciting information from patients (open vs. closed-ended questions, circular questions, judgmental questions, etc.).
6. Understand that patients often seek care for multiple reasons.

The Medical Record
Identify how to record the basic elements of the medical interview in the medical record.
Clinical Medicine Overview:
The purpose of the Clinical Medicine (CM) component of P3 is to introduce the student to the knowledge, skills and attitudes needed in clinical practice. Clinical Medicine differs from most other courses taught during the first two years of medical school because:

1. It is case-based.
2. A significant portion of the course takes place in small groups.
3. It encourages the development of professional responsibilities. The student will demonstrate behaviors essential to clinical practice (advanced preparation for lessons and expectations for mandatory participation, respect for colleagues, and sensitivity to patient rights and diversity).
4. It simulates the clinical learning environment with peer-based team learning facilitated by an experienced clinician.
5. It is a collaborative course including the departments of Family Medicine, Internal Medicine, Obstetrics and Gynecology, Pediatrics, and Emergency Medicine. It is taught by University faculty as well as community physicians.

Small Group Sessions:
The small group (SG) sessions focus on patient cases involving members of the fictional “Samples” family. You will “meet” a different (virtual) family member during each unit, and some will return for follow-up visits during subsequent units. Some sessions will include a (live) standardized patient (SP) for you to interview. The emphasis in the small group sessions is on learning to communicate effectively with patients and obtain an organized and concise medical history. Since this course is an introduction to the clinical experience, it is expected that you likewise will prepare for and participate in each unit by:

- Reading the syllabus before each SG session
- Reading texts and attending or streaming lectures as recommended for particular SG sessions
- Completing self-study assignments and quizzes

Once assigned to a SG facilitator, you will not receive credit for attendance at any other group. As is the case on hospital rounds, physician teachers will randomly call on students to discuss the assignment. For small group sessions, you are required to dress as if you were seeing patients. This means wearing your clean white coat and appropriate professional attire as described in the SOM dress policy: http://www.med.wayne.edu/academic_student_programs/clinical_science/dresspolicy.asp

Note: It may be necessary for individual groups to reschedule their sessions due to time conflicts of physician facilitators. If a session is rescheduled, you will be notified by Ms. Gilchrist by e-mail with the time or location change. The SG facilitators are busy practicing clinicians, so last minute changes may occur. Please check your e-mail the night before each SG session.

Large Group Activities:
There are a number of lectures and panel presentations in CM that complement the small group sessions. Generally, the patient problem to be discussed in the small groups will have a complementary large group session or self-study assignment. You should attend or stream lectures prior to each SG session.
An Overview of the Medical Encounter - Part I

In the vast majority of patient encounters, a short differential diagnosis is formulated during the medical interview, then refined and/or confirmed during the physical and laboratory examinations. Good interviewing skills are therefore clearly critical to success as a physician. This section provides an overview of the skills necessary to take an accurate and complete medical history and an outline of the content of the physical examination.

During the interview it is important to avoid the use of medical jargon, and to not talk down to the patient. You are there to help the patient, not impress him or her. Lack of education or medical sophistication does not imply lack of intelligence, and all patients should be treated with respect.

The interview itself is a constant process of hypothesis generation and testing. Beginning with the chief complaint, an initial hypothesis is formed. As you proceed through the interview, specific questions eliminate some hypotheses and generate others, until a diagnostic hypothesis consistent with the patient’s complaint is obtained. Note that the heart of the process is a cycle of hypothesis generation, hypothesis testing, and rejection or acceptance of the hypothesis. The hypotheses generated during the interview guide the physical examination, and the final list of hypotheses becomes the differential diagnosis (DDx) that guides further evaluation and treatment of the patient's problem. For patients presenting with multiple problems, it may be necessary to go through the process described above for each problem.

While the format of the complete medical history is quite structured, this apparent rigidity facilitates memorization, encourages completeness, and aids communication between health care providers. The general format is as follows:

1. Patient profile
2. Chief complaint
3. History of Present Illness
4. Past Medical History
5. Past Surgical History
6. Medications
7. Allergies
8. Family History
9. Social History, including Occupational/Environmental History
10. Review of Systems

The depth of detail depends on the patient and the clinical setting. For example, when admitting a patient to the hospital or first meeting them in the office, the history should be extremely detailed, covering all of the items listed under “Content of the History and Physical Examination” on the following pages. This may easily take 1 or 2 hours for an inexperienced clinician (i.e. M2 student), and 30 to 45 minutes for a more experienced examiner.

On the other hand, in a subsequent visit with an office patient, a focused approach is more appropriate. In this case, the physician will usually concentrate on the chief complaint, the history of present illness, and a review of the pertinent systems. Such an encounter typically takes 10 to 30 minutes, including a focused physical examination and discussion of the treatment plan. In a subsequent visit with a hospitalized patient, similarly, a focused review is appropriate, with a special emphasis on the progression of symptoms/findings over the preceding 24-hours. In the event that an outpatient is new to the physician, it is appropriate to obtain key information about the past medical, social and family histories, resulting in a somewhat longer encounter. The baseline data in the social, personal, and family history can be obtained over several visits.

Content of the History and Physical Examination

On the following pages you will find a summary of the content of a history and physical examination. By
the final unit of the Clinical Medicine course, you will be expected to be proficient at obtaining this information in an efficient manner.

The first part of the medical interview (the Chief Complaint and History of Presenting Illness), is presented below. You will learn about the remainder of the medical interview (past medical history, past surgical history, medications/allergies, family history, and social history) in the subsequent SG sessions.

1. Chief Complaint (CC)
The major reason or reasons for the patient’s encounter with the physician, whether in the hospital or in the office, should be listed, followed by the duration of each complaint. To get this information, the physician should ask some variation of the question "What can I do for you today?", "How can I help you?" or "What is bothering you?" etc. Occasionally, a patient will present so many complaints that the physician will need to ask the patient to specify the two or three perceived to be the most serious at that time. Patients may also attempt to provide their own diagnoses such as "heart trouble" or "strep", rather than specific symptoms such as chest pain or sore throat. The physician should divert questioning to elicit the patient’s signs and symptoms.

Keep in mind that a symptom is what you elicit from the patient, a subjective statement; while a sign is an objective finding. For example, pain is a symptom and tenderness is a sign. Feeling warm is a symptom, an elevated temperature or fever is a sign. Dysuria (pain with urination) is a symptom, hematuria (blood in the urine) is a sign.

2. History of Present Illness (HPI)
This is the most critical part of the history. You should start by asking open-ended or exploratory questions to allow the patient to reconstruct her story in her own words and mention all of her concerns (an open-ended question is designed to encourage a full, meaningful answer using the subject's own knowledge and/or feelings. This is in contrast to a closed-ended question, which encourages a short or single-word answer). A common error students make is to focus in on only one of the complaints early in the interview and ignore other concerns and potential leads to the diagnosis. After the patient’s major concerns and complaints have been laid out, the student should ask more specific and focused questions to obtain a chronological history of that complaint (often closed-ended questions). A full HPI should contain the following elements:

A. Complete description of the chief complaint(s) or symptom(s)
Pain is a common complaint that brings patients to physicians and is a good example to be used for the analysis of the descriptors of a symptom. A convenient mnemonic for remembering the descriptors of any symptom is OPQRSTAAA:

- O - Onset
- P - Provocative/palliative factors
- Q - Quality
- R - Region/radiation
- S - Severity
- T - Temporal
- A - Associated Symptoms
- A - Attribution
- A - Ask

i) Onset
The time and mode of onset, and whether it was acute or gradual, should be noted. The setting or patient’s activities at the time of onset of each symptom should be mentioned, i.e. while watching TV, after shoveling snow, after finishing a 6-pack of beer, after completing a
ii) Provocative/palliative factors
Can the patient identify anything which makes the symptom better or worse, or any association of the symptom with activities, thoughts, maneuvers, etc.? Examples of associations include exertion, meals, menses, or deep inspiration. Techniques that the patient has used to decrease the pain must be stated, including the names and doses of medications used. A careful history of the patient's previous involvement with the health care system about this problem should be obtained, including providers seen, their working diagnoses, and the effects of therapies.

iii) Quality
It is important to ask the patient what the symptom feels like. Again, using pain as an example, has he or she ever had similar pain? If the patient has chronic or recurring pain, is this new complaint an intensification of the old pain or a different type of pain. If the patient is unable to describe the quality of the pain, it is often helpful to list several descriptive words to choose from or to stimulate his or her own choice, i.e. sharp, cutting, knife-like, burning, stinging, aching, crampy, boring, pounding, heavy, constricting, suffocating or gnawing. Patients often communicate quality by analogy, such as "it felt like an elephant was sitting on my chest", "my arm was on fire", or "like a toothache".

iv) Region/radiation
Ask the patient to localize the symptom (pain) as clearly as possible. Is it well-demarcated or diffuse? Determine if location has changed or is changing since its onset. Does the pain radiate to another region of the body? For example, does the chest pain go into the arm or up into the neck/jaw?

v) Severity (quantity)
It is necessary to understand how severe the symptom is. Intensity should usually be graded with a numerical or descriptive scale. It is often helpful to ask the patient to "rate the pain on a scale from 1 to 10, with 1 being barely noticeable and 10 being the worst pain you've ever experienced". The most severe pain experienced in females is often childbirth, and in males a kidney stone. Ask what his or her most severe pain ever was in order to anchor the scale, and how the current pain compares. Severity can also be gauged by determining how the symptom alters the patient's routines of daily living, or by asking what types of things the patient is unable to do because of it. For symptoms other than pain, it is often important to determine quantity, such as the number of loose stools, quantity of blood in the vomitus, or extent of a rash.

vi) Temporal characteristics
It is important to characterize precisely the duration of the symptom and at what level of severity. Duration should be listed as an estimate in terms of seconds, minutes, hours or days, and patterns noted regarding time of day. When pain or any symptom fluctuates in intensity, it is necessary to know whether the patient is completely asymptomatic during the quiet periods or whether the pain is still present but to a lesser extent.

vii) Associated Symptoms (aka Focused or Problem Pertinent Review of Systems)
The review of systems for the organ system in which the presenting complaint falls should be carried out, including a listing of all of the pertinent negatives. In addition, constitutional symptoms should be mentioned, including fever, chills, night sweats, fatigue, and weight change. The search for associated symptoms is guided by the interviewer's knowledge of
pathophysiology.

viii) Attribution (patient's perception of the illness)
An ill person develops thoughts, fantasies, and feelings about his or her ailment. Particularly in cases of chronic illness, the physician needs to understand the patient's own perception of his or her illness. Some questions to ask to get at this subjective understanding of the illness are listed below:

- What do you think is going on?
- What do you think has caused this problem?
- Why did you seek help today and not at some other point in time?
- How has your illness been affecting your life?
- What kind of treatment do you think you should receive?
- What do you fear most about your illness?

ix) Ask
This is the final opportunity in this section of the history for the interviewer to ask if there are additional details that the patient would like to provide, to determine if patient has additional questions or concerns, and provides an opportunity to review the elements of the history provided so far.

*(the structure of the medical history will be continued in SG 1)*

Documenting the Encounter
A complete, well-organized, and legible written or electronic record of the medical encounter is vital for quality patient care. You may not see the patient the next time they present to the office or hospital for care, and it is important that your colleagues have the information needed to make good clinical decisions. Documentation differs for the inpatient and outpatient settings.

In the inpatient setting, a detailed History and Physical (H&P) is used by the physician or medical student to record information about the patient at the time of admission. Laboratory and imaging studies, consultation reports, old records, and other information are added to the medical record as they are generated. Subsequent evaluations of the hospitalized patient (performed daily, and during significant events/times of deterioration) are documented using a progress note, organized in the S.O.A.P. format (see discussion later in this section).

In the outpatient setting, information about the medical history may be acquired over the course of several brief visits, especially if the patient initially presents to the physician with an acute problem such as a sore throat or urinary tract infection. In this case, critical information about the past medical history such as previous surgeries, current medication use, and allergies is obtained at the initial visit and recorded in a post-encounter note. Other details can be filled in during subsequent visits. However, if the patient’s visit is for a “check-up” or “physical exam”, the information acquired and the way it is recorded more closely resembles the complete H&P performed in the hospital.

Components of the Medical Record
1) **Demographic Data Section**—patient identifiers including age, race/ethnicity, as well as insurance/financial information pertinent to the patient.

2) **The Complete History and Physical Examination (H&P)**—a record of all the information obtained from a detailed interview and examination of the patient. This is most appropriate to record when admitting a patient to the hospital, or when a patient, particularly one new to the clinician,
presents to an outpatient office requesting a comprehensive evaluation or health maintenance visit.

3) **Progress or Post-Encounter Notes**—these notes are typically briefer than the H&P, focusing on a particular symptom or problem. Most commonly these are recorded in a **S.O.A.P.** format:

- **Subjective** – the focused history. A recording of what the patient tells you, either spontaneously, or in response to questions.
- **Objective** - the focused physical examination and relevant data from laboratory/diagnostic studies. A recording of what you see or observe related to the patient’s condition.
- **Assessment** - the problems identified and their differential diagnoses, presumptive diagnosis, prognosis and relationship to other problems. This section requires the clinician to process the information obtained in the preceding sections (S & O), and use their medical knowledge to identify problems and develop a list of the likely differential diagnoses for each problem, which are then recorded in the order of their importance.
- **Plan** - the orders for further workup, treatment, patient education, and follow-up. This is where you document what you intend to do for each of the items listed in the Assessment.

  *Note: the Assessment and Plan are often recorded together for each problem in the problem list. This allows for a more natural flow as the data is synthesized and a plan is formulated.*

This format is appropriate for recording subsequent encounters with the hospitalized patient after the complete H&P, or for recording information obtained during a problem-focused outpatient visit.

**SAMPLE S.O.A.P. NOTE:**

Date: 8/14/12

**S:** 25 y.o. female c/o dysuria and frequency x 6 days. No previous occurrence. No back or flank pain. No fever. LMP 2 weeks ago, normal flow and duration. Parents alive and well, 2 older brothers, 1 younger sister all healthy. Married, no children. NKDA.

