

CURRICULUM ON MEDICAL KNOWLEDGE

I. Educational Purpose and Goals

Physicians must demonstrate knowledge about both established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences. Physicians must also apply this knowledge to patient care. SVCH Internal Medicine residents must therefore develop breadth and depth of medical knowledge, and must develop analytic skills to continuously refine and apply their knowledge in clinical settings.

II. Principal Teaching Methods

a. Supervised Direct Patient Care:

- i. When providing care to patients under supervision of an attending physician, residents must incorporate bio-psychosocial knowledge. Management rounds, Teaching Attending rounds, and outpatient clinics all contribute to knowledge.
- ii. Required inpatient clinical experiences include General Internal Medicine, Medical ICU, Night Float, Emergency Medicine, Geriatrics, Pain and Palliative Medicine, Infectious Diseases and Pulmonary/Critical Care.
- iii. Required outpatient medicine learning experiences include weekly continuity clinic and ambulatory Medicine experiences.

b. Small Group Discussions

- i. Morning Report: All residents on inpatient medicine rotations attend daily Morning Report (MR), which includes learning exercises organized by the Chief Resident and facilitated by an Attending Physician.
- ii. Teaching Attending Rounds are held a minimum of three days per week, totaling 4.5 hours weekly. TA rounds are mandatory for all inpatient general medicine residents. Residents expand their knowledge through case-based discussions of basic science, etiology, pathogenesis, epidemiology, pathophysiology, clinical examination skills, data analysis, evidence-based principles, and formal differential diagnosis. Rounds include bedside teaching, to assess and improve socio-behavioral knowledge and knowledge of physical exam technique.
- iii. Evidence Based Clinical Practice: This mandatory weekly discussion conference teaches knowledge of epidemiology and research sciences. Articles contributing to recent advances in basic and clinical sciences and or relevant to residents' practice are stressed.
- iv. Board Review: Weekly session organized by a chief resident and facilitated by a Key Faculty review the weekly ACP questions and discuss a topic selected from the CMDT (Current Medical Diagnosis and Treatment) text book.

c. Didactic Sessions

- i. Core Curriculum Conference: This weekly lecture series covers fundamental bio-psychosocial knowledge and mandatory ACGME interdisciplinary topics. Topics are drawn largely from the major specialty disciplines and repeat in an 18-month cycle to ensure access for all residents.

- ii. Medical Emergencies / Nuts and Bolts Conference: These sessions repeat annually during the initial 8-10 weeks of the academic year, reviewing knowledge of common urgent medical symptoms.
 - iii. Case conferences: Primarily focused on practice based learning and improvement, it also addresses basic and clinical science knowledge.
 - iv. Grand Rounds: Traditional Grand Rounds are held weekly.
 - v. Patient Safety Conferences. Monthly conferences are held that address various patient safety principles and goals. Relevant journal articles are reviewed and a relevant resident managed case is discussed.
- d. Independent Study
- i. Personal and independent study habits are discussed and followed up in semi annual meetings with PD or APD.
 - ii. Residents have 24-hour access to written and electronic medical reference materials, including access to CWRU's extensive web based electronic library. Residents are expected to independently read primary literature.
 - iii. Residents may request up to 5 days/yr of leave to attend scientific meetings or other CME activities. In addition, residents receive a yearly stipend toward texts, journals, or attendance at approved scientific meetings.
 - iv. Residents may request up to two 4-week blocks of Clinical Investigation elective during their three years of training. During these blocks, residents work with a mentor to explore clinically relevant biomedical or cognate sciences in depth.

III. Educational Content

1. General Ambulatory Internal Medicine
2. Continuity Clinics
3. Geriatrics
4. General Inpatient Internal Medicine – Ward and Night Float.
5. Pain and Palliative Care
6. General internal medicine consultative service
7. Medical Subspecialties rotations in.
 - Cardiology
 - Critical Care and Pulmonology.
 - Endocrinology
 - Gastroenterology
 - Hematology / Oncology
 - Infectious Diseases
 - Nephrology
 - Rheumatology
 - Dermatology
 - Neurology

8. Other clinical knowledge essential to the practice of internal medicine, taught in clinical rotations

Psychiatry

Ophthalmology

ENT

Orthopedic

Gynecology

Rehabilitation medicine

Adolescent Medicine

Substance abuse disorders

9. Interdisciplinary knowledge: These topics are addressed at least once every 18 months in the mandatory didactics.

Adolescent medicine

Clinical ethics

Medical genetics and genomics

Quality assessment and quality improvement:

