



AMERICAN OSTEOPATHIC ASSOCIATION

**BASIC STANDARDS
FOR
RESIDENCY TRAINING
IN
EMERGENCY MEDICINE**

American Osteopathic Association
And the
American College of Osteopathic Emergency Physicians

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STANDARDS TO APPROVE RESIDENCY TRAINING PROGRAMS IN EMERGENCY MEDICINE

AUTHORITY AND PURPOSE

The Bureau of Osteopathic Education of the American Osteopathic Association (AOA) is the only accrediting agency recognized by Federal and State authorities in the United States for Osteopathic Medical Education. Postdoctoral training is approved by the American Osteopathic Association through its Council on Postdoctoral Training (COPT), a component of the Bureau of Osteopathic Education.

Residency program approval implies that a program: has appropriately identified its mission, has secured the resources necessary to accomplish that mission, shown evidence of accomplishing its mission, and demonstrated its ability to carry its mission into the future.

Approval signifies that a residency program has met or exceeded the AOA standards for educational quality with respect to organization and administration: faculty, curriculum, instruction and evaluation; as well as resident relations, and facilities.

The process of emergency medicine residency program approval is a cooperative activity calling for continuing self-assessment on the part of each residency program, periodic peer evaluation through site visits, and review by the Graduate Medical Education Committee of the American College of Osteopathic Emergency Physicians (ACOEP), the Council on Postdoctoral Training, and the AOA Board of Trustees. Emergency medicine standards are contained in chapter one of the document. The context and process used by the Board and Council in approving programs is found in Chapter Two, Approval Procedures. Supplementary statements may be found in the document, Administrative Handbook of the Council on Postdoctoral Training.

PREFACE

A BRIEF HISTORY OF RESIDENCY PROGRAM APPROVAL

Early in the 20th Century, the AOA initiated approval of osteopathic postdoctoral training programs, with review through the Committee on Hospitals and approval by the AOA Board of Trustees. In 1968, the Committee on Postdoctoral Training was established as a representative body composed of members from AOA affiliate organizations created to assure the Bureau of Osteopathic Education, AOA Board of Trustees, the osteopathic profession and general public that postdoctoral training programs are operating within approved standards, rules and regulations, and are providing educational training resulting in high quality patient care. The COPT also has the obligation to deliberate and recommend policy revisions to the Bureau of Osteopathic Education and the AOA Board of Trustees for improvements in postdoctoral training.

In 1979, the AOA Board of Trustees first authorized the establishment of osteopathic emergency medicine residency programs. Following recognition by the American Osteopathic Association, the ACOEP formed its Evaluating Committee. This Committee was formed of physicians both active in the field of emergency medicine, and the training of osteopathic interns. This Committee was empowered by the Board of Directors of the ACOEP to formulate minimum standards for postdoctoral emergency medicine training. These standards were completed and approved by the AOA in 1980. At that same time, the first osteopathic residency program in emergency medicine was approved by the Board of Trustees of the AOA. The first training programs were two years in length following the successful completion of an internship. In 1989, the residency programs were lengthened to three years after internship to allow for the more specialized training needed by the emergency physician.

Presently, the Committee on Graduate Medical Education is composed of six members appointed by the Board of Directors of the ACOEP to serve staggered three-year terms. The ACOEP Committee on Graduate Medical

Education serves as an advisory body to the AOA Council on Postdoctoral Training for emergency medicine. The Committee has two functions: to develop standards which emergency medicine training programs and residents must meet to be approved, and to review and make recommendations to the AOA to assure that residency programs and individual physicians seeking AOA approval have met the training standards. By maintaining these required standards, the AOA and the ACOEP assure that graduates of emergency medicine residency programs achieve expertise in their specialty.

The approval process for postdoctoral emergency medicine training is a public trust. Its purposes are many and include assuring that:

- (1) Osteopathic training programs meet AOA and ACOEP standards.
- (2) Residents in training programs receive education and training consistent with AOA and ACOEP standards.
- (3) Those responsible for resident education are competent.
- (4) Sponsored programs meet acceptable national standards.
- (5) Educational programs merit support from funding agencies.
- (6) Graduates of the Residency Programs are competent emergency physicians.

SECTION ONE INTRODUCTION

The American Osteopathic Association (AOA), Bureau of Osteopathic Education (BOE), Council on Postdoctoral Training (COPT), and the American College of Osteopathic Emergency Physicians (ACOEP), require that each AOA-approved emergency medicine residency program are required adhere to the policies, procedures, and standards contained in these documents. Exceptions must be clearly identified and have explicit approval as determined by the AOA Board of Trustees.

Osteopathic residency training in emergency medicine is defined as a formal training period of **four** years in an approved program to qualify for certification. This program shall be planned and conducted for the purpose of providing advanced and concentrated training in emergency medicine. Residency training in emergency medicine is full-time. Providing education of the highest quality must be the major mission of the program. Education, not service, is the primary purpose of a residency program. These Standards are identified as Basic Standards each program is therefore required to meet all the standards and encouraged to exceed them.

The purpose of osteopathic emergency medicine residency training is to provide progressive learning experiences that develop the attitudes, skills, and knowledge of an osteopathic physician to efficiently provide quality emergency care. Specific program objectives are stated in the curriculum referred to in Section IV.

STANDARDS FOR PROGRAM APPROVAL

Standards I through VIII of this document contain standards for residency training in emergency medicine. The standards and prerequisites are used by the AOA and the ACOEP to evaluate the residency program on a continuing basis.