**O:** T 98.8, Pulse 80, RR 14, BP 110/70. Abdomen soft, mild suprapubic tenderness, no masses or organomegaly, BS present. CBC: WBC 9.0. U/A: pH 5.0, SG 1.020, +blood. Micro 30-40 WBC/hpf, 10-15 RBC/hpf.

**A/P:** Uncomplicated cystitis, likely bacterial, no evidence of systemic infection - start Bactrim DS, one tab BID x 5 days. RTC in 2 weeks for re-check U/A. Patient education: encourage fluids, complete entire Rx even if Sx resolve.

Signed: A. Student, MS III (student)  
J. Doctor, M.D. (physician)

*Note: don’t be intimidated by the abbreviations and jargon used above - they will soon become second nature! Partial translation: c/o=complains of, dysuria=painful urination, LMP=last menstrual period, NKDA=no known drug allergies, T=temperature, RR=respiratory rate, BP=blood pressure, suprapubic=above the pubic bone, organomegaly=organ enlargement, BS=bowel sounds, U/A=urinalysis, WBC=white blood cells, hpf=high-powered field, RBC=red blood cells, BID=twice daily, RTC=return to clinic, Rx=prescription, Sx=symptoms.*

You will practice using the SOAP note throughout your four years of medical school.
4) **Nursing Notes**—Primarily found in hospital inpatient medical records, these documentations of nursing observations and activities related to a patient may be integrated into the section containing physician progress notes, or may be organized into a separate section of the hospital chart.

5) **Problem List**—A tabular listing of problems or diagnoses that have been identified for a patient. In the outpatient setting this is frequently divided into lists of chronic problems, acute problems, and routine health maintenance concerns such as Pap smears and mammograms. Sometimes this is listed as a separate entity in the chart, with items added as they arise over time. Otherwise it is simply perpetuated from note to note as the Assessment/Plan, and problems drop off as they resolve, and get added as new issues arise.

6) **Medication List**—A tabular list of the patient’s medications and, frequently, allergies or adverse reactions to medications. This list includes the dosages of medications prescribed, frequency of administration, and a comment on patient adherence. There is an additional record of the most recent quantities prescribed, and the number of refills of the medication that have been authorized.

7) **Laboratory**—Results of a patient’s tests performed in a clinical laboratory.

8) **Radiology**—A compilation of the results of a patient’s radiological and other imaging studies, including x-ray, Cat Scan, MRI, nuclear, and ultrasound reports.

9) **EKG**—Copies of electrocardiogram recordings and their interpretations.

10) **Operative Reports**—Descriptions of procedures that the patient has undergone.

11) **Consultations**—Reports of evaluations and assessments of the patient and their condition by a consulting physician.

These are only examples of typical divisions of the Medical Record. The number, location, organization, and appearance of each of these components within a patient chart will vary significantly from one hospital or office to another.

**Orientation to the Clinical Setting**

It is important that you familiarize yourself with the following guidelines for behavior in the clinical setting. These guidelines are in effect for all Wayne State University medical students in any clinical setting. Individual hospitals or preceptors may add to these guidelines by delineating in writing specific policies and procedures to be followed during the student's tenure at their clinical site. Individual preceptors are free to modify these guidelines for activities within the confines of the preceptor's office.

- Every student must be introduced and introduce him/herself as a "student doctor" or "medical student". **Under no circumstances may the student ever imply or assert that he or she is a licensed physician.** Students should not give their medical opinions to patients, without first consulting with their supervisor.
- Any note written by the student in or on any part of the patient's record or chart must be signed by the student with his or her name followed by "WSU1" or "MS1". Any note written by a medical student must be countersigned immediately by the licensed physician who supervised the student.
- Example:
  Jane/John Doe, MS1
Before any procedure is done by a student on a patient, the student must be authorized to do the procedure by the person supervising him or her in that clinical setting.

- Courtesy to patients and other health care professionals is expected at all times.
- Always address patients by their formal title (Mr., Mrs., Ms., or Miss) unless the patient requests that you do otherwise.
- Never discuss a patient's condition or care except in an approved setting with appropriate health care personnel. Open patient care areas are not good choices for discussions with colleagues.
- The WSU-SOM dress code requires students to dress professionally in clinical settings. Good grooming and meticulous personal hygiene are imperative at all times in a clinical setting. If in doubt, ask your supervisor. A short white coat is expected.
- A university ID badge must be worn in all institutional health care settings.
- Honesty and integrity are required of everyone.

---

Population, Patient and Physician- Part 1
Introduction to Public and Population Health

Self Study

Questions:

- How have public health efforts contributed to overall health status in the United States?
- What is the role of government in health care delivery in the United States?
- What are key indicators of health for populations?

Learning Objectives:

1. List 5 important public health achievements in the last century.
2. Describe how to find the major causes of morbidity and mortality for your population and for other geographic locations in the United States.
3. Name 3 important modifiable risk factors.
5. List 4 non-physiological influences that determine health status.
6. Provide a general overview of the divisions, characteristics and roles of Federal Public Health Agencies.
7. Discuss methods of financing of public health services.
8. Describe the process of health policy-making, i.e. local, state, federal governments and the methods for participation in the policy process, i.e. advocacy, advisory processes.
9. Discuss the impact of policies on health care and health outcomes including impacts on vulnerable populations.
10. Provide a general overview of the organization of clinical and public health systems and clinical health services, i.e. continuum of care – hospital, ambulatory, home, long-term care.

Key Points:

- The control of infectious diseases is due mainly to advances in sanitation and hygiene practices.
- Vaccination campaigns have almost eliminated many diseases that were quite common in the United States.
- Tobacco use remains a public health challenge because of the higher prevalence of cigarette smoking among adolescents.
The reduction of health disparities has been a Healthy People 2020 goal for 20 years. Progress is being made in some areas; however, the health of African Americans and other historically underserved populations is often at lower level than White Americans.

**Assignment:**
Read the attached self-study reading and watch the videos.
Respond to the questions at the end of the section.
Introduction to Public and Population Health

The interaction between genetic, environmental, and social factors is critical to understanding, preventing, and treating disease. Since the ten leading causes of death in the United States are associated with preventable risk factors, practicing clinical prevention will improve patients’ health and quality of life. Thus, an understanding of clinical prevention and knowledge of population health will be critical to the practice of medicine in the 21st century.

Over the next four years, you will learn about clinical prevention and population health in the Population, Patient and Physician (P3) course, in third year clerkships, and fourth year rotations. This self-study provides you with an introductory knowledge foundation about public health and preventive medicine, as well as how to assess your patient population’s health status.

WHAT IS PUBLIC HEALTH?
For many, the concept of health is usually attributed to a medical professional – most often a physician. When people are sick, they seek medical care to regain their health. However, there is a side of health that many do not see, but are directly affected by – public health. This section provides an outline that defines public health, its role, and its relationship with medicine.

Public health addresses the health of the population as a whole, rather than medical health care, which focuses on treatment of the individual ailment. In 1988, the Institute of Medicine (IOM) defined the mission of public health as “fulfilling society's interest in assuring conditions in which people can be healthy.” The IOM’s recent (2011-2013) series of reports entitled For the Public’s Health 2-4, which center on measurement, laws and funding takes the role of public health to a new dimension. It builds upon the previous definition, acknowledging the many actors in assuring public health including government public health agencies, health care delivery systems, public health and health sciences academia, communities, business, employers and media. A partial list of components to assure conditions for population health is:

- Preventing epidemics and the spread of disease
- Protecting against environmental hazards
- Preventing injuries
- Promoting and encouraging healthy behaviors
- Responding to disasters and assisting communities in recovery
- Assuring the quality and accessibility of health care for underserved populations

WHAT IS POPULATION HEALTH?
Population health is similar to public health but is now more commonly used in the setting of healthcare. Population health often is defined as “the health outcomes of a group of individuals, including the distribution of outcomes within the group”. Often healthcare organizations use the term “population health” to describe the disease burden and outcomes of patients enrolled in a given health plan. However, defining a population simply by its healthcare plan draws attention from other factors, such as social and environmental, that may be influencing health. There is a need; however, for public health agencies and medical care systems to collaborate in the use of clinical data to inform relevant population health priorities.

PUBLIC HEALTH vs. MEDICINE
Public/population health and medical health have many differences, yet both use data to perform their jobs. Medical personnel look at information to treat disease, while public health personnel look at information to develop methods to prevent disease occurrence. The following table shows some of the key differences in the attributes of public health and medicine.

Exhibit 1: Key Differences Between the Attributes of Medicine and Public Health
Despite the differences between medical and public health, the two have often worked together to solve many health needs. In the past, medical and public health practitioners had a much stronger working relationship than they do today, as neither could address the problems of infectious diseases without the other. Most importantly, public health needed the vaccines developed by physicians. Public health also needed the influence of physicians on policy makers and the public to institute sanitary reforms and establish health boards. Physicians needed public health workers to address the causes of infectious disease. It is only during the last sixty years that the two professions have maintained independence from one another. Now, in the face of many new and complex health related issues, including the emphasis on population health, the two professions are beginning to find usefulness in collaboration.

**WHAT ARE PUBLIC HEALTH DATA?**
Public health data are central to public health’s mission of improving health and preventing disease, injury and disability. Each of the programs or domains addressed through public health rely on data to inform program design, monitor progress, fulfill reporting requirements, bill for services, evaluate programs and/or inform policy decision-making. Public health data are much broader than clinical data; they exist across a public health system and include environmental, socio-cultural, economic, vital statistics, and survey data. For example, much of the success in lowering the incidence of lead poisoning can be attributed to the use of multiple sources of public health data that reside both in and outside of public health agencies (i.e. public health environmental data, clinical laboratory data, encounter data from mental health professionals, and housing data).

**HOW DO HEALTH DATA BECOME HEALTH STATISTICS?**
Health statistics are numerical data that characterize the health of a population and the factors that influence its health. Health statistics are distinguished by their focus on quantification, aggregation of data from observations on individuals, their communities, and the context of their communities, and population health and the influences on it. The data are collected through surveillance programs usually administered at the State level. Frequently used data definitions or standards for health statistics include: incidence rate, mortality rate, prevalence, and proportion. These indicators transform raw data about individuals to aggregate information about specific populations.

**Function of Public Health**
Since 1988, the Institute of Medicine describes three core functions of public health that help to define the roles and responsibilities of public health agencies: These core functions and the essential services related to them are in the table below and displayed graphically in the figure.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Medicine</th>
<th>Public Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary focus of concern</td>
<td>Health of specific individuals</td>
<td>Health of populations/communities</td>
</tr>
<tr>
<td>Primary health improvement strategy</td>
<td>Treatment of disease or injury with secondary emphasis on prevention</td>
<td>Prevention of disease or injury</td>
</tr>
<tr>
<td>Intervention context and scope</td>
<td>Clinical and surgical encounters and medical/surgical treatment; preventive interventions within the context of each professional discipline (i.e. pediatrics), with focus on one or a few points in the causal chain</td>
<td>Any and all vulnerable points in the causal chains; prevention approach not predetermined by professional discipline, but rather by the effectiveness, expediency, cost and social acceptability of intervention</td>
</tr>
<tr>
<td>Operational context</td>
<td>Operation through private practices, clinics, hospitals, with governmental direction primarily in terms of quality assurance</td>
<td>Operation within a governmental context requiring responsiveness to legislative, regulatory, and policy directives</td>
</tr>
</tbody>
</table>

### Exhibit 2: Core Functions and Essential Services of Public Health

<table>
<thead>
<tr>
<th>Core Function</th>
<th>Essential Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment</strong></td>
<td>- Monitor health status to identify community health problems</td>
</tr>
<tr>
<td></td>
<td>- Diagnose and investigate health problems and health hazards in the community</td>
</tr>
<tr>
<td><strong>Policy Development</strong></td>
<td>- Inform, educate, and empower people about health issues</td>
</tr>
<tr>
<td></td>
<td>- Mobilize community partnerships to identify and solve health problems</td>
</tr>
<tr>
<td></td>
<td>- Develop policies and plans that support individual and community health efforts</td>
</tr>
<tr>
<td></td>
<td>- Enforce laws and regulations that protect health and ensure safety</td>
</tr>
<tr>
<td><strong>Assurance</strong></td>
<td>- Link people to needed personal health services and assure the provision of health care when otherwise unavailable</td>
</tr>
<tr>
<td></td>
<td>- Assure a competent public health and personal health care workforce</td>
</tr>
<tr>
<td></td>
<td>- Evaluate effectiveness, accessibility, and quality of personal and population-based services</td>
</tr>
<tr>
<td><strong>All Core Functions</strong></td>
<td>- Research for new insights and innovative solutions to health problems³</td>
</tr>
</tbody>
</table>

---

Exhibit 2: Essential Public Health Services
MAJOR ACCOMPLISHMENTS IN PUBLIC HEALTH

The roles of public health are easier to understand by reviewing some of the major achievements over the last two centuries. Examples of major accomplishments in public health include the following:

**Immunization**

In the early 20th Century, polio epidemics began to spread throughout the United States. From 1910 to 1914, the number of polio cases was 6 per 100,000 population. By 1952, the rate had increased to 37 cases per 100,000 population. In 1955, an oral vaccine to the disease was offered to the public. The result was the virtual elimination of the disease in the United States by 1979. Though a success of medicine, public health was instrumental in getting the vaccine to people throughout the country. Through immunization programs nationwide, public health workers continue to reach large numbers to prevent diseases.

**Sudden Infant Death Syndrome**

Various reports from other countries showed a relationship between a prone sleeping position for infants and a higher incidence of Sudden Infant Death Syndrome (SIDS). Using this research, the American Academy of Pediatrics (AAP) recommended that healthy infants should be placed on their sides or back to sleep. The work of the AAP in conjunction with the National Back to Sleep Campaign in 1994 resulted in a 30% drop in SIDS rates from 1992 to 1995.

**Lead Poisoning**

Lead containment efforts since the 1970’s have resulted in the mean blood lead level of U.S. population falling by 78%, and the number of children aged 1-5 years with elevated blood lead declining nearly ten-fold. These changes did not occur spontaneously or by chance. Strict regulation of many lead uses has gradually detoxified the air, water, and food supply. It is clear that controlling ongoing sources of lead exposure produces immediate and significant health benefits; however, given the recent events in Flint, MI, we must all recognize how fragile the containment of lead contamination can be. The deteriorating state of the U.S. infrastructure could easily lead to other geographic areas suffering lead contamination in the near future. Furthermore, there remains significant disparities in the lead burden with the percentage of non-Hispanic Black children with elevated levels being higher than Mexican-American children and non-Hispanic White children.

