

**CURRICULUM ON GENERAL INPATIENT MEDICINE
UCHSC INTERNAL MEDICINE RESIDENCY PROGRAM
PRESBYTERIAN ST-LUKE'S MEDICAL CENTER**

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I. Educational Purpose and Goals

Management of hospitalized patients remains essential for the practice of internal medicine. The inpatient medicine rotation at Presbyterian St-Luke's Medical Center consists of a combined internal medicine ward and intensive care unit experience that is intended to provide exposure to a broad range of disease processes and medical problems seen in the hospitalized patient. The educational objectives for the resident during this rotation are as follows:

- 1) development of skills in the independent evaluation of patients through comprehensive history and physical examination and selection of appropriate diagnostic tests under the supervision of an attending physician in the inpatient setting
- 2) formulation of comprehensive patient management plans, including discharge planning
- 3) interaction with a broad range of subspecialty services/consultants to assist in the management of patients with complex conditions
- 4) development of procedural skills that are essential to the practice of internal medicine
- 5) exposure to medical consultation issues for the surgical patient

II. Principal Teaching Methods

a. Supervised Direct Patient Care:

i. Residents encounter patients admitted to the medical teaching service on any of the following units: general medicine wards/telemetry units, oncology/bone marrow transplant unit, and intensive care unit. The patient population is obtained from the following sources: hospital emergency room, internal medicine residency outpatient clinic based at PSL, the practices of any supervising internal medicine/subspecialty physician with admitting privileges to the teaching service, and a number of outreach clinics in the surrounding states. All patient care is supervised by the admitting attending physician to include admission histories, physical exams, daily management, diagnostic/therapeutic procedures and discharge plans.

ii. Organizational structure: The medical teaching service consists of four teams composed of 1 UCHSC PGY-2 or PGY-3 internal medicine resident, 1 UCHSC PGY-1 internal medicine resident, and 1 transitional year intern, as well as 1-2 third or fourth year medical students. Each team is supervised by a fulltime faculty member. The residents receive direct supervision from the

admitting attending physician through daily communication regarding all patient care and management issues.

b. Formal Educational Rounds

i. Teaching Daily Attending Rounds are provided by General Internal Medicine (High St. Hospitalists and High St. Primary Care Physicians) faculty based at PSL. Residents present cases and demonstrate requested skills at a bedside evaluation. These mandatory rounds involve critical critique and discussion assimilating basic science knowledge, clinical data, pathophysiology, and evidence based principles. The teaching attendings provide didactic sessions and evidence based medicine review in addition to bedside rounds. The bedside component includes review of residents' history and physical examination skills on selected patients as well as their communication and interpersonal skills.

ii. Morning Report:

Morning report is held daily at 10:30 AM and is primarily run by the CMR with input from the site director or at least one assigned teaching attending that is present daily. Attendance at morning report is mandatory for all inpatient medicine rotating residents. The MR format includes presentation of selected patients admitted in the previous 1-3 days followed by an evidence based discussion of diagnosis/management and occasional review of the literature. An x-ray and ECG is also presented by the CMR prior to the case presentations for interpretation by the residents in a rotating fashion. MR also serves as a forum for discussion of difficult management issues selected by the residents. A librarian attends MR daily and is available to provide literature reviews to answer specific questions as necessary.

c. Conferences/Didactic Sessions

- i. Core curriculum Noon Conference: This conference is held 3-4 days a week for 1 hour and includes presentation of a broad range of internal medicine issues encountered in both the inpatient and outpatient settings. Interactive discussion with the residents is included in all presentations.
- ii. Pathology Conference: Pathologic specimens from selected patients admitted during the month are reviewed with a staff pathologist on a monthly basis; clinical history and management discussion is provided by the residents and chief medical resident or site director. Findings from all autopsy reports for the month are also presented and discussed at this conference.
- iii. Tumor Board: This monthly conference is a multidisciplinary effort sponsored by the Hematology/Oncology service which

fouses primarily on oncology cases admitted to the medical teaching service.

- iv. Grand Rounds: Department of Medicine Grand Rounds are held weekly at the UCHSC and are provided at PSL in videotape format. Independent grand rounds are also held weekly at PSL and include a quarterly presentation by the chief medical resident in the format of a CPC or morbidity and mortality conference.

