

INTERNAL MEDICINE CLERKSHIP

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General Description

Required Rotation

The **required** rotation is a four (4) week introductory, structured clinical clerkship under direct supervision designed to provide experience in diagnosing, treating, and caring for adult patients.

The Department of Internal Medicine will administer a post-rotation examination when the student has completed the **required** medicine rotation. Please refer to the section on [Post-Rotation Examination](#) and the ANGEL site, **Internal Medicine Clerkship (DO-2016)**.

Elective Rotation

The **elective** rotation is a four (4) week clerkship structured to further develop cognitive skills and application of didactic material in a clinical setting. Students taking the elective are strongly encouraged to further review core diseases/topics and presentations as noted further in this guideline. There is no post-rotation exam for the elective.

Purpose

Clinical experiences are intended to assist the student's transition from didactic to integrated clinical evaluation and patient management. In addition to gaining specific skills, the student should also develop skills in systematic medical problem-solving and patient management abilities; establish or reinforce patterns of independent learning and self-evaluation; and improve communication and medical record keeping. The student should also develop fundamental psychomotor skills by performing routine basic procedures under direct supervision.

Course Objectives

General Overview

The student should be able to:

- elicit a record of an appropriately complete, cogent and organized medical history.
- conduct and record an appropriately complete and accurate physical examination.
- communicate in an effective, efficient, and educational manner with patients and their families.
- use knowledge of the pathophysiology of signs and symptoms to establish clinical correlation with disease processes.
- formulate a reasoned differential diagnosis for each problem.
- formulate an appropriate plan for confirming the diagnosis.
- use information from texts, syllabi, and journals to study general topics related to patient's problems.
- record patient progress in the medical record; and make a verbal report to the health care team.
- communicate clearly and succinctly to colleagues and other members of the health care team.
- formulate an appropriate initial and ongoing treatment program taking into account the urgency of the patient's problems.

Technical and Interpretation Skills

Students are expected to acquire certain technical skills and interpretation that are commonly employed in medical care. Wherever possible, students are encouraged to participate in procedures under adequate supervision.

The student should be able to:

- record and interpret an ECG..
- perform venipuncture for blood specimens or intravenous therapy.
- interpret cardiac enzymes.
- interpret a complete blood count.
- interpret results of a urinalysis
- interpret bedside tests of pulmonary function.
- interpret chest x-ray findings.
- interpret arterial blood gas measurements.
- interpret common chemistry measurements (e.g. CMP, electrolytes)

General Clinical Core Competencies

The curriculum detailed in the APPENDIX (adapted from the CDIM-SGIM Core Medicine Clerkship Curriculum Guide Ver.3.0) specifies course objectives in terms of the basic *internal medicine core clinical competencies* and the specific learning objectives (knowledge, skills, and attitudes) pertinent to those competencies. Every effort should be made to integrate them into the clerkship.

CORE DISEASES AND TOPICS

Core Diseases and Topics

The Department of Medicine recommends the student review the below listed core diseases and topics in the clerkship guide as well as from Harrison's or Cecil Medicine.

Page numbers from **Internal Medicine Clerkship Guide, 3rd Ed. 2008**

- 1. Cardiovascular**
 - Ischemic heart disease (pp. 239-246)
 - Congestive heart failure (pp. 233-239)
 - Hyperlipidemia (pp. 283-289)
 - Common cardiac arrhythmias (pp. 221-233)
- 2. Endocrinology**
 - Diabetes mellitus (pp. 273-283)
 - Thyroid disease (pp. 294-301)
- 3. Gastroenterology**
 - Gastrointestinal bleeding (pp. 147-153)
 - Hepatobiliary and pancreatic disease (pp. 312-329)
- 4. Hematology/Oncology**
 - Common cancers (pp. 351-362, 563-567)
- 5. Infectious disease**
 - HIV infection and complications (pp. 383-395)
- 6. Nephrology**
 - Acute renal failure (pp. 431-438)
 - Acid-base disorders (pp. 426-431)
 - Fluid and electrolyte disorders (pp. 438-445)
 - Hypertension (pp. 445-455)
- 7. Neurology**
 - Approach to altered mental state (pp. 463-468)
 - Stroke (pp. 468-475)
- 8. Pulmonary Medicine**
 - Pneumonia (pp. 400-407)
 - COPD and asthma (pp. 496-510)
 - Venous thromboembolism (pp. 197-199, 349-351, 510-515)
- 9. Rheumatology**
 - Common musculoskeletal complaints (pp. 173-184, 185-192, 521-530)
- 10. General Internal Medicine**
 - Women's health (pp. 556-580)

Core presentations:

The Department of Medicine recommends the student review the below listed core presentations in the clerkship guide as well as from Harrison's or Cecil Medicine.