STANDARD I MISSION

The mission of residency training in emergency medicine must be to provide an organized educational experience leading to the competent practice of emergency medicine. This training shall be based on educational goals and objectives that meet or exceed those outlined in this document. Training must cover all topics presented in the Core Curriculum.

Residency programs must provide a mission statement for the program and evidence that this statement is periodically reviewed and updated by the institution.

STANDARD II EDUCATIONAL PROGRAM GOALS AND OBJECTIVES

A. EDUCATIONAL GOALS

The goals of an emergency medicine residency program are to:

1. Provide learning experiences that promote a broad understanding of the role of emergency medicine as it relates to other medical disciplines.
2. Develop measurable objectives to assess the progression of the resident in the three-year training program.
3. Integrate the sciences applicable to emergency medicine with clinical experiences in a progressive manner.

4. Provide the emergency medicine resident with progressive patient care responsibilities, commencing with general medical skills and progressing to complete care of patients in need of emergency care.
5. Provide training that will enable the emergency medicine resident to rapidly evaluate, initiate treatment, and provide appropriate therapy, and disposition of the emergency patient.
6. Provide the opportunity to develop the teaching skills of residents in emergency medicine.
7. Provide the opportunity to develop the skills necessary for problem solving in the emergency medicine environment.
8. Provide the opportunity to develop professional leadership and management skills.
9. Provide the opportunity to promote lifelong learning in medical education.
10. Provide the opportunity to develop interest in and understanding of research in emergency medicine.
11. Prepare the resident to meet board eligibility requirements of the AOA through the American Osteopathic Board of Emergency Medicine.
12. Prepare and distribute a written description of the process and criteria for the selection of residents. This statement shall be included in the institution's policies regarding contract renewal for residents who demonstrate competence.
13. Admission to a residency program shall not be influenced by race, sex, religion, creed, national origin, age sexual orientation, marital status, national origin, veteran status, disability, or other legally protected status.
14. Provide the opportunity to learn to practice medicine in an ethical fashion.
15. Provide the opportunity to develop Osteopathic Manipulative Medicine (OMM) skills and its application to emergency medicine.
16. Provide a learning environment that encourages cultural sensitivity and patient safety.
17. Provide training and evaluation of residents relative to the seven core competencies defined by the AOA.

B. PROGRAM OBJECTIVES

An emergency medicine residency program, approved by the AOA through the ACOEP, shall provide meaningful objectives that prepare the resident to:

1. Manage clinical problems in an emergency department setting, employing basic scientific principles and evidenced-based medicine.
2. Use critical thinking in making effective decisions for patient management.
3. Rapidly and accurately evaluate, organize, and initiate treatment of the emergency patient.
4. Make sound judgments as to the expected risks arising from therapy as well as the condition being treated with an understanding of associated ethical and legal principles.
5. Demonstrate proficiency in the psychomotor skills required of a competent emergency physician.
6. Provide cost-effective care to emergency medicine patients.
7. Collaborate effectively, and share knowledge with colleagues and allied health professionals.
8. Teach basic skills needed for mass casualty management and coordination for the hospital and community
9. Educate patients and their families concerning health care needs.
10. Participate in community and professional organizations.
11. Read, interpret, and participate in clinical research.
12. Participate in opportunities for continuing education to promote personal and professional growth.
13. Teach basic skills and clinical practices needed in the emergency department to medical students, interns, and other residents within the context of the residency program.
14. Appropriately integrate OMM and its applications in the practice of emergency medicine.
15. Be sensitive to the patient populations served and its implications to providing healthcare to them.
16. Train residents in such a manner as to prove competent in the seven core competencies so defined by the AOA.

STANDARD III INSTITUTIONAL REQUIREMENTS FOR PROGRAM APPROVAL

- A. An institution must meet the following requirements to be considered for approval to sponsor an emergency medicine residency program:
1. Be accredited by the American Osteopathic Association/Healthcare facilities Accreditation Program (HFAP) or JCAHO and affiliated with an OPTI accredited by the AOA.
 2. Document that the program meets the policies and procedures of the OPTI with which it is affiliated.
 3. Be in operation at least twelve (12) months immediately preceding the date of application for residency training.

B. Organizational Structure

Have an appropriate administrative structure, including a postdoctoral education committee with membership of a director of medical education (DME) who is an osteopathic physician with AOA-approved training, program directors of all specialty training programs at the institution, and representatives of supporting specialty services.

C. Program Director

The sponsoring institution shall designate an osteopathic emergency medicine physician as program director who has sufficient clinical time for program administration and clinical instruction. Appointments are subject to the approval of the ACOEP Committee on Graduate Medical Education and subsequent registry by the AOA.

The program director may not serve as or act in the capacity of the Chair of the Department of Emergency Medicine, or as program director of more than one residency program. He or she may be the Director of Medical Education if the institution has three or fewer osteopathic residency programs.

1. The program director of the emergency medicine residency program must possess the following qualifications:
 - a. Active, full-time staff membership within the department or section of emergency medicine
 - b. Certification by the AOA through the American Osteopathic Board of Emergency Medicine and recertified within the prescribed time frame of the AOBEM.
 - c. Membership in the American Osteopathic Association.
 - d. Membership in the American College of Osteopathic Emergency Physicians (ACOEP).
 - e. Active clinical practice of emergency medicine at the base institution
 - f. Practice of emergency medicine for a minimum of five (5) years or three (3) years full-time with an emergency medicine residency program.
 - g. Fulfill the qualifications as a core faculty member of an emergency medicine residency program, including administrative and demonstrated leadership skills, and completion of the AOA's continuing medical education requirements and emergency medicine training skills and faculty development.
 - h. Active participation in community and professional organizations appropriate to emergency medicine.
 - i. Involvement in research and academic pursuits such as publication in peer review journals, textbooks, local or specialty publications, formal lectures, and visiting professorships, within the past five (5) years.

