Clinical Clerkship Curriculum
General Surgery

AUC Clinical Curricula Guide to Duty Hours, Minimum Experience and Procedure Thresholds, Learner to Teacher Ratios, and Recognition

I. In all rotations, AUC expects that students will follow the most recent ACGME duty-hour requirements for PGY-1 level residents, as specified for each rotation area.

II. In all rotations, AUC expects that students who are required to be on call will be accommodated as required by the ACGME for residents on call.

III. Each core rotation will indicate a minimum threshold experience to help prepare the student gain competency.

Surgery – Perform an adequate physical exam; be able to appreciate the use of appropriate investigations in reaching a diagnosis and initiating management of the surgical patient; have an understanding of the pathophysiology of disease entities as indicated in the syllabus along with the initial surgical procedure required. See and perform procedural skills such as NG tube and Foley catheter insertion, dressing changes and removal of staples and stitches, removal of chest tubes central lines and drains, suturing of wounds, etc.

IV. Each student must have adequate direct exposure with an attending and/or resident physician during the majority of the rotation. There should be no more than two learners (student and any other learner on the service) per resident or three learners for an attending. Lectures, library, or video are considered direct exposure.

V. Each student must have recognition of the site where training is being performed. This includes direct knowledge of the student being trained at the site with written verification and appropriate badging of the student as a visiting student or other appropriate designation.

General Surgery
Student Core Clerkship Curriculum

General surgery is a core clerkship of 12 weeks duration, including an eight to ten week rotation in general surgery and a two to four week rotation in surgical specialties (if available). These specialties include plastic surgery, cardiothoracic surgery, colorectal surgery and vascular surgery. All general surgery core clerkships are conducted at teaching hospitals that have an ACGME-accredited residency in general surgery, or in the U.K. at a SIFT-approved hospital that has a surgery department with certified surgeon. An extensive curriculum has been developed and frequently revised.

Conferences will focus on preparing a medical history physical, differential diagnosis, surgical procedures, postoperative care, and informed consent. Medical students will attend the journal club of the department. At journal club, the basic sciences and clinical papers published in peer-reviewed journals are discussed by residents under the supervision of the attending physicians. Bi-weekly special lecture series on various topics of the surgical assessment of the patient and basic sciences should be conducted for the medical students. The residents or attending physicians in the department will conduct these lectures in one-hour segments.

Medical students will be directly involved under the supervision of the chief residents of a particular service. The attending surgeons will have a supervisory role. The chair of surgical services will be in charge of the program. The goal of the curriculum is to present material related to surgery that will be required for any physician regardless of the specialty s/he chooses to pursue. The surgical curriculum will contain bedside teaching, operating room experience, surgical clinic in private offices of practicing physicians, and didactic lectures. This curriculum is intended to serve as a basis for instruction to medical students during their core clerkship in general surgery. It is intended to provide a common level of knowledge, proficiency and procedural competency for any student at any training site. It incorporates key strategic goals:

1. Vertical integration of basic science and clinical curricula.
2. Competency-based learning and evaluation.
3. Bridging of typical resident curriculum guidelines including ACGME competencies.
4. Adherence to current standards in medical education and the practice of medicine.

The curriculum is not intended to list or describe every common entity seen in the practice of general surgery. It is, however, expected that the student will have exposure to a wide variety of medical problems encountered in the practice of surgery in both the hospital and ambulatory settings. It is also anticipated that students will learn through didactic lectures and independent reading the specific issues required to deal with the clinical problems presented.

COMPETENCIES

1) <u>PATIENT CARE</u>

Students must be able to provide patient care that is compassionate, appropriate, and

effective for the treatment of health problems and the promotion of health. Students should develop and demonstrate specific skills, including:

1. Communicate effectively with patients and families to gather accurate historic and physical information.
2. Work with other health care providers, including those from multidisciplinary teams.

Educational Experiences

a. Propose management plans to faculty and carry out those plans under faculty supervision.
b. Perform patient care with other health care providers.
c. Take actual histories and perform actual physical examinations under faculty supervision.

Potential Evaluation Methods

Case presentation, global rating and simulation lab. resident evaluations, 360° survey, written standardized evaluation and rotation-specific faculty grade forms.

2) MEDICAL KNOWLEDGE

Students must be able to understand established and evolving biomedical, clinical and cognate (e.g. epidemiological and social-behavioral) sciences, and the application of this knowledge to patient care. Students should develop and demonstrate specific skills, including:

1. Understand and apply basic and clinical medical science.
2. Demonstrate analytical thinking.
3. Understand the pathophysiology of diseases and their management through exposure to the basic sciences.