References

2. Institute of Medicine, Committee on Public Health Strategies to Improve Health, Board on Population Health and Public Health Practice for the Study of the Future of Public Health (2011). *For the Public’s Health: The role of measurement in action and accountability*. National Academies Press, Washington DC. Available at: [http://www.nap.edu/read/13005/chapter/1](http://www.nap.edu/read/13005/chapter/1)
PUBLIC HEALTH ENTITIES

Excerpted from the Public Health Data Standards Consortium, http://www.phdsc.org/

What is the Structure and Function of Government Public Health Agencies?
Among government agencies, the responsibility for the public health of the country is divided among the federal, state, and local entities. This module describes the different characteristics and roles of local, state, and federal public health agencies.

Local Public Health Agencies (LPHA)
"According to the National Association of County and City Health Officials (NACCHO), a Local Public Health Agency (LPHA) is defined as "an administrative or service unit of local or state government, concerned with health, and carrying some responsibility for the health of a jurisdiction smaller than the state." Over two-thirds of LPHAs serve jurisdictions with less than 50,000 people. Less than five percent serve jurisdictions with more than 500,000 people.

NACCHO created five categories to describe the variation in LPHAs:
1. **County**: These are the most common type of LPHA and are responsible for only one county. The size of county-based LPHAs varies depending on the size of the county (i.e. a small rural county vs. Los Angeles County).
2. **City**: These LPHAs are responsible for a municipality, covering the geographic boundaries of a city.
3. **City-County**: In some cases, counties and cities jointly provide public health services. In these cases, health departments may have dual reporting requirements – both to city and county officials.
4. **Town/Township**: Serves the geographic region of a township.
5. **Multi-county**: LPHAs of this nature are responsible for multiple counties. In some cases, they operate much like County LPHAs, but with more than one county.


The degree of autonomy an LPHA has from the state in which it resides influences administrative reporting relationships. The sources of funding and levels of expenditure are largely based on whether the LPHA is located in a Metropolitan Statistical Area (MSA) or not.

Roles of Local Government Public Health Agencies
LPHAs serve as the "front line" of public health agencies. While state and federal public health agencies perform a mix of direct services, oversight, and planning, LPHAs’ attention is focused on delivering services. LPHAs provide a number of services within their area of jurisdiction. These activities include:

- Adult and childhood immunizations
- Communicable disease control
- Lead poison prevention
- Community needs assessment
- Community outreach and education,
- Environmental health services,
- Epidemiology and surveillance programs,
- Food safety, and restaurant inspections.

LPHAs are also responsible for conveying information to state and national levels. This information includes local needs and priorities, mandatory reporting, and the effects of programs and policies. Examples might include incidence of HIV/AIDS, the effects of a lead screening program, or the results of community needs assessment to examine public maternal and child health needs. With this information, state and federal agencies can examine large amounts of data and isolate important trends. Without this data transfer, many state and federal agencies would be without access to information critical to making
policy decisions.

**State Government Public Health Agencies**

Every state in the country has an agency responsible for public health activities. However, how each agency operates and its location in the state government varies from state to state. In some cases, the state agency responsible for public health is an independent department. In other states, the public health agency is part of a larger, "umbrella" department that provides human services as well.

State government public health agencies are often responsible for management of federal government programs and funding streams at the state and local level, such as the Maternal and Child Health (MCH) block grant program (Title V Block Grant program funded by the Health Resources and Services Administration (HRSA) to states to administer to the underserved), the Women, Infants, Children (WIC) nutrition program (Special Supplemental Program administered by USDA), vital records, and most recently, bioterrorism and emergency preparedness.

In many cases, state government public health agencies have the ability to develop and enforce regulations, i.e. seatbelt laws, laws to protect the privacy of information, etc. (sometimes, state public health agencies are unable to develop certain regulations due to federal rules/laws). The creation of such regulations may be required by legislative statute or may be the prerogative of the agency director. The agency may be responsible for monitoring compliance with regulations and seeking action against those who are not in compliance.

**Roles of State Government Public Health Agencies**

State public health agencies fulfill three core functions: assessment, policy development, and assurance. To carry out the core functions, states agencies:

- Encourage, provide assistance, or require local governments and/or private providers to perform certain functions
- Provide certain services directly
- Fund or channel funds from federal sources
- Assist in the management and reporting requirements of state and/or federally funded programs
- Use authority to ensure that public health goals are met, including achieving Healthy People 2020 objectives
From state to state, the specific activities for state government public health agencies vary. However, most state agencies are responsible for at least some of the following activities:

- Maternal and child health care
- Nutrition
- Vital records
- Immunization
- HIV/AIDS
- Infectious disease surveillance
- Prevention programs (i.e. adolescent school health, injury prevention and control, tobacco prevention and control)
- Environmental health;
- Public health informatics
- Preparedness policy

**Federal Public Health Agencies**
The U.S. Department of Health and Human Services (DHHS) is responsible for the majority of the public health programs and initiatives conducted by the federal government. The Public Health Service is the lead agency within DHHS with regard to these activities. The Public Health Service is made up of the Office of Public Health and Science (including the Surgeon General) and nine operating divisions, all of which report to the Secretary of DHHS. The nine operation divisions are described below. These offices are the primary contributors to federal government activities in public health.
<table>
<thead>
<tr>
<th>Federal Agency</th>
<th>Agency Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency for Healthcare Research and Quality (AHRQ)</td>
<td>AHRQ supports research designed to improve the outcomes and quality of health care, reduce its costs, address patient safety and medical errors, and broaden access to effective services. The research sponsored, conducted, and disseminated by the AHRQ provides information that helps people make better decisions about health care. <a href="http://www.ahrq.gov/about/profile.htm">http://www.ahrq.gov/about/profile.htm</a></td>
</tr>
<tr>
<td>Agency for Toxic Substances and Disease Registry (ATSDR)</td>
<td>ATSDR performs specific functions concerning the effect on public health of hazardous substances in the environment. These functions include public health assessments of waste sites, health consultations concerning specific hazardous substances, health surveillance and registries, response to emergency releases of hazardous substances, applied research in support of public health assessments, information development and dissemination, and education and training concerning hazardous substances. <a href="http://www.atsdr.cdc.gov/about/index.html">http://www.atsdr.cdc.gov/about/index.html</a></td>
</tr>
<tr>
<td>Centers for Disease Control and Prevention (CDC)</td>
<td>CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States. <a href="http://www.cdc.gov/aboutcdc.htm">http://www.cdc.gov/aboutcdc.htm</a> The CDC is made up of 12 centers, including the National Center for Health Statistics, the agency responsible for compiling statistical information to guide actions and policies to improve health. <a href="http://www.cdc.gov/nchs/about.htm">http://www.cdc.gov/nchs/about.htm</a></td>
</tr>
<tr>
<td>Food and Drug Administration (FDA)</td>
<td>The FDA promotes and protects the public’s health by helping safe and effective products reach the market in a timely way, and monitoring products for continued safety after they are in use. <a href="http://www.fda.gov/opacom/hpview.html">http://www.fda.gov/opacom/hpview.html</a></td>
</tr>
<tr>
<td>Health Resources and Services Administration (HRSA)</td>
<td>HRSA works to increase the availability of quality health care to low income, uninsured, isolated, vulnerable and special needs populations and meets their unique health care needs. <a href="http://www.hrsa.gov/index.html">http://www.hrsa.gov/index.html</a></td>
</tr>
<tr>
<td>Indian Health Service (IHS)</td>
<td>The IHS provides a comprehensive health services delivery system for American Indians and Alaska Natives with opportunity for maximum tribal involvement in developing and managing programs to meet their health needs. <a href="http://www.ihs.gov/PublicInfo/PublicAffairs/Welcome_Info/ThisFacts.asp">http://www.ihs.gov/PublicInfo/PublicAffairs/Welcome_Info/ThisFacts.asp</a></td>
</tr>
<tr>
<td>National Institutes of Health (NIH)</td>
<td>The mission of NIH is science in pursuit of fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to extend healthy life and reduce the burdens of illness and disability. The NIH is made up of 27 institutes and centers. <a href="http://www.nih.gov/about/">http://www.nih.gov/about/</a></td>
</tr>
<tr>
<td>Program Support Center (PSC)</td>
<td>The PSC is charged with providing a full range of program support services to all components of DHHS focusing primarily on products and services in the following areas: Human Resources; Health Resources; Administrative Services; and Financial Management. <a href="http://www.psc.gov/">http://www.psc.gov/</a></td>
</tr>
<tr>
<td>Substance Abuse and Mental Health Services Administration (SAMHSA)</td>
<td>SAMHSA is charged with improving the quality and availability of prevention, treatment, and rehabilitative services in order to reduce illness, death, disability, and cost to society resulting from substance abuse and mental illnesses. <a href="http://www.samhsa.gov/index.aspx">http://www.samhsa.gov/index.aspx</a></td>
</tr>
</tbody>
</table>

In addition to the aforementioned operating divisions within the Office of Public Health and Science, other federal agencies contribute to public health. The Centers for Medicare and Medicaid Services (CMS) is responsible for operation of Medicare, Medicaid, and the State Children’s Health Insurance Program (SCHIP). Through Medicare, Medicaid, and SCHIP, CMS is involved with public health as a funder for these programs, which are often administered in coordination with public health agencies.

The Environmental Protection Agency (EPA) is the federal agency responsible for many environmental programs and regulations. As a result, the EPA works closely with public health agencies and state environmental protection agencies to solve environmental health problems. The Social Security Administration (SSA) also plays important roles in public health, including disability determination and supporting electronic death registration systems. Finally, the U.S. Department of Agriculture (USDA) operates the Women, Infants, and Children (WIC) nutrition program.

Over time, these agencies, as well as others, have developed working relationships to achieve their overlapping public health goals. For example, many federal agencies participate in Healthy people 2020 to...
set objectives for the health of the nation. Many of these organizations are also working together to comply with the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Roles of Federal Public Health Agencies
The federal agencies and offices responsible for public health activities take on numerous roles, in some cases directly running programs, in part through grant making, and in others providing assistance to those local and state agencies working on the ground in many different ways.

- **Policy Making:** This function involves initiating, shaping, and implementing congressional and presidential decisions. In addition, DHHS also conducts policy-making activities on its own. The privacy provisions created to comply with HIPAA are an example.
- **Financing Public Health Activities:** DHHS provides funding to state and local public health agencies through grants, contracts, and reimbursements. One of the sources is HRSA.
- **Public Health Protection:** In this role, DHHS assesses health risks and then sets and enforces standards and regulations to protect the public from those risks. The FDA regulates drugs in this way.
- **Collecting and Disseminating Information:** Agencies within DHHS are responsible for collecting data and maintaining data systems, setting standards, making data available for public use, and informing policy. For example, the National Center for Health Statistics (NCHS) fields several major national health surveys annually and supports the Vital Statistics Cooperation Program.
- **Capacity Building for Public Health:** In this role, DHHS works to ensure that the federal, state, and local public health agencies are equipped to carry out their activities.
- **Direct Management Services:** The Indian Health Service provides direct medical care to Native Americans who are members of federally recognized Indian tribes.
**MEASURES OF PUBLIC and POPULATION HEALTH**

Historically mortality rates and life expectancy have been the measures of health in a given population. Yet some diseases can lead to morbidity for many years without causing death. These causes of morbidity should be captured to complete the health picture. It is possible to have longer life expectancy but poorer overall population health. Moreover, some population groups experience poorer life expectancy as well as more morbidity as compared to other groups. Hence, Healthy People 2020’s overarching goals are to 1) attain high-quality, longer lives free of preventable disease, disability, injury and premature death; and 2) achieve health equity, eliminate disparities, and improve the health of all groups.

Common measures of public/population health include:
- Incidence rates for diseases
- Mortality rates for disease
- Prevalence of disease

To understand the important difference between incidence and prevalence, view the following video, which gives an excellent overview of this often tested subject on USMLE Step 1: [https://www.youtube.com/watch?v=QGAx-craer4](https://www.youtube.com/watch?v=QGAx-craer4)

Also available are measures of behavioral/disease risk factors, such as:
- Percentage of adult smokers
- Percentage of adults with obesity
- Percentage of children who receive childhood vaccinations

These measures can often be found for different geographic areas, including for counties (sometimes cities), all the way up to the entire nation. Here are some sites for looking up morbidity, mortality and behavioral risk factors for population health data.

For Michigan data as compared to U.S. see Michigan Department of Health and Human Services webpage, which are interactive and can be viewed for entire state or county or city of Detroit because the data are collected by the local public health department.

Info on hospitalizations: [http://www.michigan.gov/mdhhs/0,5885,7-339-73970_2944_5324---,00.html](http://www.michigan.gov/mdhhs/0,5885,7-339-73970_2944_5324---,00.html)

Info on chronic disease: [http://www.michigan.gov/mdhhs/0,5885,7-339-73970_2944_67827---,00.html](http://www.michigan.gov/mdhhs/0,5885,7-339-73970_2944_67827---,00.html)

Info on mortality: [http://www.michigan.gov/mdhhs/0,5885,7-339-73970_2944_4669_4686---,00.html](http://www.michigan.gov/mdhhs/0,5885,7-339-73970_2944_4669_4686---,00.html)
Public Health Self Study Assignment:
Answer the following questions on Blackboard

1. Which of the following is NOT considered a major accomplishment of public health over the past two centuries?
   a. Nation-wide immunization programs
   b. Awareness of the dangers of smoking tobacco
   c. Reduction of morbidity from diabetes
   d. Regulation of lead in the environment
   e. Reduction in childhood lead poisoning

2. Which one of the following is LEAST likely to fit with the ten essential services of public health?
   a. Provide treatment for patients diagnosed with HIV/AIDS
   b. Provide health care access for the uninsured in the United States
   c. Require State licensing of physicians, nurses and mental health therapists
   d. Provide smoking cessation patient education literature
   e. Promote condom use among teenagers

3. Which of the following is listed as a significant opportunity for improvement in population health for the 21st Century?
   a. Increased immunization rates for small pox
   b. Increased immunization rates for polio
   c. Further reduction in sources of environmental lead
   d. New treatments for vascular diseases
   e. Prevention and management of dementia

4. Which of the following is an area in which both medicine and public health intersect?
   a. Operate through private practices
   b. Focus on one point in the causal chain
   c. Health of specific individuals
   d. Prevention
   e. Treatment

5. Which of the following is a true statement?
   a. Public Health data are more specific than clinical data
   b. Health statistics transforms raw data about individuals to aggregate information about specific populations
c. A weakness of public health data is that they cannot incorporate environmental or socio-cultural data.

d. A frequently used data standard is significance.