2. The program director shall have the following responsibilities:
 - a. Direction of the emergency medicine residency program to ensure that the resident has the opportunity to receive training outlined in the written program description.
 - b. Ensure the arrangements of outside rotations with formal affiliation agreements that meet the program's educational objectives.
 - c. Evaluation of residents, faculty, and the emergency medicine residency program and submission of required reports as outlined in the Approval Procedures section of this document.
 - d. In coordination with the DME, have responsibility for all schedules, and appropriate time for residency training, including lectures, educational sessions, and study time.
 - e. Working with the DME to support the predoctoral and postdoctoral education and training at the institution.
 - f. Notify the ACOEP of all residents in training on an annual basis.
 - g. Participation in the annual ACOEP Program Directors' Workshop. Attendance at this annual conference is mandatory for the program director or his/her designee. The program director must attend a minimum of once every two years.
 - h. Ensuring that the program complies with the standards, policies, and procedures of the AOA.
 - i. Preparation for and participation in the AOA inspection of the program in cooperation with the Division of Postdoctoral Education and the designated evaluator.
 - j. Inform the AOA, OPTI, and ACOEP's Committee on Graduate Medical Education of major changes in the program, including but not limited to, changes in program director, core faculty institutional ownership, and affiliation, or other major administrative changes within thirty (30) days of their occurrence.
 - k. Develop written goals and objectives for each rotation featured in the program and maintain these through periodic updating.
 - l. To fulfill all the above requirements and the requirements under the core faculty section, a program director needs to have available non-clinical time. The program director should have at least 12 hours of compensated non-clinical time per week; however, this should be adjusted to compensate for larger clinical or more complex programs.

D. Department of Emergency Medicine

To be considered for approval of a residency program in emergency medicine, the department of emergency medicine at the base institution must:

1. Have a chairperson who is currently certified in emergency medicine by the AOA through the American Osteopathic Board of Emergency Medicine (AOBEM) or the American Board of Emergency Medicine (ABEM). The Chairperson of the Department may not be the program director and must achieve re-certification within prescribed time frame by the certifying body.
2. Have faculty as well as core faculty to teach and supervise residents. All physicians supervising emergency medicine residents must meet the faculty requirements. In addition, a group of core faculty must be appointed who meet more stringent core faculty requirements. The role and duties of the core faculty must be clearly defined.
3. Have all physicians who are clinically supervising emergency medicine residents certified in emergency medicine by the AOA/AOBEM or ABEM or in the process of being certified. Direct resident supervision by faculty members must be provided 24 hours a day.
4. Have significant clinical exposure to osteopathic emergency physicians.
5. Have a minimum of one (1) core faculty member for every three (3) resident positions. However, there must be a minimum of four (4) core faculty members regardless of program size. For combined programs in Emergency Medicine/Internal Medicine or Emergency Medicine/Family Practice, there must be one (1) core faculty member for every 6 (combined) residents. These core faculty members are in addition to the core faculty members in the basic Emergency Medicine program.

6. Have the scope, volume, and variety to support a residency program with at least four (4) approved residency positions per year. This is generally a minimum volume of 25,000 Emergency Department visits annually at the base institution. Larger programs may require higher volumes. Other emergency medicine sites that are affiliated with this base institution must each have a minimum volume of 15,000 Emergency Department visits annually.
7. Provide experience and training in the management of emergency department patients. This training should take place at the base hospital and its affiliated sites; however, at least 50% of the training must take place at the base institution.
8. Ensure that osteopathic principles and practice and their application to emergency medicine are emphasized and employed.
9. Have an AOA-approved internship program and fulfill the requirements as stated in the guidelines for establishing an Osteopathic Postdoctoral Training Institution (OPTI).

STANDARD IV FACULTY

The sponsoring institution, in conjunction with the program director shall designate a minimum of four (4) core faculty who shall participate in the emergency medicine residency program. Core faculty is specifically designated, full-time members of the department of emergency medicine at the base institution.

- A. Core faculty members must be certified or an active candidate in the process of certification by the AOA/AOBEM or ABEM.
- B. Core faculty members must be qualified by training and experience to perform their teaching role, including recertification within the prescribed time frame of the certifying body
- C. **A minimum of Fifty percent (50%)** of the core faculty must be osteopathic emergency physicians who participate in the training of residents.
- D. Core faculty must demonstrate sufficient scholarly activity, such as lecturing on a national basis, participation in textbook chapters, research or active involvement in national emergency medicine organizations. This activity must be within the last five (5) years. Faculty credentials must be on file and available at the time of inspection.
- E. Core faculty must be provided sufficient non-clinical time to provide instruction, leadership and participation in scholarly activities. Furthermore, Core faculty must participate in the academic educational program, such as formal lectures, case conferences and journal clubs and other requirements of the core curriculum (see Appendix 2). This will require at least four (4) hours of compensated, non-clinical time per week.
- F. The program director may be counted as a member of the core faculty.
- G. The program director may appoint a member of the core faculty who shall have the title of assistant or associate program director. This physician may fulfill the role of the program director in his or her absence.
- H. The institution shall have administrative and other non-physician staff committed to the program to support teaching and administrative in the emergency medicine residency program.
- I. The emergency medicine residency program must adopt formal policies and the residents must be advised of these policies. There must be a resident manual that will include, but not be limited to:
 1. The institution's emergency medicine residency curriculum.
 2. The rules and regulations stating the resident's duties and responsibilities.
 3. Leave policies.
 4. Financial arrangements, including housing, meals, and other benefits, as may be determined by the institution and described in the resident contract.