III. Educational Content

- a. Mix of Diseases –The patient population possesses a variety of conditions representative of common as well as less frequently encountered medical problems, represented by all the medical subspecialties as well as neurology. General Medicine rotation residents act both as primary inpatient physicians and as medical consultants for patients admitted to non-medical specialty services.
- b. Patient characteristics – Patients admitted to the teaching service are derived from the following sources: emergency room, direct admits from physicians with teaching service privileges, outreach clinics in rural Colorado and surrounding states, and the High St residency ambulatory clinic. Patients may be admitted to the general medicine ward, telemetry units, Bone Marrow Transplant and Oncology units, or an open 23 bed ICU. Inpatient Medicine rotating residents also see patients on surgical, obstetric/gyn, or subspecialty services when medical consultation is requested. Primary neurologic patients are admitted to the General Medicine service, such that residents care for a wide array of acute and chronic neurologic conditions. The demographic and ethnic mix approximates that of the greater Denver community and the extensive socioeconomic diversity of the area supports a challenging training experience. The hospital’s outreach efforts in surrounding rural communities also contributes to the diversity of the current population.
- c. Learning venue:
 - i. Presbyterian-St. Luke’s Medical Center is a tertiary care facility in central Denver with 680 licensed beds (350 actual beds) and a full complement of specialty services, including the largest bone marrow transplant program in the state. In addition to serving the greater Denver area, the hospital is a referral center for a number of rural communities throughout Colorado as well as the surrounding states of Kansas, Nebraska, and Wyoming.
- d. Procedures:
 - i. Procedural experience reinforced on this inpatient medicine rotation include but are not limited to:
 1. Arterial puncture
 2. Basic and advanced cardiac life support
 3. Lumbar puncture
 4. Abdominal paracentesis

5. Thoracentesis
 6. Arthrocentesis
 7. Nasogastric intubation
 8. Central venous catheter placement
 9. Endotracheal intubation
- ii. Interpretive skills that are reinforced or learned on general ward medicine services include:
 1. Serum electrolytes and routine chemistry panel
 2. Urinalysis and microscopic examinations of urine
 3. Liver function tests
 4. Coagulation studies
 5. Arterial blood gases
 6. Chest x-ray interpretation
 7. Electrocardiogram
 8. Interpretation of radiological studies (chest x-ray, abdominal flat plate, CT scan)
 9. Peripheral smear
 10. Sputum Gram Stain
 11. Spirometry
 - iii. Consultative skills: Residents serve as supervised consultants to other specialties during the core General Medicine inpatient rotations.
- e. Ancillary services interacted with
- i. Subspecialist and Primary Care Community Physicians
 - ii. Transitional year training program residents
 - iii. Nursing staff
 - iv. Nurse practitioners and physician assistants
 - iv. Case Management, social workers
 - vi. Physical Therapy and Occupational Therapy
 - vii. Respiratory Therapy
 - viii. Numerous other ancillary staff – clinical, administrative, and paraprofessionals
- f. Structure of rotation
- i. Call is a required element of the inpatient service and occurs every fourth day. Responsibilities for residents are detailed in the resident manual. PGY-1 or PGY-2 residents evaluate patients for admission from the emergency department and supervise first year residents in the admission and ongoing management of patients.
 - ii. Inpatient medicine service residents begin the day at 7:30 AM.. Following this, the teams will participate in teaching rounds with the assigned teaching attending. Residents are required to communicate daily with the attending physician of record to discuss all management plans. Residents and interns start times on call days are staggered in order to abide by ACGME work environment rules which are monitored very closely.

Morning report is mandatory for all residents at 10:30 AM daily. Required conferences are discussed above. A sample daily schedule is attached at the end of the document. Resident work hours are fully described in the resident manual and compliant with all ACGME duty hour restrictions.

iii. The teams work directly with a Transitions of Care Coordinator in arranging patient education, medication reconciliation and appropriate discharge planning and follow-up on all patients admitted to the High St. Hospitalist service.

	Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
7:30-9:00am	Pre-round /Teaching Rounds	Pre-round /Teaching Rounds	Pre-round /Teaching Rounds	Pre-round /Teaching Rounds	Pre-round /Teaching Rounds	Round with HSH hospitalist/private attendings
9:00-10:30am	Patient Care	Patient Care	Patient Care	Patient Care	Patient Care	Patient Care
10:30-11:30am	Morning Report	Morning Report	Morning Report	Morning Report	Morning Report	Patient Care
12:00-1:00pm	Core Noon Conference	Core Noon Conference	UH Grand Rounds	Noon Conference	P/SL Grand Rounds	Patient Care

IV. Principal Ancillary Educational Materials

- a. All residents and managing physicians are provided with the General Medicine Curriculum and Learning Objectives prior to the start of each rotation.
- b. Residents are provided with targeted reading in primary literature sources by Teaching Attending physicians throughout the rotation.
- c. Library access is available daily and comprehensive librarian services are available from 8-5 PM on weekdays. A librarian attends morning report daily to provide literature searches at the request of the CMR or attending physicians. Web-based searchable medical databases are available through the library, the intern lounge and standard medical journals are available in both print and electronic formats. UpToDate is available on all P/SL based computers.
- d. Computer-based resources are available at the hospitals to facilitate patient care, education and communication. The following are made available:

1. Meditech system for vital signs, patient care notes, laboratory and radiology results retrieval
 2. Drug information including side effect and drug-drug interactions
 3. E-mail services
 4. Internet access to medical sites on the World Wide Web
 5. Patient education materials
- e. All radiologic studies are available on a digital computerized PACS system.