Page numbers are from **Internal Medicine Clerkship Guide, 3rd Ed. 2008**

- **Abdominal pain** (pp. 57-67)
- **Anemia** (pp. 68-75)
- **Chest pain** (pp. 76-85)
- **Cough** (pp. 86-91)
- **Depression** (pp. 487-495)
- **Dyspnea** (pp. 126-133)
- **Dysuria** (pp. 412-415)
- **Joint and muscle pain** (pp. 173-184)
- **Low back pain** (pp. 185-192)

READING ASSIGNMENTS

1. **All core topics and presentations listed above.**
2. **Primer to the Internal Medicine Clerkship** (accessed 1/7/2014)
3. **Introduction to the Medicine Clerkship** (Section 1, pp. 3-54) in Paauw's guide. This section provides a very helpful review of day-to-day inpatient and outpatient skills, communications and ethics. Practical skills include how to read EKGs, abdominal and chest films; perform basic procedures and body fluid analysis and the use of antibiotics.
4. **The COMAT-Internal Medicine Assessment Objectives, Blueprint, and Practice Examination.**
The section **Selected Specific Objectives for COMAT-Internal Medicine** lists areas that may be tested in COMAT.

POST-ROTATION EXAMINATION

Des Moines University Department of Internal Medicine requires the completion of the NBOME-COMAT Internal Medicine subject examination with a **standard score of 80 or greater**. The NBOME-COMAT exam is a web-based exam administered by the NBOME and accessed via the NBOME website. A DMU approved proctor at your rotation site must proctor your exam. This exam will provide the student an opportunity to be informed of his or her progress nationally. **The internal medicine post rotation exam must be taken on the Thursday or Friday of the last week of the required Internal Medicine rotation.** . Please refer to the section on the Angel site, [Internal Medicine Clerkship \(DO-2016\)](#).

TEXTS AND RESOURCES

Recommended Assignment Texts:

Paauw, D.S. (eds), [Internal Medicine Clerkship Guide](#), 3rd. Ed. St. Louis, Mosby, 2008.

Kasper, et al (eds), [Harrison's Principles of Internal Medicine](#) 18th Ed., McGraw-Hill, 2012. ([Available through library section of PULSE - AccessMedicine](#))

or

Goldman, et al (eds), [Cecil Medicine](#), 24th Ed., Saunders, 2011. ([Available through Library section of PULSE - MD Consult](#)).

ELECTRONIC RESOURCES

(All are available through library section of PULSE)

Evidence-Based Medicine:

- **Cochrane Library for Evidence-Based Medicine**- The Cochrane Library contains high-quality, independent evidence to inform healthcare decision-making.
- **UpToDate**[®] - an evidence-based knowledge system authored by physicians to help clinicians make the right decisions at the point of care. All UpToDate content is written and edited by a global community of 4,800 physicians, world-renowned experts in their specialties..
- **Essential Evidence Plus**- A powerful resource packed with content, tools, calculators and alerts for clinicians who deliver first-contact care.

Electronic Texts:

- **Cecil Medicine-MD Consult**
- **Harrison's Online-AccessMedicine**
- **Current Medical Diagnosis and Treatment 2014** -[AccessMedicine](#)

- **MD Consult**- Provides full-text access to approximately 40 medical textbooks, 50 medical journals, comprehensive drug information, and more than 600 clinical practice guidelines
- **eJournals A-to-Z**- Database provides link and coverage information to more than 124,000 unique titles from more than 1,100 database and e-journal packages.