5. Institutional policies and procedures for the supervision and evaluation of residents, due process, (e.g., grievances, disciplinary action, academic deficiencies or failure) and appeal processes.
 6. Policies governing outside activities of a professional nature.
 7. Institutional policies regarding contract renewal, contract interruption or cancellation, and the number of emergency medicine positions offered each year of training.
 8. AOA work hours policy (Appendix 3).
- J. To fulfill requirements of the basic standards or enhance training, the program director may arrange for required rotations with affiliated training sites.
1. A program seeking to fulfill its requirements through affiliations with other AOA or ACGME institutions shall sign formal affiliation agreements with these training sites. Affiliation agreements shall be signed by representatives of both the base institution and the affiliate training sites, and shall be maintained on file with the DME at the base institution. Affiliations shall be consistent with the guidelines of the AOA.
 2. Residents on rotation to affiliated training sites shall remain under contract to the base institution. Resident training logs shall reflect training and service to the affiliated training site and shall be included in the resident records at the base institution. Written evaluation of the resident's performance at the affiliated training site must be submitted by the on-site faculty to the program director at the base institution.
- K. There must be an annual evaluation of the emergency medicine residency program.

STANDARD V RESIDENTS

- A. An applicant for emergency medicine residency training must:
1. Be a graduate of an AOA-accredited college of osteopathic medicine and have successfully completed an AOA-approved internship.
 2. Be a member of the AOA and maintain membership in the AOA throughout their term of training.
 3. Arrange for the provision of official transcripts by the College of Osteopathic Medicine and hospital administration of internship and/or previous residency training.
 4. Sign an annual residency contract with the institution.
- B. The resident is legally, morally, and ethically responsible to pursue exclusively the agreed upon program of training. The resident shall not engage in any outside activities of a professional nature during residency training except those approved by the program director and designated institutional authorities. Such activities must not interfere with the resident's participation in the training program.
- C. The resident shall progressively assume responsibility for patient care during the residency program, so that by the senior year, the resident must be able to assume complete management of all assigned cases.
- D. Increased competency in emergency medicine is based on experience and number and variety of cases managed in the emergency department. Such experience is gained through participation in highly specialized rotations as deemed necessary by the program director.

It is required that by the completion of the four-year emergency medicine residency program, each resident will have participated in a minimum of eighteen (18) months in the department of emergency medicine and organized, **four week or one (1) month** rotations in the following areas:

- Critical Care
- Surgical subspecialty, e.g., Ophthalmology, ENT, Hand or Plastic Surgery
- Orthopedics
- Pediatrics

- Trauma
 - Emergency Medical Services
 - Research/Administration
- E. Each resident shall adhere to established policies and procedures for residency training, as outlined in this document, and in the resident manual.
- F. The resident shall maintain formal records of all activities related to the educational program. These records shall be submitted monthly to the program director and DME for review and verification. Copies of these records shall be kept on permanent file by the administration at the base institution and shall be available at the time of the inspection. These records should document the fulfillment of the requirements of the program, describing the volume, variety, and scope, and progressive responsibility on the part of the resident for emergency cases and procedures performed under supervision.
- G. The resident shall complete a research project during the course of the Emergency Medicine training program. The resident must submit an outline for the project in the first training year, implementation and data collection methods with a second year interim report, and a final product suitable for publication in the third year of residency. The completed research project must be submitted to the ACOEP with the annual report. A permanent copy must be retained in the resident's file. All research projects must be approved by the program director.
- H. The resident shall be required to participate in professional staff activities.
- I. The resident must annually participate in the ACOEP Resident Examination. The program director must advise the ACOEP's Committee on Graduate Medical Education, in writing, of the Resident's inability to participate in the examination within ten (10) days of the examination and outline how this regulation will be met for this individual.
- J. The resident must be certified as a provider in advanced cardiac life support (ACLS), advanced trauma life support (ATLS), or its equivalent, and advanced pediatric life support (APLS) or its equivalent.
- K. Work hours in the program must be educationally oriented and established AOA work hour regulations need to be followed (Appendix 3).

STANDARD VI CURRICULUM AND INSTRUCTION

- A. The emergency medicine program shall adhere to a four-year curriculum (OGME-1 to OGME-4) that meets or exceeds the requirements listed within this document. The program shall create and implement a core curriculum for emergency medicine residency training that prepares the resident for specialty certification in emergency medicine. A program may accept a resident into its program as an OGME-2 resident if he or she has completed a traditional or rotating internship matching the curriculum outlined in Appendix One of this document.
1. The four year curriculum in emergency medicine must include the following core curriculum components:
 - a. Use of osteopathic principles and practice relating to emergency medicine.
 - b. Development of a growing competence on the part of the resident in the clinical practice of emergency medicine.
 - c. Development of a philosophy of emergency medicine directed toward delivery of the best possible patient care.
 - d. Advanced training in the basic sciences, which shall include structured learning and clinical experience in the basic sciences and clinical skills in emergency medicine.