V. Evaluation Methods

a. Resident Performance

- i. Faculty complete web-based electronic resident evaluation forms provided by the Internal Medicine Residency office. The evaluation is competency-based. The evaluation is shared with the resident, is available for review by the resident at their convenience, and is internally reviewed by the residency office. The evaluation is part of the resident file and is incorporated into the semiannual performance review for directed resident feedback.
- ii. Resident performance is additionally reviewed monthly at the Internal Medicine Housestaff Evaluation Committee meeting which is attended by all faculty physicians, the CMR and program directors. All private admitting attending physicians, nursing staff and administration are invited to attend and provide feedback. Case management also is available to provide feedback on resident interactions for this meeting as part of a systems based practice evaluation.
- ii. Residents electronically record completed procedures. The supervising physician verifies the resident understands the procedure's indications, contraindications, complications and interpretation.
- iv. Chart audits are conducted periodically by the teaching attending on at least one resident-generated document each rotation, with specific feedback given to the resident on data-gathering and documentation skills.

b. Program and Faculty Performance

- i. At the end of the rotation all residents complete a written evaluation that assesses the faculty, admitting attending physicians, facilities and service experience. Anonymous evaluations are reviewed by the site director and attending faculty physicians at the monthly Internal Medicine Housestaff Evaluation Committee meeting.
- ii. All admitting attending physicians are evaluated monthly on the basis of teaching capability and humanistic qualities, and they receive quarterly aggregate summary evaluations and scores that can

be compared to the mean for their peers. Any physician receiving a score of 6 or less for a quarter is contacted by the site director; failure to improve on subsequent evaluations may result in termination from the teaching service.

VI. Institutional Resources: Strengths and Limitations

a. Strengths

- i. Faculty. GIM faculty with dedicated teaching roles and a history of educational excellence.
- ii. Facilities. The hospital offers comprehensive internal medicine and subspecialty tertiary care with state-of-the-art technology and strong ancillary services. PSL has the largest bone marrow transplant program in the state and the only hospital based hyperbaric oxygen chamber in Denver.
- iii. Patients. There is a diverse patient population with varied case mix.

b. Limitations

- i. Communications with multiple admitting community attendings may be time inefficient.
- ii. Facilities and technology. Some advanced technology is not available (i.e. ECMO, solid organ transplant other than kidney) making patient transfer necessary on occasion.

VII. Rotation Specific Competency Objectives

a. Patient Care

- i. History taking. Residents at all levels of training will collect a thorough history by soliciting patient information and by consulting other sources of primary data in a logical and organized fashion. History taking will be hypothesis driven. Interviewing will adapt to the time available, use appropriate nonverbal techniques, and demonstrate consideration for the patient. The resident will inquire about the emotional aspects of the patient's experience while demonstrating flexibility based on patient need.
- ii. Physical Exam. Residents at all levels of training will perform a comprehensive physical exam, describing the physiological and anatomical basis for normal and abnormal findings.
- iii. Charting. Residents at all levels of training will record data in a legible, thorough, systematic manner.
- iv. Procedures.
 1. PGY-1 and PGY-2 residents will demonstrate knowledge of: procedural indications, contraindications, necessary equipment, specimen handling, patient after-care, and risk and discomfort minimization. They will participate in informed consent and assist patients with decision making. They will correctly identify the meaning of test results.

