



RHEUMATOLOGY CLERKSHIP

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General Description

Elective Rotation

This elective rotation of four (4) weeks in a rheumatology clerkship is intended to be a structured clinical experience under direct supervision. In a short time, all of rheumatology cannot possibly be covered. This must, therefore, be considered an introductory experience. This rotation is a time to build a foundation in clinical problem-solving and decision-making; a time to build clinical experience and acumen on a foundation of didactic information. A post-rotation examination is *not* required.

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 skill in systematic medical problem-solving and patient management abilities; establish or reinforce patterns of independent learning and self-evaluation; and improve skills in communication and medical record keeping. Under supervision, students are expected to assist in the management of acute and chronic rheumatologic problems. The student should also develop fundamental psychomotor skills by performing routine basic procedures under direct supervision.

COURSE OBJECTIVES

General Overview

At the completion of the rheumatology rotation, the student should demonstrate development and expansion of competence in the following:

- Obtain proficiency in performing a comprehensive musculoskeletal exam.
- Based upon history, physical examination, laboratory data and radiographs, generate a reasonable differential diagnosis for both monoarticular and polyarticular presentations of arthritis.
- Become familiar with and proficient in the use of an expanded history of present illness and review of systems pertinent to musculoskeletal and rheumatic disorders
- Understand the usefulness and limitations of immunologic testing (e.g. – antinuclear antibodies in rheumatic disease.)
- Gain an understanding of indications for arthrocentesis, how it is performed and synovial fluid analysis.
- Acquire an understanding of the use of oral, parenteral and intra-articular corticosteroids,

nonsteroidal anti-inflammatory agents and immunosuppressive agents in rheumatic disease.

- Recognize indications for use and major untoward effects of drugs and the monitoring for drug toxicity..
- Learn the indications for and interpretation of bone densitometry
- Become familiar with and be able to instruct patients in the use of the main modalities of physical therapy and joint protection.

The curriculum detailed below (adapted from the CDIM-SGIM Core Medicine Clerkship Curriculum Guide Ver.3.0) specifies and prioritizes 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 rheumatology clerkship.**

Detailed General Clinical Competencies

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 rheumatologic 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 rheumatologic 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*)
 5. Communicating the prioritized differential diagnosis to the patient and his or her family. (*CS*)
- C. Attitudes and professional behaviors:** Students should be able to:
1. Incorporate the patient's perspective into diagnostic decision making. (*P*)
 2. Seek feedback regularly regarding diagnostic decision-making and respond appropriately (*P*)
 3. Recognize the importance of and demonstrate a commitment to the utilization of other health care professionals in diagnostic decision making. (*P, SBP*)

AOA Competencies:

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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. Internists have traditionally given special attention to case presentation skills because of the comprehensive nature of patient evaluations and the various settings in which internal medicine is practiced. 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 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 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*)
 3. Orally present a follow-up patient's case, in a focused, problem-based manner that includes pertinent new findings and diagnostic and treatment plans. (*PC, CS*)
 4. Select the mode of presentation that is most appropriate to the clinical situation (e.g. written vs. oral, long vs. short, etc.). (*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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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 in patients with a wide variety of acute and chronic rheumatologic problems. The optimal selection of diagnostic tests, choice of treatment, and use of subspecialists, as well as the physician's relationship and rapport with patients, all depend on well-developed history-taking and physical diagnosis skills. These skills, which are fundamental to effective patient care, should be a primary focus of the student's work during the rheumatology clerkship.

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)*
 4. The diagnostic value of the history and physical examination. *(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 (including usual source of and access to health care, childhood and adult illnesses, injuries, surgical procedures, obstetrical history, psychiatric problems, hospitalizations, transfusions, medications, tobacco and alcohol use, and drug allergies), preventive health measures, social, family, and occupational history, and review of systems.
 4. Demonstrating proper hygienic practices whenever examining a patient. *(PC)*
 5. Properly positioning the patient and self for each part of the physical examination. *(PC)*
 6. 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)*
 7. Adapting the scope and focus of the history and physical exam appropriately to the medical situation and the time available. *(PC)*

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- 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)*

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 rheumatology. *(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)*
 - Pathophysiologic implications of abnormal results. *(PC, MK)*
 4. Independently interpret the results of the following laboratory tests:
 - CBC, ANA, extractable nuclear antigens, anti-double stranded DNA, rheumatoid factor, erythrocyte sedimentation rate, complement, human leukocyte antigens (B-27, DR-4, etc), serum iron, TIBC, ferritin, transferrin, UA, electrolytes, BUN/Cr, glucose, hepatic function panel, uric acid, synovial fluid analysis *(PC, MK)*
- B. Skills:** Students should be able to demonstrate specific skills, including:
- 1.. 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 and laboratory studies to assess the accuracy and significance of the results. *(P)*

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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 rheumatologic diseases. 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 rheumatologic diseases. *(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. Demonstrate an understanding of the importance of close follow-up of patients under active care. *(P)*
 4. Recognize the importance of and demonstrate a commitment to the utilization of other health care professionals in therapeutic decision making. *(P, SBP)*

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RHEUMATOLOGY DISEASES AND TOPICS

The student is responsible for reviewing these topics during the rheumatology elective. Introductory information can be found in Internal Medicine Clerkship Guide, 3rd Ed. by Paauw* and in MKSAP for Students 4[†], assigned for Year 3 General Internal Medicine clerkship.