6. A young American Indian mother has brought her colicky infant to Dr. Francis, a pediatrician. During the examination of her child, she asks his opinion about the use of star anise tea for her child. A neighbor, who has four children, told her that star anise tea helped to calm her children when they were colicky. Dr. Francis is very supportive of complementary and alternative medicine practices, but he has never heard about star anise. Which agency web site will provide information about star anise tea to him most quickly?

   a. Agency for Toxic Substances and Disease Registry
   b. NIH National Center for Complementary and Alternative Medicine
   c. Indian Health Service
   d. Administration for Children and Families

7. Dr. Aneboughdie, the father of a 14-year-old, heard a news report about increased risks of suicidal ideation and attempts associated with use of certain antidepressants in pediatric patients. He decided to use a government web site to determine whether the medication that his child was prescribed was one of the drugs in the reported study. Based on the brief descriptions of these agencies in the Self-Study assignment, which governmental web site would be the BEST for him to use for the information he is seeking?

   a. Substance Abuse and Mental Health Services Administration
   b. Agency for Toxic Substances and Disease Registry
   c. Centers for Disease Control and Prevention
   d. Food and Drug Administration

8. Which of the following government agencies is focused on delivering services?

   a. Centers for Disease Control and Prevention
   b. Centers for Medicare and Medicaid Services
   c. Local Public Health Agency
   d. Health Resources and Services Administration

9. The two overarching goals of Healthy people 2020, the nation's public health agenda, are to:

   a. Improve surveillance and improve health status
   b. Reduce death, disease, disability, and risk factors
   c. Increase quality and years of life and eliminate health disparities
   d. Expand preventive health services and reduce health risks

ADD QUESTIONS
Self-Study

Question: What is “Professionalism” and how does it apply to me as a doctor-in-training and as a future physician?

Key Points:
- Defining and measuring professionalism of physicians has become an area of increasing study and scrutiny in recent years.
- There is currently no single agreed-upon definition, although most proposed definitions share many features.
- The components of professionalism most frequently cited by experts are: integrity, compassion, altruism, continuous improvement, excellence, collaborative

Learning Objectives:
- Define Professionalism
- Begin the process of developing a personal definition of professionalism
- Reflect on “personal” examples of ideal professional behavior and/or unprofessional behavior

Self-Study Assignment
1. Complete the Professionalism case scenarios at the end of this section.
2. Working within your preassigned groups of 6 students give examples of each tenet of professionalism (altruism, accountability, excellence, duty, honor and integrity, respect for others) and a brief reflection on the meaning of that tenet to them. Each group member will need to turn in their portion separately. This assignment is due on Blackboard Thursday, December 8, 2016.
OVERVIEW OF PROFESSIONALISM

In recent years there has been an increased interest in defining and measuring **Professionalism** for physicians and physicians-in-training. This module reviews several definitions. Although there is a general sense that “we will know professionalism when we see it,” there is not a universally agreed upon definition. As you read each definition, compare the various attributes contained in each definition, and reflect upon those attributes that would comprise your own personal definition of Professionalism. You are encouraged to discuss these definitions with your small group instructor and fellow medical students.

You have already been exposed to the topic of professionalism during Year 1 Orientation. The School of Medicine has a Professionalism Committee and professionalism policies. Reprinted below are two statements you have already recited that relate to professionalism of medical students and practitioners.

**Declaration Of Commitment**

I solemnly pledge myself to consecrate my life to the service of humanity;
I will give to my teachers the respect and gratitude which is their due;
I will develop my skills with conscience and dignity;
The health of my patients and myself will be my first considerations;
I will respect those things that are confided in me;
I will maintain by all the means in my power, the honor and the noble traditions of the medical profession;
My colleagues will be my comrades;
I will not permit considerations of religion, nationality, race, party politics, sexual orientation or social standings to intervene between my duty, my peers, and my patients;
I will maintain the utmost respect for human life and I will not use any medical knowledge contrary to law;
I make these promises solemnly, freely and upon my honor.

*Adopted from Declaration of Geneva and the International Code of Medical Ethics.*

**Oath of Academic Integrity**

As a part of a community of medical students, I know that my instructors and fellow students have placed their trust in my academic and professional integrity. I recognize the importance of helping each other as we struggle. Dishonesty within a medical school, however, affects not only the student, but also the reputation of the institution, and potentially our future patients. In view of this, I hereby vow to pursue my studies with integrity and conscience. I will not accept dishonesty among my peers and pledge to honor that trust that my instructors and fellow classmates have placed in me.

As a future physician, my patients and colleagues will entrust to me matters of a sensitive and confidential nature. In some circumstances, their very lives will depend upon my integrity. I will respect their faith in me and will maintain the level of dignity and honesty that medicine demands. From this day forward, I will keep honor in this profession.
Defining Professionalism

American Board of Internal Medicine’s Definition of Professionalism--Excerpts from Project Professionalism (http://www.abim.org)

Professionalism in medicine requires the physician to serve the interests of the patient above his or her self-interest. Professionalism aspires to altruism, accountability, excellence, duty, service, honor, integrity and respect for others.

Altruism is the essence of professionalism. The best interest of patients, not self-interest, is the rule.

Accountability is required at many levels – individual patients, society and the profession. Physicians are accountable to their patients for fulfilling the implied contract governing the patient/physician relationship. They are also accountable for addressing the health needs of the public and to their profession for adhering to medicine’s time-honored ethical precepts.

Excellence entails a conscientious effort to exceed ordinary expectations and to make a commitment to life-long learning. Commitment to excellence is an acknowledged goal for all physicians.

Duty is the free acceptance of a commitment to service. This commitment entails being available and responsive when “on call.” accepting inconvenience to meet the needs of one’s patients, enduring unavoidable risks to oneself when a patient’s welfare is at stake, advocating the best possible care regardless of ability to pay, seeking active roles in professional organizations, and volunteering one’s skills and expertise for the welfare of the community.

Honor and integrity are the consistent regard for the highest standards of behavior and the refusal to violate one’s personal and professional codes. Honor and integrity imply being fair, being truthful, keeping one’s word, meeting commitments, and being straightforward. They also require recognition of the possibility of conflict of interest and avoidance of relationships that allow personal gain to supersede the best interest of the patient.

Respect for others (patients and their families, other physicians and professional colleagues such as nurses, medical students, residents, and subspecialty fellows) is the essence of humanism, and humanism is both central to professionalism, and fundamental to enhancing collegiality among physicians.
Professionalism Case Scenarios

Photography Ethics

Mark and Susan are two medical students on a clinical breast cancer rotation at a hospital in Detroit. While rounding with the healthcare team, they stop to evaluate a young female patient with a visibly fungating breast mass. Since it is his first time seeing a fungating breast mass, Mark brings out his camera phone to take a head-to-toe photograph of the patient while the rest of the team discusses her management. While Mark is chatting with Susan after rounds, Susan expresses her concern that Mark may have violated the patient’s privacy by taking her picture without obtaining her consent and without making an effort to disguise her identity.

Susan says that she thinks it was inappropriate to take the photo during rounds, when Mark should have been participating in the team’s discussion. She also worries that, as a result of Mark’s actions, the team and other patients on the ward may now have a negative impression of them. Mark is taken aback by Susan’s comments and explains that he took the picture to highlight late stage breast cancer and the need for affordable routine screening for all women on his online blog. “I want to increase awareness of health issues in resource-poor settings,” he explains.

Questions for Thought:

1. What might be a student’s motivations for taking pictures of patients during a clinical elective abroad?

2. Was it appropriate in this case for Mark to photograph the patient? Would your opinion be different if:
   a. ...Mark had asked the opinion of the local clinical team before he took the photograph?
   b. ...Mark had not included the patient’s face in the photograph?
   c. ...Mark had intended to use the photograph in a different way?

Discuss the following scenarios in which such a photograph could be displayed (and any others that you can think of): in a class presentation on cancer among the underserved, on a social networking website, on a personal blog, or on a University website to advertise the clinical rotation program?

3. What comprises informed consent in this setting? How could Mark have obtained informed consent?

4. How might the selection of photographs a student chooses to take influence stereotypes and perceptions of healthcare and people in underserved area?

The Why, When, How, Who, and Where of Patient Photography in Clinical Settings

1) Why: Why am I taking this picture? Will the picture be used for education, advocacy, or personal gratification?

2) When: Am I taking this picture at an appropriate time?

3) How: Have I obtained consent from the patient in a respectful, appropriate and culturally sensitive way? Have I explained to the patient how this picture will be used as part of the consent process? Am I going to take the picture in a way that protects the patient’s dignity and identity? Is there a specific reason why the patient’s face needs to be in the picture, or can the patient’s identity be concealed? If the patient’s identity is not concealed, has the patient consented to this?
4) **Who:** Is this the most appropriate patient to photograph in order to achieve the goal of the picture? In addition to having had the consent discussion with the patient, does my institution or the host institution require documentation of consent in a certain way?

5) **Where:** Where will I be posting or distributing the photograph?

---

**Professional Ethics in a Global Setting #1 - Limits on clinical work**

Maya is a student rotating on an infectious disease ward in Indonesia. In the first few days, she realizes that she is frequently left alone to care for patients, as there are few physicians available to supervise her. Maya is anxious, as she feels she is providing care beyond her capabilities, and brings these concerns to the Chief of Services, who explains, “This is the best training you could be getting in global health! We depend upon our foreign colleagues to help with short staffing.

Questions for Thought:
1. How would you feel in this situation? What would you do?
2. Would your perspective on this situation vary depending on the type of care required (e.g., blood draws, lumbar punctures, medication prescriptions)?
3. How could a situation like this be prevented?
4. What kinds of clinical responsibilities are appropriate for medical students on international electives?

---

**Professional Ethics in a Global Setting #2 - Burdens on the Host**

While in Honduras for a clinical rotation in a busy public hospital, Nisha relies on the residents to explain patients to her because she is unfamiliar with conditions there. Although she had taken a course in Spanish in preparation for her rotation, Nisha also requires frequent assistance from the staff with interpretation.

One day Nisha becomes frustrated when caring for a patient who has been waiting one week for the surgical team to debride her leg wound. Nisha approaches the surgical resident to discuss the situation, and the conversation elevates to an argument. Nisha asks the resident what the plan is if the patient cannot get a consultation. The resident becomes angry: "That's what's wrong with you people!" "You people?" Nisha interrupts angrily. "What do you mean,'you people'?'" "I mean you visiting students! You come in here without knowing how things work, what the procedures are, and expect everyone to oblige you and translate for you. I have sixty patients to take care of and I'm already spending too much time talking about this one!"

Questions for Thought:
1. This case considers perceptions towards medical students visiting from another country. How do you think Nisha was perceived?
2. How do you think you will be perceived if you go on an international rotation?
3. How will you anticipate and respond to this?
4. What do you expect to be the balance of what you will contribute versus what you will take away from this experience?
5. Nisha faced an ethical dilemma in striving to advocate for the patient but simultaneously
coming at odds with the resident. How might she seek to resolve this dilemma?

6. In the case above, Nisha’s role as a member of the clinical team was unclear. What role might a student play in this clinical setting, with regards to the staff and to patients? Might this role differ depending on the location?

Thursday, October 27, 2016

8:00 am – 12:00 pm (as assigned for your small group)

Small Group 1
- Interviewing
- The Medical History: The Chief Complaint (CC) & History of Present Illness (HPI)

Question: What is the Patient-Centered Clinical Method?

Key Points:
- The Patient-Centered Clinical Method (PCCM) enhances the doctor/patient relationship
- The PCCM leads to greater patient and physician satisfaction
- The format to the medical interview is quite structured and begins with the Chief Complaint and History of Present Illness
- Taking an organized medical history often provides the key to diagnosis

Learning Objectives:

1. Meet and greet session with your new colleagues
2. Review the basic elements of the medical history and medical record emphasizing in this session the Chief Complaint and History of Present Illness.
3. Practice the basic elements (HPI including OPQRSTAA) of the initial portions of an interview when given a chief complaint in a small group format
4. Understand the difference between the PCCM vs. the disease-centered model
5. Understand how professionalism applies to doctors-in-training.
6. Understand how physicians utilize clinical reasoning skills to create problem lists and differential diagnoses.
7. Demonstrate the proper format for an oral case presentation.
The model of the doctor-patient relationship has changed over time from a more paternalistic to a more collaborative model. The Patient-Centered Model recognizes the importance of involving the patient in his/her health care.

**The Patient-Centered Method**
- A more cooperative, interactive model, sometimes referred to as the biopsychosocial model.
- Physicians aid patients in deciding what “health” is and how best to optimize it.
- Physicians obtain not only biomedical information, but also psychosocial and contextual information, including details about the patient’s family background, work, culture, beliefs, and value-systems.
- Treatment adherence and outcomes are optimized, because the patient plays an active role in decision-making, and is more likely to be comfortable with a treatment plan before it is instituted.

- Patients in this model have a significant role in the decision-making process.
- Physicians guide the patient during this process as the patient selects therapeutic options that have the best chance of achieving **the patient’s** health goals while respecting **the patient’s** values.

You are encouraged to complete the Institute for Healthcare Improvement’s online modules on Patient and Family Centered Care at the following site:
http://app.ihi.org/lms/lessonpageworkflow.aspx?CatalogGuid=6cb1c614-884b-43ef-9abd-d90849f183d4&CourseGuid=8eb52137-21d7-4b30-afcd-fd781de6d6d5&LessonGuid=bd4bedf3-8d89-4a66-bc9e-dcc7439cb78e

An older, more traditional model of the doctor-patient interaction focused more on the disease process, and was less concerned with patient issues. It is sometimes referred to as the biomedical model.