- e. Participation in required OPTI educational programs.
 - f. Training in the following advanced procedural skills
 - Bedside ultrasonography
 - Rapid sequence intubation (RSI)
 - Procedural sedation
2. The program must provide a minimum of four (4) hours of planned emergency medicine educational activity per week (not including sign-out rounds):
 - a. Residents must be excused from clinical duties to attend planned educational experiences.
 - b. No more than fifty percent of the conference may be planned and presented by residents.
 - c. Residents must be exposed to the core curriculum during their training.
 - d. Residents are required to attend the academic portions of the program, unless excused by the program director.
 - e. Core faculty must be involved in the planning and administration of the planned educational activities.
 3. Progression through the residency program must be based on documentable, educational goals and objectives.
 4. The program must provide an environment that is conducive to resident education. This environment must include exposure to both the clinical applications of emergency medicine as well as the skills necessary to develop the proper attitudes towards patients, professional staff, and administration of the institution.
 5. The program must ensure that the resident demonstrates increasing competence in emergency medicine skills and techniques in the use of its diagnostic and therapeutic modalities. This shall be done through:
 - a. Documentable educational outcomes through multiple measures. Faculty input is required.
 - b. Observation, assistance, and supervised participation leading toward greater responsibility for diagnosis, care, and treatment of patients.
 - c. Opportunities to attend or participate in teaching and training inside and outside of the parent institution.
 - d. Participation in available seminars, divisional society meetings, workshops in other institutions, programs provided by universities, and clinical activities in affiliated outpatient clinics or specialty institutions.
 6. Residents in the program will learn teaching skills by actively participating in the process of instructing interns, medical students, and other residents.
 7. The curriculum shall include instruction in medical ethics and interpersonal skills.
 8. The curriculum shall be based on written objectives for each rotation.
 9. The curriculum will provide for annual evaluation by faculty and residents as a method for revision and updating of the document.

STANDARD VII FACILITIES AND OTHER RESOURCES

- A. Institutional facilities and resources must be adequate to provide educational opportunities to the resident. The institution is responsible for assuming the financial, technical, and educational support for the program. The institution must provide the necessary space, facilities and learning environment for the establishment and maintenance of an AOA-approved program.
 1. The institution shall have the following:
 - a. Sufficient administrative personnel to support the residency program.
 - b. A medical library that is properly staffed and maintained by a qualified librarian. This library shall include access to standard medical reference texts and current medical journals, and computer-assisted literature search capabilities, e.g., Medline, and on-line access to medical databases.
 - c. Conference room(s) that are available for formal instruction.

- d. Sleeping and lounge facilities and food facilities.
 - e. Faculty and administrative office space separate and distinct from resident office space.
 - f. Office space for residents.
2. Emergency medicine facilities
- a. While emergency medicine residency training may take place in many places, the program must provide training in at least two distinct Emergency Medicine sites.
 - b. The institution must provide emergency facilities that provide sufficient space and ancillary medical assistance to provide expedient and excellent patient care.
 - c. The emergency medicine department at the base institution must have a minimum of 25,000 Emergency Department visits annually. Other training sites must have a minimum of 15,000 Emergency Department visits annually. Each institution must have the appropriate scope and volume of patient visits to support a residency training program.
 - d. The emergency medicine department must have an attending emergency physician on duty at all times who fulfills the faculty requirements.

STANDARD VIII EVALUATION

The program must implement and document an evaluation of at least the following aspects and other related aspects as necessary. The following must be maintained by the institution and available to evaluators or the ACOEP on request. The core competencies need to be followed in these evaluations (Appendix 4)

- A. The curriculum will be evaluated annually by faculty and residents as a method for revision and updating of the documents.
- B. The program director, with faculty input, will complete written semi-annual evaluations of resident performance. This should include evaluations from all affiliated training sites and supplemented rotation sites.
- C. Evaluations should be learner-centered, developmental, foster continuous improvement, and based upon educational objectives for each assignment and program activity.
- D. Completed evaluations must be shared with the resident in consultation for improvement. They must be signed by the program director and resident to document that evaluation and counseling have occurred quarterly as required. Copies of evaluations should be made available to the resident.
- E. The program director must document that residents needing remediation or counseling as a result of evaluation are given it in a timely manner. There must be documentation of follow up evaluations of these residents.
- F. The faculty must be evaluated annually by the residents and an opportunity provided to conduct this evaluation anonymously.

Appendix One

Emergency Medicine First Training Year Model Curriculum

The schedule listed below is the curriculum for the first training year (OGME-1) year in Emergency Medicine. Physicians completing an “osteopathic rotating” or “ACGME transitional year” and applying for an OGME-2 residency program.

Under this rotation schedule, each OGME-1 must complete the following educational rotations and activities. These may be scheduled as 12 one-month rotations or 13 four-week rotations or any combination thereof.

1. Four (4) weeks or one (1) month of general internal medicine.
2. Eight (8) weeks or two (2) months of additional medicine that may include training in general internal medicine, medical subspecialties, or hospital family practice in any combination.
3. Four (4) weeks or one (1) month of hospital-based general surgery.
4. Eight (8) weeks or two (2) months of additional surgical training in either ambulatory or hospital settings. These eight (8) weeks may consist of:
 - a. General surgery.
 - b. Any surgical subspecialty.
 - c. Free-standing ambulatory surgery
 - d. Gynecological surgery.
 - e. Emergency medicine.
5. Four (4) weeks or one (1) month of training in female reproductive medicine with a minimum of 50% of this time spent in obstetrics
6. Four (4) weeks or one (1) month of pediatrics with a minimum of 50% of ambulatory training which will be defined by the training institution. Strong consideration should be given to a pediatric emergency medicine rotation.
7. Twenty (20) weeks or four (4) months of emergency medicine training that will be conducted under the supervision of a board certified/board eligible emergency medicine physician in an institution approved for residency training in emergency medicine. Vacation time may be taken out of this rotational time.