- Rheumatology (pp. 291-314[†])
- Joint and Muscular Pain (pp. 173-184*)
- Low Back Pain (185-192*)
- Gout (pp. 521-523*)
- Rheumatoid Arthritis (pp. 524-530*)
- Systemic Lupus Erythematosus (pp. 530-534*)
- Vasculitis (pp. 534-543*)

Students are encouraged to supplement these basic discussions by reference to Cecil Textbook of Medicine 23rd Ed or Harrison's Principles of Internal Medicine, 17th Ed. and current clinical papers from refereed journals.

- Osteoarthritis
- Rheumatoid arthritis
- Systemic lupus erythematosus
- Crystalline arthropathies (gout, pseudogout, hydroxyapatite)
- Soft tissue rheumatism (fibromyalgia)
- Osteoporosis and metabolic bone disease
- Occupational/Sports related overuse syndromes
 - Achilles tendonitis
 - Iliotibial band syndrome
 - Rotator cuff disease
 - Lateral epicondylitis
 - Plantar fasciitis
 - Trochanteric bursitis
- Polymyalgia rheumatica
- Septic arthritis
 - gonococcal
 - non-gonococcal
 - Lyme
- Seronegative spondyloarthropathies
 - Reiter's syndrome
 - Ankylosing spondylitis
 - Reactive arthritis
 - Psoriatic arthritis
- Diffuse connective tissue diseases
 - Scleroderma/CREST
 - Sjögrens syndrome
 - Mixed connective tissue disease
 - Polymyositis/dermatomyositis
- Vasculitis
 - Giant cell arteritis
 - Hypersensitivity vasculitis
 - Polyarteritis nodosa
 - Wegener's granulomatosis
- Antiphospholipid syndrome

Implementation

Course objectives are to be accomplished in a College affiliated hospital or clinical facility, under supervision. Course objectives should be covered during the rotation to assure adequate student preparation for Board examinations and other evaluations such as post-rotation examinations. The use of diverse methods appropriate to the individual and the clinical site are encouraged, but patient-centered teaching is optimal.

Didactic methods to achieve required objectives include:

- Reading assignments
- Lectures
- Computer-assisted programs (if available)
- Student attendance at/participation in formal clinical presentations by medical faculty

Clinically oriented teaching methods may include:

- Assignment of limited co-management responsibilities under supervision
- Participation in clinic visits, daily patient rounds and conferences
- Supervised and critiqued clinic work-ups of patients admitted to the service
- Assigned, case-oriented reading case presentations

Three levels of achievement are identified:

- Familiarity with a variety of medical procedures through observation and assisting
- Proficiency in clinical procedures through actual supervised performance
- Awareness of the availability of various medical procedures and their use

At the beginning of the rotation, the physician/mentor should review expectations/guidelines of performance with the student. On the last day of service, the supervising physician should review the student's performance with the student and have the student sign the evaluation form before submission. A student's signature simply indicates that the student has received a grade directly from the attending; it does not indicate agreement with the grade. Evaluations of students must be completed within two weeks of completion of the rotation.

TEXTS AND RESOURCES

Required Assignment Texts:

Klippel, J.H. et al, (Eds), Primer on the Rheumatic Diseases, 13th Ed. New York, Springer, 2008.

Facui, et al (eds), Harrison's Principles of Internal Medicine 17th Ed., McGraw-Hill, 2008. (Available through DMU Library Portal-AccessMedicine)

or

Goldman, et al (eds), Cecil Textbook of Internal Medicine, 23rd Ed., Saunders, 2008. (Available through DMU Library Portal-MD Consult)

Paauw, DS. (eds), Internal Medicine Clerkship Guide, 3rd Ed., St. Louis, Mosby, 2008.

American College of Physicians, MKSAP for Students 4, 4th Ed., Philadelphia, ACP, 2008.

READING ASSIGNMENTS

1. **Review all core topics and diseases listed above.**
2. In-depth reading of individual diseases and disorders listed above.

ELECTRONIC RESOURCES

(Available through DMU library portal)

Evidence-Based Medicine:

- **ACP's PIER-Stat!** Ref- PIER© is a collection of over 400 evidence summaries published by the American College of Physicians. Each module provides authoritative guidance to improve the quality of care.
- **Cochrane Library for Evidence-Based Medicine**-The Cochrane Library contains high-quality, independent evidence to inform healthcare decision-making.
- **DynaMed**-Point-of-care reference resource designed to provide doctors and medical researchers with the best available evidence to support clinical decision-making
- **Essential Evidence Plus**-A powerful resource packed with content, tools, calculators and alerts for clinicians who deliver first-contact care.
- **ACP Medicine**-ACP Medicine is a comprehensive, evidence-based reference for fast, current answers on the best clinical care.

Electronic Texts:

- **Cecil's Textbook of Medicine**-MD Consult
- **Harrison's Online**-AccessMedicine
- **Current Medical Diagnosis and Treatment 2010** -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
- **Ebsco 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.
- **The Medical Letter on Drugs and Therapeutics**- An independent, peer-reviewed, nonprofit publication that offers unbiased critical evaluations of drugs, with special emphasis on new drugs.

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