Educational Experiences

a. Self-study (books, tapes, videos)
b. Participation in prepared lectures and test series
c. Attendance in medical conferences
d. Participation in didactic lecture and test series
e. Proposal of management plans to faculty
f. Participation in case presentations
g. Participation in weekly reading programs and dissection sessions:
   i. Grand rounds, surgical conferences and presentations
   ii. Self-study

Potential Evaluation Methods

Rotation-specific faculty grade forms and written tests; M&M conference presentation minutes and OR competencies forms.

3) INTERPERSONAL AND COMMUNICATION SKILLS

Students must be able to demonstrate interpersonal and communication skills that result in effective information exchange with patients, patients' families, and professional associates. Students should develop and demonstrate specific skills, including:

1. Demonstrate effective patient/family interviewing skills.
2. Prepare and deliver effective medical presentations: case presentations and lectures.

3. Demonstrate effective communication skills with other health professionals.

Educational Experiences

a. Participation in formal lectures on communication skills.
b. Taking histories under faculty supervision.
c. Delivering case presentations and prepared lectures.

Potential Evaluation Methods

Communication skills module, rotation-specific faculty grade forms, and 360 evaluations.

4) <u>PROFESSIONALISM</u>

Students must demonstrate a commitment to carrying out the responsibilities as a student and future professional, adherence to ethical principles, and sensitivity to a diverse patient population. Students should develop and demonstrate specific skills, including:

1. Understand the value of respect and compassion.
2. Understand the value of integrity that supersedes self-interest.
3. Express a commitment to ethical principles.
4. Understand issues of culture, religion, race, age, gender, sexual orientation and disability in patients and other healthcare providers.

Educational Experiences

a. Engagement in professional interactions with multidisciplinary team members, including nursing associates, peers and diverse population.
b. Participation in lectures specific to issues of ethics, end of life, and professionalism – particularly as they apply to surgery.
c. Participation in GME lecture series, seminars, lectures and grand rounds.

Potential Evaluation Methods:

360° evaluation, rotation-specific grades, lecture exam and faculty grades.

5) <u>PRACTICE-BASED LEARNING AND IMPROVEMENT</u>

Involves the investigation and evaluation of patient care, appraisal and assimilation of scientific evidence, and improvements in patient care. Students should develop and demonstrate specific skills, including:

1. Analysis, location, evaluation and assimilation of evidence from scientific studies.
2. Demonstration of knowledge of scientific study design and statistical methods.
3. Use of information technology.

Educational Experiences

a. Participation in monthly journal club meetings
b. Participation in lectures offered on the specific topics of scientific study design and statistical methods
c. Participation in seminars on these specific topics during the annual basic science and research rotation
d. Delivery of actual prepared lectures, grand rounds and teaching rounds
e. M&M conference

Potential Evaluation Methods

Faculty and resident evaluations.

6) SYSTEMS-BASED PRACTICE

Students must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Students should develop and demonstrate specific skills, including:

1. Understanding the concept of systems-based practice and how other professionals, organizations, and society affect patient care.
2. Demonstrate a commitment to cost-effective health care and resource allocation that does not compromise the quality of care.

Educational Experiences

a. Participation in grand rounds and teaching conferences
b. Participation in committees in which issues of cost versus quality are discussed
c. Participation in treatment of actual patients in the clinics and offices in which issues of cost versus quality are discussed
d. Participation in case presentations in which issues of cost versus quality are discussed
e. Presentation of cases and weekly M&M conference

Potential Evaluation Methods

Grand rounds attendance, rotation-specific faculty grade forms and resident evaluations.

Procedural Skills

Students will be encouraged to attend the surgical skills laboratory and participate in all aspects of the offered skills. Those will include:

1. Suturing
2. Knot-tying
3. Maneuvers in involved in laparoscopic skills
4. NG tube and Foley catheter insertion
5. Dressing changes and removal of staples and stitches
6. Removal of central lines, chest tubes and drains
7. Suturing of wounds (in laboratory)
8. Starting IV line and drawing blood for ABG

In addition, students will be encouraged to observe the following procedures:

9. Closure of operative wounds
10. Minor surgical procedures and biopsies
11. Central line insertion
12. Thoracostomy tube
13. Peritonealcentesis

14. Thoracocentesis

Disease Entities

1. Pulmonary physiology, pneumothorax, hemothorax
2. Fluids and electrolytes TPN
3. Hernia
4. Gastrointestinal bleed
5. Shock, TCU care
6. Thyroid, parathyroid
7. Pre-operative and post-operative care
8. Trauma
9. DVT and PE
10. Stomach and small bowel obstruction
11. Wound Healing
12. Breast
13. Pancreas
14. Hepatobiliary (benign and malignant)
15. Burns
16. Spleen
17. Benign colorectal disorders
18. Vascular diseases (acute and chronic)
19. Skin lesions (benign and malignant)
20. Inflammatory bowel disease
21. Colorectal cancers
22. Peripheral vascular disease (acute and chronic)
23. Acute abdomen and large bowel obstruction
24. Complications in surgery

Work Hours

Students are encouraged to take night call with their team, but must never exceed ACGME duty hour standards for residents.