Appendix Two

CORE CURRICULUM AREAS FOR EMERGENCY MEDICINE

1.0 ABDOMINAL AND GASTROINTESTINAL DISORDERS

1.1 Esophagus

- 1.1.1 Motor abnormalities
 - 1.1.1.1 Esophageal spasm
 - 1.1.1.2 Achalasia (SEE 13.1.4.3)
- 1.1.2 Structural disorders
 - 1.1.2.1 Varices
 - 1.1.2.2 Rupture (Boerhaave's syndrome)
 - 1.1.2.3 Perforation
 - 1.1.2.4 Tears (Mallory-Weiss syndrome)
 - 1.1.2.5 Hematoma
 - 1.1.2.6 Foreign body (SEE 13.1.5)
 - 1.1.2.7 Diaphragmatic hernia
 - 1.1.2.8 Diverticula
 - 1.1.2.9 Hiatal hernia
 - 1.1.2.10 Webs, strictures, stenosis, fistulas
- 1.1.3 Inflammatory disorders
 - 1.1.3.1 Reflux esophagitis
 - 1.1.3.2 Caustic injury
- 1.1.4 Infectious disorders
 - 1.1.4.1 Herpetic esophagitis
 - 1.1.4.2 Monilial esophagitis
- 1.1.5 Tumors

1.2 Liver

- 1.2.1 Hepatitis
 - 1.2.1.1 Viral
 - 1.2.1.2 Bacterial
 - 1.2.1.3 Parasitic
 - 1.2.1.4 Drug and toxin
 - 1.2.1.5 Alcoholic
 - 1.2.1.6 Prophylaxis
- 1.2.2 Cirrhosis
 - 1.2.2.1 Alcoholic
 - 1.2.2.2 Viral
 - 1.2.2.3 Biliary obstructive
 - 1.2.2.4 Drug-induced
 - 1.2.2.5 Toxin-induced
- 1.2.3 Hepatic/Hepato-renal failure
- 1.2.4 Tumors of the liver
- 1.2.5 Abscess
 - 1.2.5.1 Primary abscess
 - 1.2.5.2 Metastatic abscess

1.3 Gall Bladder and Biliary Tract

- 1.3.1 Cholecystitis

- 1.3.2 Cholangitis
- 1.3.3 Cholelithiasis and choledocholithiasis
- 1.3.4 Gallstone ileus
- 1.3.5 Tumors

1.4 Pancreas

- 1.4.1 Inflammatory
 - 1.4.1.1 Acute pancreatitis
 - 1.4.1.2 Chronic pancreatitis
 - 1.4.1.3 Pseudocyst/abscess
 - 1.4.1.4 Pancreatic insufficiency
- 1.4.2 Tumors
 - 1.4.2.1 Islet cell tumors
 - 1.4.2.2 Carcinoma

1.5 Stomach

- 1.5.1 Structural lesions
 - 1.5.1.1 Volvulus
 - 1.5.1.2 Foreign bodies
 - 1.5.1.3 Rupture
 - 1.5.1.4 Gastric outlet obstruction
- 1.5.2 Inflammatory disorders
 - 1.5.2.1 Acute gastritis
 - 1.5.2.1.1 Stress-related gastritis
 - 1.5.2.1.2 Corrosive gastritis
 - 1.5.2.1.3 Drug-induced gastritis
- 1.5.3 Peptic ulcer disease
 - 1.5.3.1 Duodenal ulcer
 - 1.5.3.2 Gastric ulcer
 - 1.5.3.3 Acute gastrointestinal hemorrhage (SEE 13.1.8)
- 1.5.4 Tumors

1.6 Small Bowel

- 1.6.1 Motor abnormalities
 - 1.6.1.1 Obstruction
 - 1.6.1.1.1 Mechanical
 - 1.6.1.1.2 Adynamic
 - 1.6.1.2 Pseudo obstruction
- 1.6.2 Structural disorders
 - 1.6.2.1 Aortoenteric fistula
 - 1.6.2.2 Malabsorption
 - 1.6.2.3 Meckel's diverticulum (SEE 13.1.4.6)
- 1.6.3 Inflammatory disorders
 - 1.6.3.1 Acute appendicitis
 - 1.6.3.2 Regional enteritis/Crohn's disease

- 1.6.4 Infectious disorders
 - 1.6.4.1 Viral
 - 1.6.4.2 Bacterial
 - 1.6.4.3 Parasitic
- 1.6.5 Tumors
- 1.6.6 Vascular disorders
 - 1.6.6.1 Mesenteric ischemia
 - 1.6.6.2 Ischemic colitis
- 1.7 Large Bowel
 - 1.7.1 Motor abnormalities
 - 1.7.1.1 Irritable bowel
 - 1.7.1.2 Constipation
 - 1.7.1.3 Aganglionic mega-colon / Hirschsprung's (SEE 13.1.4.7)
 - 1.7.1.4 Obstruction/pseudo obstruction
 - 1.7.2 Structural disorders
 - 1.7.2.1 Diverticular disease
 - 1.7.2.2 Volvulus
 - 1.7.2.3 Vascular dysplasia (angiodyplasia)
 - 1.7.3 Inflammatory disorders
 - 1.7.3.1 Ulcerative colitis
 - 1.7.3.2 Radiation colitis
 - 1.7.4 Infectious disorders
 - 1.7.4.1 Bacterial
 - 1.7.4.2 Viral
 - 1.7.4.3 Parasitic
 - 1.7.4.4 Antibiotic associated
 - 1.7.5 Tumors
- 1.8 Rectum and Anus
 - 1.8.1 Structural disorders
 - 1.8.1.1 Anal fissure
 - 1.8.1.2 Anorectal fistula (SEE 13.1.1)
 - 1.8.1.3 Hemorrhoids
 - 1.8.1.3.1 Internal
 - 1.8.1.3.2 Externa
 - 1.8.1.4 Rectal prolapse
 - 1.8.1.5 Foreign body
 - 1.8.1.6 Perirectal abscess
 - 1.8.1.7 Perianal/Pilonidal abscess
 - 1.8.2 Inflammatory disorders
 - 1.8.2.1 Proctitis
 - 1.8.3 Tumors
- 1.9 Abdominal Wall
 - 1.9.1 Hernias (SEE 13.1.9)
- 1.10 Peritoneum
 - 1.10.1 Ascites
 - 1.10.2 Spontaneous bacterial peritonitis