**The Biomedical/Disease-Oriented Method:**
- Diagnose Illness
- Treat Disease
- Apply preventive strategies based on the age, sex, and risk factors of the patient

- Fairly successful in curing, or at least controlling many diseases, when adherence is good.
- Generally, the physician is the active participant and the patient is the passive participant.
- Many physicians and patients believe that while this method may deal well with disease, it may not encourage a patient to be healthier or to become involved in the management of their own health.

**THE MEDICAL INTERVIEW**

This unit is an introduction to the medical interview. The objective is to learn the importance of communication skills and how to begin conducting interviews. During small group sessions, you will have an opportunity to discuss medical interviewing in the context of carefully structured role-plays. During each role-play, one student will be the “physician” who will interview a standardized patient, and four other students will have specific roles as observers.

In Dr. Appel’s lecture, you learned about the three-function model of interviewing (Cohen-Cole, 1991;
Lazare, 1989). The three functions are to:

1) **Gather data** to understand the patient's problems, make accurate diagnoses, and formulate treatment and prognosis.
2) **Develop a therapeutic relationship** by eliciting the patient's expression of emotion and providing empathy, support, and reassurance.
3) **Communicate information and implement treatment plans**. This includes:
   a) helping patients understand their illness, diagnosis, and treatment plan.
   b) motivating patients to make behavioral changes (i.e. coping, compliance, healthier lifestyle).

Although it is understood that in clinical practice these functions occur simultaneously, for the purposes of educational clarity, the three functions are presented separately. The primary objective of this session is to focus on the first function, i.e. accurate data gathering, and to introduce an awareness of the importance of the therapeutic relationship. With the use of role-playing, you will have the opportunity to practice and observe the structure for gathering information from patients, as well as learn the behaviors that facilitate this process.

**The structure of the medical interview is as follows:**

A. **Introduction and Greeting**
   1. Maintain good eye contact.
   2. Extend a handshake if socially and culturally acceptable.
   3. With new patients, identify and introduce yourself.
   4. Address patients by their formal title (Mr., Mrs., Ms.).

B. **Elicit the Chief Complaint**
   Several questions can be used to allow the patient to explain the reason they have sought out medical care, i.e.,
   "How can I help you today?"
   "What concerns do you have today?"

C. **Develop the Chief Complaint - Facilitation**
   1. Once the patient has expressed his/her first or primary complaint, you should use initial facilitation to encourage the patient to keep talking. Allow the patient to describe the symptoms in his/her own words.
   2. "Tell me more", "please go on", or "would you please describe the chest pain?"
   3. Continue with a series of facilitators such as "go on" and "uh huh" so that you can get an initial sense of the primary complaint.
   4. Nonverbal facilitators can also be very effective, i.e. nodding your head.
   5. Silence is an effective tool for allowing patients to keep talking.

D. **Checking (Reviewing)**
   1. After you have listened to gain an initial understanding of the patient's chief complaint, it is important to check what the patient has just told you.
   2. Checking involves reiterating the important aspects of the patient's story that have been told up to this point.
      "Let me see if I understand what you have told me so far. You have been experiencing chest pain over the past three years. When it started, you described it as..."
   3. Checking accomplishes many important functions.
      a. Reviews to determine what else needs to be explored.
      b. Checks the accuracy of the physician's understanding of the patient's history.
      c. Reassures the patient that the physician is listening.
d. The patient can clarify any mistakes that the physician had made in interpreting the history.
e. Facilitates and invites further clarification of the problem from the patient.

E. **Survey the Range of Problems (What else?)**
   1. Even though the "chief complaint" may be the first complaint offered by the patient, it may not be the most important or distressing to them. Often patients have more than one concern but may be hesitant or embarrassed to talk about them.
   
   2. Once the physician has facilitated an initial discussion of the primary complaint and used checking, they must then survey for other problems.
      
      "So it sounds like you are concerned about these headaches. Do you have any other concerns? **Is there something else you would like to discuss?**"
   
   3. Continue to survey for other problems and probe for completeness until the patient has clearly indicated that there are no other concerns.

F. **Developing the Narrative Thread**
   1. This is the process by which the history of a given symptom or problem is expressed by the patient in their own words and understood by the physician in the context of the patient's life.
   
   2. The patient should be directed to describe the **chronological emergence** of their symptoms. The patient tells their "story" from the beginning.
   
   3. Avoid using a series of "yes" or "no" questions.
   
   4. Two important questions can be used repeatedly to help develop the narrative thread:
      a. **"WHAT HAPPENED NEXT?"**
      b. **"WHAT ELSE DID YOU NOTICE?"**
   
   5. These questions allow an efficient development of the patient's story. The physician initially uses open-ended questions to obtain the history. As the history develops, the physician then focuses the rest of the story by asking more specific and direct questions, going from an open to closed form of questioning.

The lecture also focuses on the verbal and non-verbal behaviors which can either facilitate or interfere with the flow of the interview. These include:

1. **Disposition of the physician:**
   - Warm and friendly
   - Approachable
   - Empathic and caring
   - Supportive
   - Non-judgmental

2. **Non-verbal behaviors:**
   - Listens attentively
   - Maintains eye contact
   - Body posture
   - Head nodding
   - Facial expression conveying interest

3. **Verbal behaviors:**
Behaviors to encourage:

- Emphasize use of open-ended questions during initial phase of interview.
- Avoid using close-ended questions initially.
- Do not interrupt the patient.
- Use the language of the patient, and avoid technical language and medical jargon.

Style of questions to avoid:

- Multiple-multiple questions
  i.e. "Do you feel nauseated, get stomach cramps, or have diarrhea?"
- Accusatory questions
  i.e. "Why did you do that?"
- Biased questions
  i.e. "You don't use drugs, do you?"
  "Was it because you were walking too fast on a cold day?"

References
Friday, October 28, 2016

8:30 am - 10:00 am

Lecture: Dr. Schwartz

Question: How do I help patients reduce their behavioral risk factors?

Key Points:
• Healthy People sets the nation’s public health agenda
• Behavioral risk factors are responsible for substantial morbidity and mortality
• Physician interventions can reduce mortality and morbidity from behavioral risk factors

Objectives:
• Discuss Healthy People 2020 structure and goals
• Identify special populations and population health indicators
• List behavioral risk factors and their morbidity/mortality impact
• Discuss counseling guidelines related to lifestyle risk factors
• Identify risk factors for coronary artery disease
INSERT EVIDENCE-BASED PRACTICE EXERCISE #2 HERE
Self Study

Assignment:

1. Read the article, “Avoiding Dangerous Abbreviations and Dose Expressions”, located on Blackboard. Although this article was published in 2004, its content is relevant and reflects current recommendations. The article references the Joint Commission on Accreditation of Healthcare Organizations (JCAHO – now referred to as “Joint Commission”) minimum list of do not use abbreviations. In periodic review of hospitals and other healthcare organizations, the Joint Commission routinely audits patient charts for use of “do not use” abbreviations and dose expressions in written orders and clinical documentation. Hospitals receive citations for violations of the do not use rules.

2. Review the table of medical abbreviations and their meanings

3. Read the medical record note that documents a problem-focused visit for a new patient – Wanda Samples

4. Determine which entries in the medical record note are unsafe abbreviations or unsafe dose expressions.
Medical Record Note

**Patient:** Wanda Samples

**CC:** Cough, wheezing.

**HPI:** 52 year-old female presents for her first visit with c/o cough, wheezing, and SOB x5 days. Sx are worse at HS when supine and better when upright. Sx improve with use of Primatene Mist. Cough has been hacking, continuous, and productive of thick sputum. Cough has been moderately severe with mild SOB. She has not missed work, but feels Sx have worsened over the past 24 hours. She denies chest pain, F/C, nasal congestion, sore throat, hemoptyisis, N/V/D. Thinks she may have “bronchitis”.

**PMH:** DM x5 years. ?asthma in the past, but only has mild SOB/wheezing episodes 2-3 times per year, generally when she has a “cold”. Denies any other illnesses. G2P2, LMP at age 50. Last Pap smear “years ago”, has never had mammograms. Td 3 years ago, has never had influenza or pneumococcal vaccines.

**PSH:** s/p appendectomy at age 23.

**Medications:** Glyburide 5.0 mg PO QD, Lantus Insulin 10 U SQ QHS, Primatene Mist PRN

**Allergies:** NKDA, except for a "bad reaction" to MS that she received post-appy

**SH:** Never smoked. Does not use EtOH. Self-employed web-site designer. Lives with husband in new townhouse.

**FH:** Unremarkable.

**ROS:** Negative except as per HPI.

**Physical Exam:**

Vitals: Temp 99.0, P 76, RR 14, BP 114/82.

General: Well-developed, well-nourished female in NAD. HEENT: Eyes - no conjunctival injection or discharge, Ears - TMs WNL, Nose - congestion noted, Pharynx - no erythema or exudates. Neck - supple, no JVD, few mildly enlarged, non-tender anterior cervical nodes bilaterally. No thyromegaly. Heart - RRR, normal S1, S2, no m/g, no lifts, heaves, or thrills, pulses strong. Pulmonary - no chest deformities, no retractions or use of accessory muscles, no dullness to percussion, coarse bilateral rhonchi, mild expiratory wheezing with good air exchange in all lung fields, no rales. Extremities - no edema, clubbing, or cyanosis.

**Laboratory:** CBC - RBC 5.4, Hgb 15, WBC 8,500 with a normal differential. FBS 98.

**Diagnostics:** CXR - PA/lateral - no acute cardiopulmonary process.

**A/P:**

1) Acute Bronchitis - likely viral. OTC Robitussin DM 2 tsp TID PRN cough. Encourage oral fluids.

2) Wheezing - probable exacerbation of mild intermittent asthma due to #1 above. D/C Primatene Mist, start Albuterol MDI 2 inhalations q4h PRN. RTC in 10 days, consider baseline PFTs after resolution of current process.

3) Health maintenance activities - RTC for pap/pelvic, mammography.
### Medical Abbreviations

This table lists many commonly used medical abbreviations and their intended meanings.

*NOTE: several of these are considered UNSAFE

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC</td>
<td>chief complaint</td>
</tr>
<tr>
<td>PSH</td>
<td>past surgical history</td>
</tr>
<tr>
<td>SOB</td>
<td>shortness of breath</td>
</tr>
<tr>
<td>x</td>
<td>times</td>
</tr>
<tr>
<td>Sx</td>
<td>symptoms</td>
</tr>
<tr>
<td>HS</td>
<td>at night/at bedtime</td>
</tr>
<tr>
<td>F/C</td>
<td>fevers/chills</td>
</tr>
<tr>
<td>N/V/D</td>
<td>nausea/vomiting/diarrhea</td>
</tr>
<tr>
<td>PMH</td>
<td>past medical history</td>
</tr>
<tr>
<td>DM</td>
<td>diabetes mellitus</td>
</tr>
<tr>
<td>s/p</td>
<td>status post (had it in the past)</td>
</tr>
<tr>
<td>G</td>
<td>gravida (# pregnancies)</td>
</tr>
<tr>
<td>P</td>
<td>para (# deliveries)</td>
</tr>
<tr>
<td>LMP</td>
<td>last menstrual period</td>
</tr>
<tr>
<td>PO</td>
<td>orally (by mouth)</td>
</tr>
<tr>
<td>QD</td>
<td>every day (daily)</td>
</tr>
<tr>
<td>U</td>
<td>unit(s)</td>
</tr>
<tr>
<td>SQ</td>
<td>subcutaneously</td>
</tr>
<tr>
<td>QHS</td>
<td>every night</td>
</tr>
<tr>
<td>PRN</td>
<td>as needed</td>
</tr>
<tr>
<td>NKDA</td>
<td>no known drug allergies</td>
</tr>
<tr>
<td>SH</td>
<td>social history</td>
</tr>
<tr>
<td>FH</td>
<td>family history</td>
</tr>
<tr>
<td>EtOH.</td>
<td>ethanol (“alcohol”)</td>
</tr>
<tr>
<td>Td</td>
<td>tetanus/diphtheria vaccination</td>
</tr>
<tr>
<td>ROS</td>
<td>review of systems</td>
</tr>
<tr>
<td>HPI</td>
<td>history of present illness</td>
</tr>
<tr>
<td>NAD</td>
<td>no apparent distress</td>
</tr>
<tr>
<td>P</td>
<td>pulse</td>
</tr>
<tr>
<td>RR</td>
<td>respiratory rate</td>
</tr>
<tr>
<td>BP</td>
<td>blood pressure</td>
</tr>
<tr>
<td>HEENT</td>
<td>head/ears/eyes/nose/throat</td>
</tr>
<tr>
<td>JVD</td>
<td>jugular venous distension</td>
</tr>
<tr>
<td>RRR</td>
<td>regular rate and rhythm</td>
</tr>
<tr>
<td>M/G</td>
<td>murmurs/gallops</td>
</tr>
<tr>
<td>CBC</td>
<td>complete blood count</td>
</tr>
<tr>
<td>RBC</td>
<td>red blood cells</td>
</tr>
<tr>
<td>Hgb</td>
<td>hemoglobin</td>
</tr>
<tr>
<td>WBC</td>
<td>white blood cells</td>
</tr>
<tr>
<td>FBS</td>
<td>fasting blood sugar</td>
</tr>
<tr>
<td>CXR</td>
<td>chest x-ray</td>
</tr>
<tr>
<td>PA</td>
<td>posterior/anterior view</td>
</tr>
<tr>
<td>A</td>
<td>assessment</td>
</tr>
<tr>
<td>P</td>
<td>plan</td>
</tr>
<tr>
<td>TID</td>
<td>three times a day</td>
</tr>
<tr>
<td>Rx</td>
<td>prescription</td>
</tr>
<tr>
<td>D/C</td>
<td>discontinue</td>
</tr>
<tr>
<td>OTC</td>
<td>over the counter</td>
</tr>
<tr>
<td>MDI</td>
<td>metered dose inhaler</td>
</tr>
<tr>
<td>RTC</td>
<td>return to clinic</td>
</tr>
<tr>
<td>PFTs</td>
<td>pulmonary function tests</td>
</tr>
</tbody>
</table>

**Note:** Different groups and health systems may have different requirements about allowed and disallowed abbreviations and acronyms. Those used in this assignment are meant to help familiarize you with common expressions that you are likely to encounter. In general, you should avoid the overuse of abbreviations and acronyms and avoid making up your own, which might not be understood by your colleagues.
Self Study (preparation for SG 2)

Question: How important are a patient’s occupation and environmental exposures in the medical interview?