Risk management

Preventive medicine

Medical informatics and decision-making skills

Law and public policy

Domestic violence

Physician impairment

10. Knowledge central to the performance and interpretation of Procedures:

Technical knowledge for performance of procedures:

a. Instructed during orientation

i. Basic and advanced cardiac life support

ii. Endotracheal intubation – addressed in ACLS orientation classes, ICU, and elective anesthesiology

b. Instructed during conferences and or clinical rotations

i. Arterial puncture and arterial line

ii. Central venous line

iii. Lumbar puncture

iv. Phlebotomy

v. Peripheral intravenous line

vi. Pap smear

vii. Thoracentesis

vii Abdominal paracentesis

viii. Nasogastric intubation

Interpretation of laboratory and other technical data:

a. Instructed during conferences or clinical rotations.

i. Peripheral blood smear

ii. Sputum gram stain

iii. Microscopic urine

iv. KOH and wet prep of vaginal discharge

- v. Fecal occult blood
- vi Electrocardiogram
- vii. Skin biopsy
- viii. Chest roentgenogram
- ix. Spirometry

11. Additional elective rotations are available both in our hospital and in other hospitals in the City based on the resident career goals and the determined educational value. New resident-developed electives can be proposed.

12. Patient characteristics – Medical knowledge is acquired during supervised care of a diverse population of general medical patients, including patients with gynecologic presenting complaints. Internal medicine residents also see patients in consultation on surgical, or subspecialty services. The patient population has extensive socioeconomic diversity.

IV. Principal Ancillary Educational Materials

- a. CMDT and other Basic Internal medicine text are purchased for all Residents.
- b. Residents are encouraged to purchase the Medical Knowledge Self Assessment Program (MKSAP) produced by the American College of Physicians or other prep-for-boards materials and are provided funds to do so.
- c. Primary literature is assigned by attending physicians throughout their training.
- d. Full service 24-hour libraries with electronic and web-based databases are present in the hospital with onsite medical librarian. All residents have 24-hour access to the extensive online CWRU electronic library.
- f. Continuity clinics are stocked with resource texts and electronic access.

V. Methods of Evaluation

- a. Resident Performance
 - i. Faculty complete competency-based electronic resident evaluations for each rotation, assessing medical knowledge.
 - ii. Residents must pass ACLS content exams offered during Orientation
 - iii. Annually, residents must take the ACP In-Training Examination. Scores serve as formative feedback. Residents who perform below standards, as judged by the Program Director, may be required to remediate. Performance does not however affect promotion.
- b. Program and Faculty Performance
 - i. Residents complete service and faculty evaluations, assessing faculty teaching and modeling of medical knowledge. Faculty physicians receive anonymous copies of aggregate completed evaluations.
 - ii. Annual residents retreats are held for each respective PGY class to evaluate the program and identify areas for improvement.
 - iii. ABIM Board Certification pass rates are reviewed yearly.
 - iv. Residency performance feedback is sought annually during exit interviews of the graduating residents.
 - v. Program evaluations surveys are sent to all faculty bi annually.

VI. Medical Knowledge Specific Competency Objectives.

Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care. Residents are expected to:

Know and apply the basic and clinically supportive sciences which are appropriate to their discipline.

i. PGY1 residents will

- Demonstrate knowledge of biopsychosocial sciences.
- Demonstrate satisfactory knowledge of common medical conditions, sufficient to manage urgent complaints with supervision. Residents must exhibit sufficient knowledge of common conditions to provide care with minimal supervision by completion of PGY1.

ii. PGY2 residents will additionally

- Demonstrate progression in knowledge and analytical thinking in order to develop well-formulated differential diagnoses for multi-problem patients.
- Demonstrate understanding and responsiveness to sociobehavioral issues.
- Develop knowledge of statistical principles. Understand and appropriately use sensitivity, specificity, predictive values, likelihood ratio, number needed to treat, and odds ratios.

iii. PGY3 residents will additionally

- Demonstrate growing knowledge in the area of their chosen career path.
- Exhibit knowledge of effective teaching and evaluation methods,
- Demonstrate an investigatory and analytic approach to clinical situations

i. PGY1 residents will

- Exhibit use of hospital library resources.
- Exhibit self-motivation to learn.
- Demonstrate sufficient analytic skills necessary to develop appropriate assessments and plans for common medical diagnoses and complaints.

ii. PGY2 residents will additionally

- Independently present up-to-date scientific evidence to support hypotheses.
- Present and review an article in an Evidence Based Clinical Practice session
- Present and discuss cases in the Case and Subspecialty conferences.

i. PGY-3 residents will additionally

- Regularly display self-initiative to stay current with new medical knowledge.
- Regularly demonstrate knowledge of the impact of study design on validity or applicability to practice.
- Present and review an article in an Evidence Based Clinical Practice session
- Present and discuss cases in the Case and subspecialty conferences.