Updated 1/7/2014

APPENDIX

HISTORY-TAKING AND PHYSICAL EXAMINATION

Rationale:

The ability to obtain an accurate medical history and carefully perform a physical examination is fundamental to providing comprehensive care to adult patients. In particular, the internist must be thorough and efficient in obtaining a history and performing a physical examination with a wide variety of patients, including healthy adults, adults with acute and chronic medical problems, adults with complex life-threatening diseases, and adults from diverse socioeconomic and cultural backgrounds

Specific learning objectives:

- A. Knowledge:** Students should be able to define, describe, and discuss:
1. The significant attributes of a symptom, including: location and radiation, intensity, quality, temporal sequence (onset, duration, frequency), alleviating factors, aggravating factors, setting, associated symptoms, functional impairment, and patient's interpretation of symptom. *(MK, OPP)*
 2. The four methods of physical examination (inspection, palpation, percussion, and auscultation), including where and when to use them, their purposes, and the findings they elicit. *(MK, OPP)*
 3. The physiologic mechanisms that explain key findings in the history and physical exam. *(MK, OPP)*

- B. Skills:** Students should be able to demonstrate specific skills, including:
1. Using language appropriate for each patient. *(PC, CS)*
 2. Eliciting the patient's chief complaint as well as a complete list of the patient's concerns. *(PC, CS)*
 3. Obtaining a patient's history in a logical, organized, and thorough manner, covering the history of present illness; past medical history; preventive health measures; social, family, and occupational history; and review of systems.
 4. Demonstrating proper hygienic practices whenever examining a patient. *(PC)*
 5. Performing a physical examination for a patient in a logical, organized, respectful, and thorough manner, giving attention to the patient's general appearance, vital signs, and pertinent body regions. *(PC)*
- C. Attitudes and professional behaviors:** Students should be able to:
1. Recognize the essential contribution of a pertinent history and physical examination to patient care. *(P)*
 2. Establish a habit of updating historical information and repeating important parts of the physical examination during follow-up visits. *(P)*
 3. Demonstrate consideration for the patient's feelings, limitations, and cultural and social background whenever taking a history and performing a physical exam. *(P)*

AOA Competencies:

PC = Patient Care

MK = Medical Knowledge

PLI = Practice-Based Learning and Improvement

OPP = Osteopathic Philosophy, Principles and Practice

CS = Communication Skills

P = Professionalism

SBP = Systems-Based Practice

INTERPRETATION OF CLINICAL INFORMATION

Rationale:

In the routine course of clinical practice, most physicians are required to order and interpret a wide variety of diagnostic tests and procedures. Determining how these test results will influence clinical decision making and communicating this information to patients in a timely and effective manner are core clinical skills that third-year medical students should possess.

Specific learning objectives:

A. Knowledge: Students should be able to:

1. Interpret specific diagnostic tests and procedures that are ordered to evaluate patients who present with common symptoms and diagnoses encountered in the practice of internal medicine. *(PC, MK)*
2. Take into account the important differential diagnostic considerations, including potential diagnostic emergencies. *(PC, MK)*
3. Define and describe for the tests and procedures listed:
 - Indications for testing. *(PC, MK)*
 - Critical values that require immediate attention. *(PC, MK)*
4. Independently interpret the results of the following laboratory tests:
 - CBC with diff and blood smear, UA, electrolytes, BUN/Cr, glucose, hepatic function panel, hepatitis serologies, cardiac biomarkers (e.g. CK-MB, troponin), PT/INR, PTT, thyroid function tests, arterial blood gases, pulmonary function tests *(PC, MK)*

B. Skills: Students should be able to demonstrate specific skills, including:

1. Interpreting a blood smear, Gram stain, UA, chest X-ray and UA. *(PC)*
2. Approaching ECG interpretation in a systematic and logical fashion analyzing the following: rate, rhythm, P wave morphology, PR interval, QRS width, axis, voltage, QT interval, ST segment morphology, and T wave morphology. *(PC)*
3. Recording the results of laboratory tests in an organized manner, using flow sheets when appropriate. *(PC)*

C. Attitudes and professional behaviors: Students should be able to:

1. Appreciate the importance of follow-up on all diagnostic tests and procedures and timely communication of information to patients and appropriate team members. *(P)*
2. Personally review medical imaging studies, ECGs, Gram stains, blood smears, etc. to assess the accuracy and significance of the results. *(P)*

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DIAGNOSTIC DECISION-MAKING

Rationale:

Physicians are responsible for directing and conducting the diagnostic evaluation of a broad range of patients, including patients seeking advice on prevention of and screening for disease and patients with acute and chronic illnesses. In a time of rapidly proliferating tests, medical students must learn how to design safe, expeditious, and cost-effective diagnostic evaluations. This requires well-developed diagnostic decision-making skills that incorporate probability-based thinking.