2.0 CARDIOVASCULAR DISORDERS

- 2.1 Pathophysiology
 - 2.1.1 Congenital disorders
 - 2.1.2 Acquired disorders
 - 2.1.3 Effects of aging
- 2.2 Diseases of the Myocardium, Acquired
 - 2.2.1 Cardiac failure
 - 2.2.1.1 High output
 - 2.2.1.2 Low output
 - 2.2.1.3 Cor pulmonale
 - 2.2.2 Cardiomyopathy
 - 2.2.3 Ischemic heart disease
 - 2.2.3.1 Angina
 - 2.2.3.1.1 Stable
 - 2.2.3.1.2 Variant
 - 2.2.3.1.3 Unstable
 - 2.2.3.2 Myocardial infarction
 - 2.2.3.3 Cardiogenic shock
 - 2.2.3.4 Ventricular aneurysm
 - 2.2.4 Endocarditis
 - 2.2.5 Valvular heart disease
 - 2.2.5.1 Aortic insufficiency/stenosis
 - 2.2.5.2 Mitral insufficiency/stenosis
 - 2.2.5.3 Pulmonary insufficiency/stenosis
 - 2.2.5.4 Tricuspid insufficiency/stenosis
 - 2.2.6 Myocarditis (SEE 13.2.3.3)
- 2.3 Diseases of the Pericardium
 - 2.3.1 Pericarditis (SEE 13.2.3.1)
 - 2.3.2 Pericardial effusion/tamponade
- 2.4 Diseases of the Conduction System (Disturbances of Cardiac Rhythm)
 - 2.4.1 Dysrhythmias (SEE 13.2.1)
 - 2.4.1.1 Atrial flutter/fibrillation
 - 2.4.1.2 Atrial/junctional ectopy
 - 2.4.1.3 Preexcitation syndromes
 - 2.4.1.4 Supraventricular tachycardia/bradycardia
 - 2.4.1.5 Ventricular flutter/fibrillation
 - 2.4.1.6 Ventricular tachycardia
 - 2.4.1.7 Ventricular ectopy
 - 2.4.1.8 QT interval syndrome
 - 2.4.2 Conduction blocks
 - 2.4.2.1 Sinoatrial block
 - 2.4.2.2 Sick sinus syndrome
 - 2.4.2.3 Atrioventricular blocks (11, 21, 31)
 - 2.4.2.4 Bundle branch blocks

- 2.5 Diseases of the Circulation, Acquired
 - 2.5.1 Arterial
 - 2.5.1.1 Atherosclerosis/insufficiency
 - 2.5.1.2 Aneurysm
 - 2.5.1.2.1 Aortic/iliac
 - 2.5.1.2.2 Peripheral arterial
 - 2.5.1.3 Arteritis
 - 2.5.1.4 Emboli
 - 2.5.1.5 Spasm
 - 2.5.1.6 Thrombosis
 - 2.5.1.7 Aortic dissection
 - 2.5.2 Venous
 - 2.5.2.1 Venous insufficiency/varicosities
 - 2.5.2.2 Thromboembolism
 - 2.5.2.3 Thrombophlebitis
 - 2.5.3 Lymphatics
- 2.6 Congenital Abnormalities of the Cardiovascular System (SEE 13.3.2)
 - 2.6.1 Familial/genetically transmitted disorders
 - 2.6.2 Disorders due to anatomic anomalies
 - 2.6.2.1 Hypertrophic heart disease
 - 2.6.2.2 Mitral valve prolapse
 - 2.6.2.3 Patent foramen ovale
- 2.7 Cardiac Transplant Patient
- 2.8 Hypertension
 - 2.8.1 Acute hypertensive crisis (SEE 12.3.6)
 - 2.8.2 Chronic hypertension
 - 2.8.2.1 Essential
 - 2.8.2.2 Secondary
- 2.9 Primary Tumors of the Heart
- 2.10 Myocardial Manifestations of Systemic Diseases
 - 2.10.1 Infections
 - 2.10.1.1 Early (endocarditis 21 sepsis)
 - 2.10.1.2 Late (rheumatic fever 21 group A streptococcal infection)
 - 2.10.2 Endocrine and metabolic diseases (SEE 13.3)
 - 2.10.3 Rheumatologic
 - 2.10.4 Renal
 - 2.10.5 Toxic exposures
- 2.11 Treatment Modalities
 - 2.11.1 Thrombolytic therapy
 - 2.11.2 Pharmacologic agents
 - 2.11.3 Cardiac pacemakers
 - 2.11.3.1 Temporary
 - 2.11.3.2 Permanent
 - 2.11.4 Surgical interventions