Learning Objectives:
1. Know the 4 elements of assessing dose by history
2. Know 6 aspects of the exposure history to be considered when inferring causality
3. Define cumulative trauma disorder
4. List 5 occupational risk factors for cumulative trauma disorder
5. List 3 non-occupational risk factors for carpal tunnel syndrome

Key Points:
- Environmental exposures may cause or aggravate patient injury or illness
- Taking an exposure history is an important part of medical history-taking
- Cumulative trauma disorders are associated with highly repetitive and forceful jobs
- Prevention of work-related cumulative trauma disorders usually requires work re-design
Assignment:
View the streaming video entitled “The Uncomfortable Arm,” and answer the following questions on Blackboard.

1. Dr. Schenk asked the patient to provide her with information about exposures from his workplace from which source?
   a. Material Safety Data Sheets (MSDS)
   b. National Institute of Occupational Safety and Health (NIOSH)
   c. Agency for Toxic Substances and Diseases Registry
   d. His previous physician
   e. The shop foreman

2. Occupational risk factors for cumulative trauma disorder include all of the following EXCEPT:
   a. Frequent repetitive motion
   b. Small carpal tunnel
   c. Mechanical pressure
   d. Awkward postures
   e. Vibration

3. Mr. Johnson is a new patient in your office who has been diagnosed with carpal tunnel disorder caused by his occupation. Conservative therapy includes the steps listed below. Which step should be taken FIRST:
   a. Splint
   b. Anti-inflammatory medication
   c. Steroid injection
   d. Work re-design
   e. Physical therapy/exercise/warm soaks

4. In the video of lead abatement workers who had unprotected occupational exposure to lead, all of the following were mentioned by the workers EXCEPT:
   a. Doctors asked occupation, but did not ask about work-related exposures.
   b. Workers had no income for one year because the company would not admit responsibility.
   c. The workers complained of multiple symptoms including headache, stomachache, and retardation.
   d. Workers assumed that the workplace was safe because of government oversights.
   e. Workers had to prove that the lead exposure came from the work and not home, environment.

Population, Patient, and Physician- Part 1
Small Group 2

Thursday, November 10, 2016
8:00 am – 12:00 pm (as assigned for your small group)
Small Group 2

- Past Medical History, Past Surgical History, Medications, Allergies, Family History, and Social History, Occupational/Environmental Exposures
- Occupational and Environmental (OE) Exposures: The Uncomfortable Arm
- Appropriate Introductions and Interactions for Physician in Training

Question:
- What are the interviewing skills necessary to effectively communicate with patients?
- How can information about a patient’s occupation affect accurate diagnosis?

Key Points:
- The manner in which interviewing is conducted impacts the accuracy of information obtained from the patient.
- Knowing the patient’s attributions regarding their symptoms or illness can provide useful clinical information.
- The Past Medical History, Past Surgical History, the Family History, and the Occupational/Environmental and Social Histories follow the Chief Complaint and the History of Present Illness in the medical interview.
- Occupation and environment should be part of any health assessment
- The social history provides critical information for managing the care of the patient

Learning Objectives:
- Practice the structure of the initial phase of data gathering.
- Understand the importance of surveying the patient’s range of concerns.
- Understand the importance of nonverbal behavior and the influence of culture.
- Indicate familiarity with CC, HPI, PMH, PSH, FH, Social History (SH) and Occupational and Environmental exposures
- Record patient interview on a sample medical chart form
- Practice basic interviewing skills with an SP model
- Understand how physicians use clinical reasoning skills to create problem lists and differential diagnoses.
- Demonstrate the proper format for an oral case presentation.
3. **Past Medical History (PMH)**
   
   **A. Previous significant medical illnesses**
   
   Patient should be queried regarding diabetes, hypertension, asthma, angina, etc., including year of onset. Questions to ask the patient could include: "are you being treated by other doctors for any medical conditions?", or "do you have any medical conditions?". If you are suspicious that the patient may have mental health problems, ask specifically for this information with questions like "have you ever been diagnosed with a nervous condition?" or "have you ever experienced difficulties with your mood or anxiety?"

   **B. Hospitalizations**
   
   Ask about all hospitalizations, including dates, facilities, and details of care received (i.e. stayed overnight in the observation unit, spent 2 days in the ICU, intubated/mechanical ventilation, etc.) You might ask "have you ever been in the hospital for a serious illness?"

   **C. Childhood illnesses and immunizations**
   
   Include whether immunizations are up-to-date, to the best of the patient's knowledge, and whether he or she had common childhood illnesses such as measles, chicken pox, or recurrent ear infections.

   **D. Obstetrical/Gynecologic history**
   
   Date of menarche and menopause, duration and frequency of menses, gravidity (number of pregnancies), parity (number of live births), abortions (spontaneous or elective), and living children.

4. **Past Surgical History (PSH)**

   Include the major diagnosis, surgery or procedure performed, name of the provider, and the facility and date. Injuries/trauma are often included in this section.

5. **Medications**

   List all medications the patient is currently taking, with the dose and frequency of administration if possible. Include prescribed drugs as well as prescription drugs not prescribed to the patient. Specify as to the patient's adherence, i.e. how often doses are missed, is the drug being taken at the prescribed time, is it taken with other agents/are warnings being followed, etc. Inquire specifically about the patient's use of over-the-counter preparations, such as laxatives, cold medicine, aspirin, and herbal preparations. Don't forget to ask about folk medicines specific to the patient's culture.

6. **Allergies and adverse drug reactions**

   List not only that the patient experienced an allergic reaction, but describe specifically what the reaction was, i.e. rash, hives, shortness of breath. Patients will often confuse medication intolerance with allergy. Similarly, they may confuse known side effects with allergy. Describe intolerances/side effects in this section as well. If there are no known allergies to drugs, list "NKDA" (no known drug allergy). You may also include food and environmental allergies in this section (i.e. anaphylaxis from bee stings).
7. Family History
   A family genogram is a useful tool for recording the family history. Similar to a pedigree diagram, it graphically records the age, relationship, and important medical conditions for each member of the patient's family. It differs from a pedigree in that it also records social relations.
   
   A. Parents and siblings
      If alive, ascertain state of health. If deceased, determine age and cause of death.
   
   B. Hereditary and familial diseases
      Inquire routinely for family history of cancer, hypertension, diabetes, obesity, asthma, arthritis, and mental illness.
   
   C. Family social history
      With which members of the family does the patient currently reside? How close does the patient feel to any of these people? Are they able to meet the patient's emotional needs in normal times? Does the patient feel they will respond constructively to the current problem?

8. Social History, including Occupational/Environmental History
   A. Living Arrangements (s/m/w/d/partner); residence (house, apt., shelter, homeless)
   B. Occupational History
   C. Environmental Exposures (include hobbies when pertinent, i.e. involving risk)
   D. Last year of schooling
   E. Travel History, personal interests, hobbies
   F. Lifestyle
      i. Diet
      ii. Physical Activity
      iii. Complementary/alternative medicine practices
      iv. Tobacco use (pack-year history = #packs/day x #years), include year quit and duration/pack-year value if patient is a former smoker
      v. Alcohol use (type consumed, quantity, frequency)
      vi. Drug use (illicit substances, Rx meds with abuse potential)
      vii. Sexual History

9. Review of Systems
   The Review of Systems will be discussed later in this course.
Clinical Case Simulation: The Uncomfortable Arm

Setting:
Fully equipped office of a board certified primary care physician, located in a suburban city of a large metropolitan area. The office is part of a group practice of 4 physicians. The office has basic laboratory facilities (CBC, urinalysis, wet mount, strep screen, urine pregnancy test), x-ray equipment, electrocardiography, and the ability to draw blood to send out for more extensive testing.

Patient:
Ms. Linda Samples, a 41-year-old married female, presenting for her first visit in this office.

Chart note by MA:
“Arm pain.”
Supplemental Information

Interviewing

To be reviewed and practiced in Small Group 2

I. Physician-patient interaction and interviewing skills

A. Effective techniques to improve the physician-patient interaction:
   1. Good communication skills
   2. Respect the patient (regardless of any factors)
   3. Physician's appearance
   4. Expressing compassion and empathy

B. Effective interviewing techniques will be demonstrated and practiced:
   1. Greeting the patient appropriately
   2. The setting of the interview (comfort and privacy)
   3. Listening (without interrupting)
   4. Types of questions:
      a. Open-ended questions
      b. Direct questions
      c. Yes-No questions - avoid early in the interview
      d. Multiple-Multiple questions - avoid
      e. "Why" (accusatory) questions - avoid

C. Other Techniques
   1. Silence
   2. Facilitation
   3. Confrontation
   4. Interpretation
   5. Review of patient’s concerns
   6. Support
   7. Reassurance

II. The patient-centered method of clinical care

A. Roles of the physician
   1. Aiding the patient in defining “health” and how best to optimize it
   2. Obtaining not only biomedical information from the patient but also psychosocial and contextual information
   3. Encouraging the patient to take a role in the decision-making process through the formation and prioritization of goals
   4. Guiding the patient through an effective decision-making process to select therapeutic options that have the best chance of achieving the patient’s health goals while respecting the patient’s values
B. Roles of the patient
   1. Adapt a wider view of health than the traditional biomedical model
   2. Greater degree of responsibility on the part of patient
   3. Involvement in decision-making

On the next page, you will find a form to record information for a first patient visit. You should collect the information as instructed in Unit 1, beginning with the chief complaint. In the new patient visit, the information that you collect will follow in this order:
   - the chief complaint and history of present illness
   - past medical history, past surgical history, medications, allergies, and family history
   - social history and occupational/environmental history

You will also find a form that can be used to record a more detailed occupational/environmental history obtained from a patient. Note that it permits the recording of both current and previous employment—information that may be important in the evaluation of a patient’s health status. You may want to retain this form for future reference/use. It is the same form that is shown in the self-study video, "The Uncomfortable Arm". You will use this form again when interviewing a patient during your Family Medicine Clerkship in year 3.
History Form

Patient name: Linda Samples
Primary care physician _____________________

CC

HPI

O

P

Q

R

S

T

A

A

A

PMH

Previous Illnesses/Chronic conditions

Hospitalizations

Childhood Illnesses

Past Obstetric/Gynecologic History

PSH

Meds (Rx, OTC, and CAM)

Allergies

FH

________________________________________________________________________

________________________________________________________________________
**Occupational / Environmental Database**

**Patient name:** ________________  **Primary care physician:** ________________

<table>
<thead>
<tr>
<th><strong>Occupational History: Current</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently employed?</td>
</tr>
<tr>
<td>Name of Employer:</td>
</tr>
<tr>
<td>Job title:</td>
</tr>
<tr>
<td>Job description:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Hazardous Exposures at Work or Home (check all that apply)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>fumes</td>
</tr>
<tr>
<td>dusts</td>
</tr>
<tr>
<td>chemicals</td>
</tr>
<tr>
<td>pesticides</td>
</tr>
<tr>
<td>solvents</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Occupational History: Previous</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer</td>
</tr>
<tr>
<td>____________________</td>
</tr>
<tr>
<td>____________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Environmental History</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
</tr>
<tr>
<td>☐ Dump site</td>
</tr>
<tr>
<td>Home:</td>
</tr>
<tr>
<td>☐ central heat</td>
</tr>
<tr>
<td>☐ air humidifier</td>
</tr>
<tr>
<td>☐ well water</td>
</tr>
<tr>
<td>Hobbies:</td>
</tr>
<tr>
<td>☐ painting</td>
</tr>
<tr>
<td>☐ photography</td>
</tr>
<tr>
<td>☐ model making</td>
</tr>
<tr>
<td>Personal:</td>
</tr>
<tr>
<td>☐ current smoker packs/day years</td>
</tr>
<tr>
<td>☐ alcohol drinks/week</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Medical Provider Comments</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>
Key Points:

- The Humanities panel will consist of year III and IV WSUSOM students who represent the Gold Humanism Society.
- The students will present video from contacts with patients recently encountered during the clerkship or electives.
- The panel will focus on reflections of the patient/student perspective on illness.
- The panel will demonstrate examples of the use of music, art, poetry, literature, etc. in the healing process.

Need session objectives here
Tuesday, November 15, 2016

9:00am – 10:00 am

Lecture

Question: What are the special interviewing concerns with pediatric patients?

Key Points:
- There are unique components to a pediatric interview including prenatal, natal, peri-natal, immunization, nutritional, developmental, family, and social/safety topics.
- It is important to be open to and recognize “hidden agendas” which might lead parents to bring their children to a physician.
- It is important to establish a comfortable, trusting relationship with the family in order to collect accurate data.

Objectives:
- Identify the unique components of information gathered in conducting a pediatric interview
- Explain how the age of the pediatric patient influences the content of your interview (and physical exam):
  a. Newborn
  b. Infant (under 1 year of age)
  c. Toddler
  d. School-aged
  e. “Tween” (M/F)
  f. Adolescent (M/F)

Suggested References

- Council on Medical Student Education in Pediatrics (COMSEP), Pediatric Clerkship Curriculum, 2005, http://www.comsep.org/educationalresources/curindex.cfm (adapted by over 90% of medical schools in North America)
- Bickley, Lynn S: Bates’ Guide to Physical Examination and History Taking, 10th edition (required text for Clinical Medicine 2)
- Lane, Lindsey and Gottlieb, Ruth. The Infant Patient Encounter CD, 2004, (CD clips referenced below for presentation by **)
Techniques

1. Refer to a checklist when interviewing, until you are more familiar with pediatric-specific physiology, pathophysiology, and psychology/behavior.
2. Involve the caregiver! They can comfort, distract, or restrain the child.
3. Carefully observe the informant/patient interactions during your interview.
4. Recognize the value of listening as an important interview tool.
5. Recognize opportunities for “anticipatory guidance.”
6. Empower caregivers by reinforcing positive health behaviors and partnering with them in medical decision-making.
7. Note: establishing rapport with the pediatric patient and the caregivers is vitally important during the interview process to ensure maximum cooperation of the infant, child, or adolescent during the physical examination.