Resources

1. Simulation lab
2. Library
3. Internet access and medical data base availability
4. Recommended reading

   a) A condensation of medical student educational objectives can be found in the following student textbooks:

   Lawrence, Peter F. *Essentials of General Surgery*. Baltimore. Williams & Wilkins, 1992.

   Lawrence, Peter F. *Essentials of General Surgical Subspecialties*. Baltimore. Williams & Wilkins, 1992.

   Pre-operative and Post-operative Care, American College of Surgeons.

The following reference books are also advised:

Brunicardi, F. Charles., and Seymour I. Schwartz. *Schwartz's Principles of Surgery*. New York: McGraw-Hill, Health Pub. Division, 2005.

Sabiston, David C., and Courtney M. Townsend. *Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice.* Philadelphia: Saunders/Elsevier, 2008.

Final evaluation and outcome measure:

NBME subject exam and attending written evaluation and narrative report.

COMPETENCY	OBJECTIVE Specific	EDUCATIONAL EXPERIENCES KNOWLEDGE/SKILLS INTEGRATION/APPLICATION	ASSESSMENT TOOLS
Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.	1. Communicate effectively with patients and families to gather accurate historic and physical information. 2. Work with other health care providers including from other disciplines to provide health care.	1. Take actual histories and perform actual physical examinations (under faculty supervision) 2. Propose management plans to faculty. 3. Carry out management plans (under faculty supervision) 4. Perform patient care with other healthcare providers	1. Rotation-specific faculty grade forms 2. Resident evaluation 3. 360° survey
Medical 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.	1. Know and apply basic and clinical medical science 2. Demonstrate analytical thinking 3. Basic sciences exposure to obtain the pathophysiology of diseases and their management	1. Self-study (books, tapes, videos) 2. Participate in prepared lectures and test series 3. Attend medical conferences 4. Participate in didactic lecture and test series 5. Propose management plans to faculty. 6. Carry out management plans (under faculty supervision) 7. Participate in case presentations 8. Weekly reading programs/dissection sessions. a. Grand rounds/surgical conferences/ presentations b. Self-study	2. Rotation-specific faculty grade forms/ written tests 3. Rotation-specific faculty grade forms 4. Written tests 5. M&M Conference presentation minutes 4. OR competencies

Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.	1. Demonstrate effective patient/family interviewing skills 2. Prepare and deliver effective medical presentation 3. Case presentations Lectures 4. Demonstrate effective communication skills with other health professionals	1. Participate in formal lectures on communication skills 2. Take actual histories (under faculty supervision) 3. Deliver actual case presentations 4. Deliver actual prepared lectures	1. Communication skills module 2. Rotation-specific faculty grade forms 3. 360° evaluations
Professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.	1. Understand the value of respect and compassion 2. Understand the value of integrity that supersedes self-interest 3. Express a commitment to ethical principles 4. Understand issues of culture, religion, race, age, gender, sexual orientation and disability in patients and other healthcare providers	1. Professional interactions with multidisciplinary team members including nursing associates, peers, and a diverse patient population 2. Lectures , seminars and grand rounds 3. Participate in lectures specific to issues of ethics, end of life, and professionalism particularly as they apply to surgery 4. GME lecture series	1. Rotation specific grades 2. Lecture exam 3. Faculty grades 4. 360° evaluation
Practice-Based Learning and Improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in-patient care.	1. Locate, analyze, evaluate, and assimilate evidence from scientific studies 2. Demonstrate knowledge of scientific study design and statistical methods 3. Use information technology	1. Participate in monthly journal club meetings a. Participate in lectures offered on the specific topics of scientific study design and statistical methods. b. Participate in seminars on these specific topics during the annual basic science and research rotation. c. Deliver actual	1. Faculty evaluations 2. Resident evaluations

		prepared lectures, grand rounds and teaching rounds d. M&M Conference	
Systems-Based Practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system for healthcare and the ability to effectively call on system resources to provide care that is of optimal value.	1. Understand various types of medical practice, especially with respect to how each controls costs and allocates resources 2. Practice cost-effective care 3. Advocate for quality patient care	1. Grand Rounds topic, which address these topics 2. Participate in committees in which issues of cost versus quality are discussed 3. Participate in treatment of actual patients in the clinics and offices in which issues of cost versus quality are discussed 4. Participate in case presentations in which issues of cost versus quality are discussed 5. Participate in treatment of actual patients in the clinics and offices in which issues of cost versus quality are discussed 6. Present cases and participate in weekly M&M conference	1. Grand rounds attendance 2. Rotation-specific faculty grade forms