Specific learning objectives:

- A. Knowledge:** Students should be able to define, describe, and discuss:
1. Key history and physical examination findings pertinent to the differential diagnosis. (*MK, OPP*)
 2. Information resources for determining diagnostic options for patients with common and uncommon medical problems. (*MK, PLI*)
 3. How critical pathways or practice guidelines can be used to guide diagnostic test ordering. (*MK*)
- B. Skills:** Students should demonstrate specific skills, including:
1. Identifying problems with which a patient presents, appropriately synthesizing these into logical clinical syndromes. (*PC*)
 2. Identifying which problems are of highest priority. (*PC*)
 3. Formulating a differential diagnosis based on the findings from the history and physical examination. (*PC, OPP*)
 4. Using the differential diagnosis to help guide diagnostic test ordering and sequencing. (*PC*)
- C. Attitudes and professional behaviors:** Students should be able to:
1. Seek feedback regularly regarding diagnostic decision-making and respond appropriately (*P*)
 2. Recognize the importance of and demonstrate a commitment to the utilization of other health care professionals in diagnostic decision making. (*P, SBP*)

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THERAPEUTIC DECISION-MAKING

Rationale:

Internists are responsible for directing and coordinating the therapeutic management of patients with a wide variety of problems, including critically ill patients with complex medical problems and the chronically ill. To manage patients effectively, physicians need basic therapeutic decision-making skills that incorporate both pathophysiologic reasoning and evidence-based knowledge.

Specific learning objectives:

- A. Knowledge:** Students should be able to define, describe, and discuss:
1. Information resources for determining medical and surgical treatment options for patients with common and uncommon medical problems. *(MK)*
 2. How to use critical pathways and clinical practice guidelines to help guide therapeutic decision making. *(MK)*
 3. Factors that frequently alter the effects of medications, including drug interactions and compliance problems. *(MK)*
 4. Factors to consider in selecting a medication from within a class of medications. *(MK)*
 5. Factors to consider in monitoring a patient's response to treatment, including potential adverse effects. *(MK)*
 6. Methods of monitoring therapy and how to communicate them in both written and oral form. *(MK)*
- B. Skills:** Students should be able to demonstrate specific skills, including:
1. Formulating an initial therapeutic plan. *(PC)*
 2. Accessing and utilizing, when appropriate, information resources to help develop an appropriate and timely therapeutic plan. *(PC, PLI)*
 3. Writing prescriptions and inpatient orders safely and accurately. *(PC)*
 4. Counseling patients about how to take their medications and what to expect when doing so, including beneficial outcomes and potential adverse effects. *(PC, CS)*
 5. Monitoring response to therapy. *(PC)*
- C. Attitudes and professional behaviors:** Students should be able to:
1. Incorporate the patient in therapeutic decision making, explaining the risks and benefits of treatment. *(CS, P)*
 2. Respect patient's informed choices, including the right to refuse treatment. *(P)*
 3. Recognize the importance of and demonstrate a commitment to the utilization of other healthcare professionals in therapeutic decision making. *(P, SBP)*

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CASE PRESENTATION SKILLS

Rationale:

Communicating patient care information to colleagues and other health care professionals is an essential skill regardless of specialty. Students should develop facility with different types of case presentations: written and oral, new patient and follow-up, inpatient and outpatient.

Specific learning objectives:

- A. Knowledge:** Students should be able to define, describe, and discuss components of comprehensive and abbreviated case presentations (oral and written) and settings appropriate for each. *(MK)*
- B. Skills:** Students should be able to demonstrate specific skills, including:
1. Prepare legible, comprehensive, and focused new or follow-up patient workups that include the following features as clinically appropriate:
 - Concise history of the present illness organized chronologically with minimal repetition, omission, or extraneous information, and including pertinent positives and negatives. *(PC, CS)*
 - A comprehensive physical examination with detail pertinent to the patient's problem. *(PC, CS, OPP)*
 - A succinct, prioritized, and, where appropriate, complete list of all problems identified by the history and physical examination. *(PC, CS, OPP)*
 - A differential diagnosis for each problem (appropriate for the student's level of training). *(PC, CS)*
 - A diagnostic and treatment plan for each problem (appropriate for the student's level of training). *(PC, CS, OPP)*
 2. Orally present a new or follow-up inpatient's or outpatient's case in a logical manner, chronologically developing the present illness, summarizing the pertinent positive and negative findings as well as the differential diagnosis and plans for further testing and treatment. *(PC, CS)*
- C. Attitudes and professional behaviors:** Students should be able to:
1. Demonstrate ongoing commitment to improving case presentation skills by regularly seeking feedback on presentations. *(PLI, P)*
 2. Accurately and objectively record and present all data. *(P)*

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