A. The Pediatric Interview

1. General
   a. Informant/historian – establish relationship to the patient, reliability/accuracy of information provided.
   b. Patient profile – confirm name (pronunciation), age, and gender.
   c. Chief complaint – elicit reason for visit, ask again at conclusion of interview to survey for multiple or hidden agendas.
   d. HPI/OPQRSTAAA
      - Note: defining severity requires different reference points – ask if symptoms disrupt usual activities of daily living (eating, sleeping, behavior, play, school performance).
   e. Allergies – ask specifically about penicillin and sulfa drugs, describe reaction.
   f. Medications – parents may not recall specific prescription names, but might be able to describe color, smell/taste, need for refrigeration, frequency.
   g. Supplements – see Nutritional History below for details.
   h. Family history – elicit relationships, genetic or inheritable diseases (pedigree), and conditions associated with health risk behaviors.

2. Birth History (when to ask)
   a. Pre-natal – maternal age, her diet, infections and STDs, medications including vitamins and iron, substance use. Ask specifically about the date prenatal care was initiated, medical conditions or symptoms of hyperemesis (vomiting), pre-eclampsia (hypertension), anemia, diabetes, or vaginal bleeding. Question injuries for a non-accidental etiology.
   b. Natal – gestational age, delivery method (vaginal, C-section, forceps/vacuum), duration and onset of labor, rupture of membranes, anesthesia or medications given, presentation, and Rh/ABO status. If you need additional information or verification, ask for the name of the birth hospital or obstetrician/family practitioner.
   c. Peri-natal – birth weight and length, Apgars if available, use of oxygen or other resuscitation efforts, (yellow) jaundice, duration of baby’s stay in the hospital.

3. Nutritional History
   a. Feeding method – breast vs. bottle vs. sipee cup, self-feed vs. spoon.
   b. Diet – amounts and types of nutrition, e.g., formula (name, protein source, with or low iron, powdered/concentrate/ready-to-feed), whole/2% homogenized milk, tap vs. bottled vs. nursery water either alone or when preparing formula.
   c. Beyond infancy, use Pyramid and question size of portions, meal patterns, and fad diets. Ask about milk, juice, soft drinks, high carb or energy beverages, as well as frequency of fast food, snacks.
   d. Over-the-counter supplements – herbals, multi-vitamins, calcium.
   e. Prescribed supplements – iron, vitamin D, or fluoride.
   f. Eating behaviors.
4 Immunization Status – obtain a complete record with dates and reactions if any, then compare to current vaccine recommendations updated annually by the CDC at http://www.cdc.gov/vaccines/schedules/index.html
5 Developmental History – ask questions from each of 4 domains of Gross Motor, Fine Motor, Language, and Personal-Social, using the Denver Developmental Screening Test II
6 Bowel/Bladder Functions – number of wet diapers, stool consistency and patterns. If age-appropriate, inquire about toilet training, primary/secondary enuresis, diurnal/nocturnal enuresis, constipation, encopresis.
7 Sleep Habits – periodic breathing and sleep position/location for infants, apneic episodes, snoring, confusional arousal, night terrors, nightmares, sleepwalking, daytime naps.
8 Social History – detail is absolutely necessary to investigate/ensure a child’s physical and emotional well-being.
   a. Note all caregivers and household members, including daycare arrangements.
   b. Assess financial status and available resources.
   c. Assess safety in the home (unintentional injuries, poisonings, firearms, smoke alarms, water temperature, etc.) and vehicular (auto, bicycles, scooters, other).
   d. Survey environmental exposures (passive smoke, lead-based paint, etc.)
   e. Assess academic performance (identify internal vs. external factors in school failure), social support or peer stressors within school setting.
   f. The HEADSS mnemonic (varies – Home, Education, Exercise, Activities, Diet, Depression, Sex/Sexuality, Substance Use, Self-Esteem), is a useful guide in interviewing adolescent patients as well as the AMA’s Guidelines for Adolescent Preventive Services (GAPS). Familiarize yourself with the CDC’s Youth Risk Behavior Surveillance (YRBS) – in this age group, determinants of health begin to shift from intrinsic disease to risk behaviors. Note there are state-specific laws in providing confidential care to minors.
   g. Parenting and discipline; interpersonal violence questionnaire.
**Vital Signs/Growth Parameters**

1. Use age-based tables of acceptable ranges for “normal” to interpret all vital signs:
   a. Note route of temperature measurement (oral, rectal, axillary, tympanic, temporal) and related variations.
   b. Precordial auscultation may be easier to perform than palpating peripheral pulses, particularly in the ill child.
   c. Accurately measure respiratory rate over at least 1 minute.
   d. Select the appropriate blood pressure cuff size in pediatric patients (the internal bladder should cover 2/3 to 4/5 of the distance between the shoulder and the antecubital fossa).
   e. Pain should be assessed using appropriate scales, i.e. Wong-Baker facies.

2. Somatic growth is assessed using population standards, with growth charts graphed by age (months, years), gender (male, female), and certain conditions (i.e. prematurity, Down Syndrome, Turner Syndrome). Children of specific ethnic and racial backgrounds may grow at rates that deviate from the sampling base. Demonstrate familiarity with charts available at www.cdc.gov/growthcharts.
   a. Interpret growth parameters in terms of percentiles, including Head Circumference and Body Mass Index (BMI).
   b. Recognize the necessity of longitudinal data to interpret growth measurements performed at a single point in time.
Population, Patient, and Physician- Part 1

Small Group 3

Thursday, December 1, 2016

8:00 am – 12:00 pm (as assigned for your small group)

Small Group 3

- OE Exposures: The Uncomfortable Arm - Physical Examination
- Family and Financial Stress
- Acute Illness - follow-up visit

Question:
- What is the relationship between psychosocial factors and illness?
- How is a follow-up visit different than an initial visit?

Key Points:
- An organized OE exposure history is an important part of assessing a patient’s condition, particularly with respect to possible work-related injuries.
- Psychosocial factors including family and financial stress may have a significant impact upon a patient’s health, illness and treatment.
- A systematic examination of a body part or organ system, understanding the underlying anatomy and physiology of the affected area, is critical to the evaluation of a patient’s symptoms.
- Follow-up visits are more focused in the amount of data (history and exam) collected.
- A good physical examination is helpful in refining a differential diagnosis.

Learning Objectives:
- Demonstrate proper behavior as a physician in training.
- Demonstrate continued progress toward understanding and mastering interviewing skills, including both non-verbal and verbal skills.
- Discuss the potential influence of OE exposures on health and illness.
- Understand that psychosocial factors can have an impact on a patient’s physical condition.
- Demonstrate the ability to obtain and understand a patient’s vital signs, and perform an examination of the arm.
- Develop a problem list and a differential diagnosis for Linda Samples.
- Understand how physicians use clinical reasoning skills to create problem lists and differential diagnoses.
- Practice a follow-up patient interview and understand the differences from an initial visit.
- Practice head and neck physical exam skills.
- Continue to practice obtaining vital signs.
- Use the SOAP note format for a follow-up visit.
- Apply the principles of Translational Medicine to the Linda Samples follow up case.
- Demonstrate the proper format for an oral case presentation.
Supplemental Information

Physical Examination: to be reviewed and practiced during Small Group 3

I. Preparing the patient for a physical exam
   In this session, you will be oriented to initial physical examination techniques. Additional practice with physical exam skills can be obtained by working with other students and family members.

   A. Complete the history with the patient clothed (completed in SG session 2).
   B. Obtain permission for the exam.
   C. Allow the patient to change into a gown in private.
   D. Bring all of the equipment required to the exam.
   E. Wash your hands thoroughly prior to the exam.
   F. Drape the patient with the appropriate gown or sheet, depending on the nature of the exam.
   G. Expose only the area needed for the examination.
   H. Stand to the right of the exam table (left for left-handers).
   I. Continue to communicate with the patient throughout the exam.
   J. Use gloves or other precautions as indicated.
   K. Minimize movement for the patient.

II. Obtaining Vital Signs
   A. Temperature
      1. Oral (most accurate)
         a. Glass thermometer (3 minutes)
         b. Electronic (rapid)
         c. Increase accuracy
            -- no smoking prior
            -- no extremes of temperature within 30 minutes prior/hot or cold beverages.
      2. Rectal
         a. Registers one degree Fahrenheit higher than oral
         b. 2-3 minutes with glass thermometer
      3. Axillary
         a. safer for children or for those who cannot cooperate fully
         b. Not as accurate
         c. Registers one degree Fahrenheit less than oral
      4. Skin -- thermal dots or scales
      5. Aural -- ear temperatures are very rapid
      6. Variations in temperature
         a. Circadian Rhythm (2-3 degrees daily)
            -- highest 4:00 PM - 8:00 PM
            -- lowest 4:00 AM - 6:00 AM
         b. Age
            -- hypothermia in older age
            -- labile in the very young
         c. Sex -- ovulatory changes (0.5 to one degree Fahrenheit higher with ovulation).
         d. Emotions
         e. Exercise
         f. Environment
         g. Oral intake

   B. Pulse
1. Carotid
   a. Located on the lateral neck
   b. Frequently used in athletics and CPR
2. Apical
   a. Apex of the heart
   b. Frequently used in children/neonates
3. Radial pulse
   a. Located on the lateral wrist over the radial styloid.
   b. Most common area to evaluate pulse as it causes little disturbance to the resting patient.
4. Dorsalis Pedis -- located at the midstep of the dorsal foot and umbilical, brachial and femoral
5. Umbilical
6. Brachial - at the bend in the elbow
7. Femoral - below the inguinal ligament
8. Factors affecting pulse rate
   a. Age (newborn > adult)
   b. Sex (male < female)
   c. Exercise
   d. Emotion
   e. Heat
   f. Body Position (horizontal > upright)
9. Terminology
   Values for a. and b. are age dependent. Those given here are for adults. Normal pediatric ranges are significantly different.
   a. Tachycardia (fast) > 100 beats/min
   b. Bradycardia (slow) < 60 beats/min
   c. Asystole (absent)
   d. Arrhythmia (abnormal rhythm)
10. General technique for measuring the radial pulse: place two fingers just medial to the radial styloid head, on the palmar surface of the distal forearm. Gently increase pressure until a pulse is felt. Be patient - some patients with slow heart rates will only have a heart beat every 1 to 1.5 seconds.

C. Respirations
1. Factors affecting rate
   a. Exercise
   b. Disease
   c. Smoking history
   d. Age
      --decreasing elasticity of the lungs
      --impaired gaseous exchange
2. Depth of respirations
   a. Deep or shallow
3. Rhythm
   a. Regular
      i. Normal rate 16-20 per minute
      ii. Tachypnea (rapid breathing)
      iii. Bradypnea (slow breathing)
      iv. Apnea (absent)
   b. Irregular, i.e.:
      Cheyne Stokes-cyclical (30-40 seconds)
      i. Drug overdose
ii. Increased intracranial pressure
iii. Congestive heart failure
iv. Renal failure
v. Meningitis

4. Quality of Respirations
   a. Grunting
   b. Retractions (indicative of increased respiratory effort)
   c. Wheezing
   d. Stridor (high pitched, audible respiration)

5. General technique for obtaining respiratory rate: observe the patient for a 15 - 30 second period, while pretending to take the pulse. Watch for the chest or shoulders to rise and fall with each breath, or the nostrils to flare slightly. Multiply the number of breaths by 2 or 4 as appropriate.

D. Blood Pressure
1. Obtaining blood pressure is a skill and is only mastered with regular practice. The following outline is intended merely as a framework on which to build this skill.
2. Direct measures can be obtained by arterial lines.
3. Two types of indirect measuring equipment
   a. Aneroid manometer (dial)
   b. Mercury manometer (column)
4. Contraindications: generally BP cuffs should not be applied to arms:
   a. containing vascular shunts
   b. with possible lymphatic disruption/edema - i.e. post-mastectomy
   c. with severe burns, trauma, open wounds.
5. General technique for obtaining blood pressure
   a. Have the patient sit comfortably with his/her arm at heart level.
   b. Expose the upper part of the arm. *Do not attempt to auscultate through clothing.*
   c. Wrap the cuff evenly around the arm. Many cuffs have arrow indicators showing where to place them. The lower edge of the cuff should be 2 cm above the antecubital fossa. Be sure that you are using the correct sized cuff. Larger adults may require a leg cuff and children require smaller cuffs. Too small a cuff will falsely increase BP. The bladder should be long enough to encircle 2/3-3/4 of the upper arm circumference.
   d. Palpate the brachial artery in the antecubital fossa and place the diaphragm of the stethoscope over this artery.
   e. Inflate the cuff to a level of about 20 mmHg above the last heard sound (usually estimated) or the point at which the radial pulse is no longer felt. Do not over-inflate as this is painful to the patient.
   f. Slowly release the air valve on the inflation bulb and allow the air to escape at a rate of about 2mm for each heartbeat. If you go too fast, you will measure the BP inaccurately.
   g. Listen for the first sound (systolic pressure) and record it mentally. Then, listen for the point where the sound disappears in adults or becomes muffled in children (diastolic pressure) and record it mentally. This should represent your two measurements for blood pressure.
   h. If you miss or need to repeat, wait at least one minute before repeating on the same arm. You may double-check yourself by using the other arm.

- Weight and Height
  Obesity is a risk factor for many diseases including heart disease, hyperlipidemia, hypertension, diabetes, sudden death, sleep apnea, and osteoarthritis. Accurate weight and height measurements allow the clinician to calculate a patient’s BMI.
III. Examination of the Arm

A. Wrist examination
   1. Symmetry (old trauma)
   2. Palpation, identifying normal and abnormal structures (i.e. ganglion cysts)
   3. Range of motion
   4. Pulses/perfusion
   5. Specific tests
      a. Finkelstein's test - thumb in fist, forced ulnar deviation of hand, to look for DeQuervain's tenosynovitis
      b. Tinel's sign - tapping on the palmaris longus tendon to compress the median nerve - elicits tingling in the distal distribution of the median nerve (palmar surface of digits 1-3).
      c. Phelan's sign - wrists fully flexed to 90 degrees, backs of hand held together for 30-60 seconds. Positive sign is tingling, pain, or numbness in the distribution of the median nerve at the end of that period.
   6. Test for relative muscle strength of forearm flexors and extensors - wrist cocked up or down, examiner tries to flex or extend hand against resistance.