- PGY1 residents will initially observe and then perform procedures prior to the completion of the first training year.
2. PGY-3 residents will demonstrate extensive knowledge and facility in the performance of procedures while minimizing risk and discomfort to patients. They will assist their junior peers in skill acquisition.
- v. Medical Decision Making, Clinical Judgment, and Management Plans. All residents will demonstrate improving skills in assimilating information that they have gathered from the history and physical exam.
1. PGY-1 residents will be able to identify patients' problems and develop a prioritized differential diagnosis. Abnormal findings will be interrelated with altered physiology. They will understand their limitation of knowledge and seek the advice of more advanced clinicians. PGY-1 residents will begin to develop therapeutic plans that are evidenced or consensus based. Residents will establish an orderly succession of testing based on their history and exam findings. Specific organ dysfunction will be anticipated based on known side effects of therapy. Additionally, residents will understand the correct administration of drugs, describe drug-drug interactions, and be familiar with expected outcomes.
 2. PGY-2 residents will also regularly integrate medical facts and clinical data while weighing alternatives and keeping in mind patient preference. They will regularly incorporate consideration of risks and benefits when considering testing and therapies. They will present up-to-date scientific evidence to support their hypotheses. They will consistently monitor and follow-up patients appropriately. They will develop plans to avoid or delay known treatment complications and be able to identify when illness has reached a point where treatment no longer contributes to improved quality of life.
 3. PGY-3 residents will demonstrate the above and in addition, will demonstrate appropriate reasoning in ambiguous situations, while continuing to seek clarity. Residents at this level of training will not overly rely on tests and procedures. PGY-3 residents will continuously revise assessments in the face of new data.
- vi. Patient counseling
1. PGY-1 residents will be able to describe the rationale for a chosen therapy and will be able to describe medication side effects in lay terms. They will assess patient understanding and provide more information when necessary. Residents will demonstrate the ability to be a patient advocate.

2. PGY-2 residents, in addition to the above, will be able to explain the pros and cons of competing therapeutic interventions. PGY-2 residents will be expected to counsel patients regarding adverse habits. PGY-2 residents will be able to educate patients and families for enhanced compliance.
3. PGY-3 residents, in addition to the above, will effectively communicate with critically ill patients and those making life-style modifications.

b. Medical Knowledge.

1. PGY-1 Residents will consistently apply current concepts in the basic sciences to clinical problem solving. They will use information from the literature and other sources including electronic databases. PGY-1 residents will demonstrate satisfactory knowledge of common medical conditions, sufficient to manage urgent complaints with supervision. Residents must exhibit sufficient content knowledge of common conditions to provide care with minimal supervision by completion of the PGY1 year.
2. PGY-2 residents will demonstrate a progression in knowledge and analytical thinking in order to develop well-formulated differential diagnoses for multi-problem patients. They will also demonstrate socio-behavioral knowledge.
3. PGY-3 residents in addition to the above will demonstrate appropriate habits to stay current with new medical knowledge, and will exhibit knowledge of effective teaching methods.

c. Interpersonal and Communication Skills.

1. PGY-1 residents will develop and refine their individual style when communicating with patients. They will strive to create ethically sound relationships with patients, the physician team and supporting hospital personnel. They will create effective written communications through accurate, complete, and legible notes. They will exhibit listening skills appropriate to patient-centered interviewing and communication. Residents will recognize verbal and nonverbal cues from patients.
2. PGY-2 residents will also exhibit team leadership skills through effective communication as manager of a team. PGY2 residents are expected to assist junior peers, medical students, and other hospital personnel to form professional relationships with support staff. Residents will respond to feedback in an appropriate manner and make necessary behavioral changes. PGY-2 residents will be able to

communicate with patients concerning end-of-life decisions.

3. PGY-3 residents should additionally be able to successfully negotiate nearly all “difficult” patient encounters with minimal direction. Third year residents should function as team leaders with decreasing reliance upon attending physicians.

d. Professionalism.

All residents will demonstrate integrity, accountability, respect, compassion, patient advocacy, and dedication to patient care that supercedes self-interest. Residents will demonstrate a commitment to excellence and continuous professional development. They will be punctual and prepared for teaching sessions. Residents will demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, and informed consent. Residents are expected to show sensitivity and responsiveness to patients’ culture, age, gender and disabilities.

e. Practice Based Learning and Improvement

1. PGY-1 residents will use hospital and University library resources to critically appraise medical literature and apply evidence to patient care. They will use hand-held computers, desktop PC’s and Internet electronic references to support patient care and self-education. They will model these behaviors to assist medical students in their own acquisition of knowledge through technology.
2. PGY-2 residents will in addition consistently seek out and analyze data on practice experience, identify areas for improvement in knowledge or patient care performance and make appropriate adjustments. They will regularly demonstrate knowledge of the impact of study design on validity or applicability to individual practice.
3. PGY-3 residents will additionally model independent learning and development.

f. Systems Based Practice.

1. PGY-1 residents will be sensitive to health care costs while striving to provide quality care. They will begin to effectively coordinate care with other health care professionals as required for patient needs.
2. PGY-2 residents, in addition to the above, will consistently understand and adopt available clinical practice guidelines and recognize the limitations of these guidelines. They will work with patient care managers, discharge coordinators and social workers to coordinate and improve patient care and outcomes.

3. PGY3 residents, in addition, will enlist social and other out-of-hospital resources to assist patients with therapeutic plans. PGY-3 residents are expected to model cost-effective therapy.

Note: This document is adapted from the Michigan State University General Medicine Curriculum

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