B. Hand Exam
   1. Symmetry (thenar atrophy)
   2. Palpation
   3. Range of motion
   4. Assessment of strength
      a. Grip strength - finger adduction and flexion (both hands simultaneously)
      b. Finger abduction: fingers spread, examiner tries to squeeze adjacent digits together
   5. Assessment of sensation
      a. Pain
      b. Temperature
      c. Light touch
   6. Ulnar deviation and other common abnormalities

C. Deep Tendon Reflexes
   1. Biceps
   2. Brachioradialis
Complete the vitals section of the physical exam with two students, then proceed to the wrist examination, hand examination and examination of deep tendon reflexes with your physical examination partner. Record your observations below.

**Physical Exam Checklist**

<table>
<thead>
<tr>
<th>Vitals (determine for 2 “patients”)</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radial pulse</td>
<td>Patient 1</td>
</tr>
<tr>
<td>Respiratory rate</td>
<td>Patient 1</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Patient 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wrist Examination (1 “patient”)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection for symmetry</td>
<td></td>
</tr>
<tr>
<td>Palpation</td>
<td></td>
</tr>
<tr>
<td>Range of Motion</td>
<td>Flexion___ Extension___ Supination___ Pronation___ Ulnar Dev___ Radial Dev___</td>
</tr>
<tr>
<td>Tests of strength</td>
<td>Flexion____ Extension________</td>
</tr>
<tr>
<td>Specific Tests</td>
<td>Finklestein’s_____ Tinel’s_______ Phalen’s_____</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hand Examination (1 “patient”)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection for symmetry</td>
<td></td>
</tr>
<tr>
<td>Palpation</td>
<td></td>
</tr>
<tr>
<td>Tests of strength</td>
<td>Finger Adduction____ Finger Abduction____</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deep Tendon Reflexes (1 “patient”)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biceps________ Brachioradialis______</td>
<td></td>
</tr>
</tbody>
</table>
Clinical Case Simulation: Uncomfortable Arm
(return visit after 1 month)

Setting: Fully equipped group practice office of board certified primary care physicians.

Patient: Ms. Linda Samples, a 41-year-old woman.

Chart note by MA: “Follow-up on arm. Still painful.”
Progress notes

Patient name: Linda Samples

Assessment: ________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

Plan: _______________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

Name____________________________________, M1
Signature_________________________________
Thursday, December 8, 2016

8:00 am – 12:00 pm (as assigned for your small group)

Small Group 4
    Acute Illness – Sore throat/Pediatrics

Question:

*How do we make a diagnosis and treatment plan for a complaint of sore throat?*

Key Points:
- There are unique aspects of interviewing the pediatric patient.
- It is important to develop an organized method of formulating a differential diagnosis, which subsequently guides medical decision-making.

Learning Objectives:
1. Practice interviewing a child, accompanied by the parent, who presents with a sore throat.
2. Discuss and compare methods of decision-making used by physicians (pattern recognition (non-analytic reasoning), scheme inductive reasoning (algorithmic) and the hypothetico-deductive model (analytic reasoning))
3. Practice generating a problem list and developing a differential diagnosis using the hypothetico-deductive approach.
4. Discuss the use of a mnemonic to help develop a differential diagnosis.
5. Use a clinical practice guideline to both identify and treat Group A beta hemolytic streptococcus as the etiology of pharyngitis
6. Understand how physicians use clinical reasoning skills to create problem lists and differential diagnoses.
7. Demonstrate the proper format for an oral case presentation.

NOTE: students should review *The Pediatric Interview* lecture from 11/15/16 to prepare for SG 4.
Methods of clinical reasoning:
There are three methods described that can be used in clinical decision-making:

1. **Pattern recognition (non-analytic)** is "instantaneous realization that the patient's presentation conforms to a previously learned picture or pattern of disease" (Sackett, 1985), and is used most successfully by experienced physicians. Utilizes "illness scripts" which conform to key features of a clinical presentation. This may also be referred to as **Type 1 reasoning** or **intuitive reasoning**.

   **Illness scripts**
   
   CHF
   
   ↑ BP
   
   ↑ HR
   
   S3
   
   RALES
   
   + JVD
   
   EDEMA
   
   DYSPNEA
   
   ORTHOPNEA
   
   PND

   Illness scripts are aided by **semantic qualifiers**. These are paired opposing descriptors to allow you to compare/contrast diagnostic possibilities. Dyspnea may be "an **acute** (chronic) onset of shortness of breath at rest, worse when lying flat and waking the patient up in the middle of the night". Another example is pain, which can be **sharp** (dull). The semantic qualifiers **acute** and **sharp** point you in certain directions.
2. **Scheme-inductive reasoning/Algorithmic** is an algorithmic approach (flow charts, etc.). Students elicit signs/symptoms/labs/imaging that separate categories of conditions/diseases at branch points.

![Flow chart of chest pain with branches for different conditions]

3. The **hypothetico-deductive (analytic)** approach involves the generation of hypotheses, which are either "shot down" or "elevated" depending on the answers to questions and findings on the exam. This method is most appropriate for students, and is generally considered to be the most effective and efficient strategy. This may alternatively be referred to as **Type 2** reasoning or **rational** reasoning. Gaining experience through the constant use of Type 2 reasoning leads to Type 1 reasoning skills as you develop your illness scripts.

   The "**diagnostic cycle**" describes the clinical reasoning process of the hypothetico-deductive approach. The components of the cycle include:

   - **Cardiac**
     - Ischemia
     - Myocarditis
   - **Musculoskeletal**
     - Fracture
     - Costochondritis
   - **Pulmonary**
     - Pulmonary Embolism
     - Pneumonia
   - **Psychiatric**
     - Panic Attack
     - Somatization
a. inquiry,  
b. hypothesis testing, and  
c. hypothesis generation, all occurring simultaneously and leading to 
a fourth process, also occurring at the same time, namely  
d. case building.  

As described by Mengel and Fields, “once a question is asked (inquiry), the answer is used to evaluate the existing hunches (hypothesis testing). In addition, the answers to the questions can generate additional possibilities (hypotheses generation). These hypotheses bring new questions to mind and the cycle continues. At the same time, the clinician is modifying her differential diagnostic list as well as generating a summary of the clinically relevant history (case building). The result is a series of interdependent events occurring rapidly...” The cycle eventually leads the physician to a diagnostic decision by developing a rank-ordered differential diagnosis, which in turn leads to a therapeutic decision. Think of the process as if-then-but-therefore. If you have certain data from history/physical/lab/imaging, then a given hypothesis may be considered, but we test it against additional information, and therefore it is true or not.  

As you obtain or listen to the history in the small group session, document the information on the progress note form, and attempt to employ the hypothetico-deductive method to arrive at a likely diagnosis. Although your clinical knowledge is limited at this point, you may have some ideas about the cause of Lisa’s sore throat. Also remember that you have a thorough knowledge of head and neck anatomy and will be using that knowledge in this unit.
Clinical Case Simulation: Sore Throat

Setting: Fully equipped group practice office of board certified primary care physicians.

Patient: Lisa Samples, 8-year-old female (accompanied by her mother, Linda Samples).

Chart note by MA: "Sore throat."
History Form

Patient name: Lisa Samples
Primary care physician _____________________

CC

HPI

O

P

Q

R

S

T

A

A

A

PMH

Previous Illnesses/Chronic conditions

Hospitalizations

Childhood Illnesses

Past Obstetric/Gynecologic History

PSH

Meds (Rx, OTC, and CAM)

Allergies

FH

SH/OE
Patient name: Lisa Samples

Primary care physician:

**Problem List**

1. _______________________________________________________
2. _______________________________________________________
3. _______________________________________________________
4. _______________________________________________________
5. _______________________________________________________
6. _______________________________________________________
7. _______________________________________________________

**Differential Diagnoses**

1. _______________________________________________________
2. _______________________________________________________
3. _______________________________________________________
4. _______________________________________________________
5. _______________________________________________________
6. _______________________________________________________
7. _______________________________________________________

Name ________________________________, M1

Signature _______________________________
Physical Examination Skills

Both instructors and students should bring in their own otoscope, if they have one. Keep in mind how the level of difficulty of this exam will change based on the cooperation of the patient. Young children can be especially challenging.

Objective:
The student will be able to, when given a cooperative, coherent patient, elicit a history pertinent to the head and neck, perform a physical examination of the head and neck during a general exam, and record the history and physical findings. Elements of this focused physical are listed below:

A. Ear
   Perform a physical examination of the ear during a general exam.
   a. Observe the external ear for position, structure, and lesions.
   b. Palpate the external ear for texture and the mastoid and tragus for tenderness.
   c. Demonstrate proper use of the otoscope in examining the external ear canal and the tympanic membrane.
   d. Identify the normal landmarks of the tympanic membrane.
   e. Estimate auditory acuity grossly using rubbed fingers, a watch, or a whisper at 10 feet.
   f. Ensure the patient’s comfort and safety during the exam.

B. Nose and Sinuses exam
   Perform a physical examination of the nose and sinuses during the general exam.
   a. Examine the nasal mucosa, septum, and turbinates, using the proper otoscope technique.
   (Ensuring patient’s comfort and safety during the exam).
   b. Palpate the maxillary and frontal sinuses.

C. Mouth and Throat
   Perform a physical examination of the mouth and throat during the general exam.
   a. Inspect lips and floor of mouth.
   b. Inspect gums and teeth and observe occlusion of teeth.
   c. Examine the tongue including the posterolateral border.
   d. Examine the buccal mucosa and identify Stenson's Duct.
   e. Inspect the palate for structure and presence of lesions.
   f. Examine the oropharynx using a tongue blade and light, observing the posterior pharyngeal wall, anterior and posterior tonsillar pillars, palantine tonsil and the uvula.

D. Neck exam
   Perform physical examination of the neck during a general exam.
   a. Palpate important lymph node groups (anterior and posterior cervical, pre-auricular, posterior auricular, occipital, tonsillar, submental).

In addition, students should review and practice vital signs.
Constructing Your Note’s Assessment

After the group has obtained the history and the physical findings have been described, record as much of the information as is available on the progress note for Lisa Samples. You should work as a group with your instructor to develop a Problem List that can be recorded in Lisa’s chart. You will also note that like many charts, Lisa’s has spaces available to record data about her medications, allergies, and immunizations for ready reference.

Next, the process of developing a Differential Diagnosis for the primary problem, sore throat, should be undertaken. A mnemonic may be useful in organizing one’s thought process in developing a differential diagnosis. One example, using a Pathophysiologic approach, is:

INVICTOE

- Inflammatory
- Neoplastic
- Vascular
- Infectious
- Congenital
- Traumatic, Toxin
- Other
- Endocrine

An organ or system-based classification scheme could also be used. It is important to have a structured, organized approach to generating a complete differential diagnosis for patient problems.

The presence or absence of certain symptoms and signs generally associated with a clinical diagnosis will then raise or lower the likelihood of given considerations on your differential diagnosis. This should then be used to direct your diagnostic and therapeutic management plan.

Clinical Decision-Making & Practice Guidelines in Constructing Your Note’s Plan

Over the past several decades, acute pharyngitis (sore throat) as caused by both non-bacterial etiologies and by group A ß-hemolytic streptococcus (GAS) has been studied intensively to determine the most appropriate method of diagnosis and treatment. While most cases seen in primary care practice are caused by viruses, GAS is the only etiology for which antimicrobial treatment is indicated, for primary prevention of acute rheumatic fever.

Over the years, empiric therapy has resulted in a high rate of unnecessary antibiotic use and epidemiologic consequences. This method of identifying patients for treatment has also resulted in missing patients at risk for rheumatic fever. Several clinical prediction tools have been suggested, to help clinicians assess the pre-test probability that a given patient with acute pharyngitis is infected with GAS. Most of these algorithms included patient demographics, clinical symptoms reported, and clinical signs on physical examination. However, the signs and symptoms of GAS pharyngitis and viral pharyngitis overlap so broadly that precise diagnosis on clinical grounds alone is difficult. Even experienced clinicians have been shown to be unable to differentiate streptococcal pharyngitis from pharyngitis caused by other pathogens with acceptable sensitivity and specificity based on history and clinical findings alone.
### Clinical Presentation of Streptococcal Tonsillopharyngitis

<table>
<thead>
<tr>
<th>Common Findings</th>
<th>Findings Not Suggesting GAS Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms</strong></td>
<td></td>
</tr>
<tr>
<td>Sudden onset sore throat</td>
<td>Coryza</td>
</tr>
<tr>
<td>Pain on swallowing</td>
<td>Hoarseness</td>
</tr>
<tr>
<td>Fever</td>
<td>Cough</td>
</tr>
<tr>
<td>Headache</td>
<td>Diarrhea</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td></td>
</tr>
<tr>
<td>Nausea and vomiting</td>
<td></td>
</tr>
<tr>
<td><strong>Signs</strong></td>
<td></td>
</tr>
<tr>
<td>Tonsillopharyngeal erythema</td>
<td>Conjunctivitis</td>
</tr>
<tr>
<td>Tonsillopharyngeal exudates</td>
<td>Anterior stomatitis</td>
</tr>
<tr>
<td>Soft palate petechiae (&quot;doughnut&quot; lesions)</td>
<td>Discrete ulcerative lesions</td>
</tr>
<tr>
<td>Beefy, red swollen uvula</td>
<td></td>
</tr>
<tr>
<td>Anterior cervical adenitis</td>
<td></td>
</tr>
<tr>
<td>Scarlatiniform rash</td>
<td></td>
</tr>
</tbody>
</table>

These findings are noted primarily in children older than 3 years of age and adults. Symptoms and signs in younger children can be different and less specific.

For this reason, the practice guidelines issued by the American Heart Association, the American Academy of Pediatrics, and the Infectious Diseases Society of America advocate microbiological confirmation of the diagnosis by throat culture or a rapid antigen diagnostic test. The guidelines moreover recommend that a negative rapid antigen test be followed up by throat culture.


Once positive identification is made, the guidelines recommend penicillin as the drug of choice for non-allergic patients.

It is important to recognize that it is your clinical assessment of the patient based on the population from which the patient comes, the patient’s individual risk factors, the history obtained regarding symptoms, and your findings on the physical examination that should direct your application of the guidelines.