- 2.11.4.1 Vascular reconstruction
- 2.11.4.2 Angioplasty
- 2.11.4.3 Circulatory augmentation
- 2.11.4.4 Implantable defibrillators

3.0 CUTANEOUS DISORDERS

- 3.1 Dermatitis
 - 3.1.1 Acne
 - 3.1.2 Atopic
 - 3.1.3 Contact
 - 3.1.4 Dyshidrotic eczema
 - 3.1.5 Exfoliative
 - 3.1.6 Lichen simplex
 - 3.1.7 Psoriasis
 - 3.1.8 Seborrhea
 - 3.1.9 Stasis
 - 3.1.10 Photosensitivity
 - 3.1.11 Nummular eczema
- 3.2 Infections
 - 3.2.1 Bacterial
 - 3.2.1.1 Abscesses
 - 3.2.1.2 Cellulitis/lymphangitis
 - 3.2.1.3 Erysipelas
 - 3.2.1.4 Folliculitis
 - 3.2.1.5 Impetigo
 - 3.2.1.6 Bacterial exanthems
 - 3.2.2 Fungal
 - 3.2.2.1 Candida
 - 3.2.2.2 Tinea
 - 3.2.3 Parasitic
 - 3.2.3.1 Pediculosis
 - 3.2.3.2 Scabies
 - 3.2.4 Viral
 - 3.2.4.1 Aphthous ulcers
 - 3.2.4.2 Herpes simplex
 - 3.2.4.3 Herpes zoster
 - 3.2.4.4 Molluscum contagiosum
 - 3.2.4.5 Warts
 - 3.2.4.6 Viral exanthems
- 3.3 Maculopapular Lesions
 - 3.3.1 Pityriasis rosea
 - 3.3.2 Purpura and petechiae
 - 3.3.3 Urticaria
- 3.4 Papular/Nodular Lesions
 - 3.4.1 Epidermal inclusion cysts
 - 3.4.2 Fibroma
 - 3.4.3 Hemangioma

- 3.4.4 Lipoma
- 3.4.5 Nevi
- 3.4.6 Lichen planus
- 3.5 Erythemas
 - 3.5.1 Erythema multiforme
 - 3.5.2 Erythema nodosum
- 3.6 Vesicular/Bullous Lesions
 - 3.6.1 Pemphigus/pemphigoid
 - 3.6.2 Scalded skin syndrome
 - 3.6.3 Toxic epidermal necrolysis
- 3.7 Cancers
 - 3.7.1 Basal cell
 - 3.7.2 Kaposi's sarcoma
 - 3.7.3 Melanoma
 - 3.7.4 Squamous cell
- 3.8 Cutaneous Manifestations of Allergic Reactions
- 3.9 Cutaneous Manifestations of Systemic Disease
- 4.0 ENDOCRINE, METABOLIC, AND NUTRITIONAL DISORDERS (SEE 13.3)**
- 4.1 Acid-Base Disturbances
 - 4.1.1 Metabolic
 - 4.1.1.1 Acidosis
 - 4.1.1.2 Alkalosis
 - 4.1.2 Mixed acid-base disorders
 - 4.1.3 Respiratory
 - 4.1.3.1 Acidosis
 - 4.1.3.2 Alkalosis
- 4.2 Adrenal Disease
 - 4.2.1 Hyperadrenalism (Cushing's syndrome)
 - 4.2.2 Hypoadrenalism (Addison's disease)
- 4.3 Fluid and Electrolyte Disturbances
 - 4.3.1 Calcium
 - 4.3.2 Chloride
 - 4.3.3 Magnesium
 - 4.3.4 Phosphorus
 - 4.3.5 Potassium
 - 4.3.6 Sodium
 - 4.3.7 Water
 - 4.3.8 Syndrome of inappropriate antidiuretic hormone
- 4.4 Glucose Metabolism
 - 4.4.1 Diabetes mellitus

- 4.4.1.1 Diabetic ketoacidosis
- 4.4.1.2 Hyperosmolar coma
- 4.4.2 Hypoglycemic syndromes
- 4.5 Nutritional Disorders (SEE 13.8.2)
 - 4.5.1 Wernicke-Korsakoff syndrome
 - 4.5.2 Vitamin deficiency
 - 4.5.3 Vitamin excess
- 4.6 Parathyroid Disease
- 4.7 Pheochromocytoma
- 4.8 Pituitary Disorders
 - 4.8.1 Panhypopituitarism
 - 4.8.2 Growth hormone abnormalities
 - 4.8.3 Tumors
- 4.9 Thyroid Disorders
 - 4.9.1 Hyperthyroidism/thyroid storm
 - 4.9.2 Hypothyroidism/myxedema (SEE 13.3.2.2)
 - 4.9.3 Thyroiditis
- 4.10 Endocrine Manifestations of Neoplasia
- 5.0 ENVIRONMENTAL DISORDERS**
- 5.1 Diving Emergencies/Dysbarism
 - 5.1.1 Acute gas embolism
 - 5.1.2 Decompression sickness
- 5.2 Submersion Incidents
 - 5.2.1 Near drowning
 - 5.2.2 Cold water immersion
- 5.3 Electrical Injury (SEE 18.4.17.4.2)
 - 5.3.1 Lightning injury
 - 5.3.2 AC/DC current
 - 5.3.3 High voltage/low voltage
- 5.4 High-Altitude Illness
 - 5.4.1 Acute mountain sickness
 - 5.4.2 High-altitude cerebral edema
 - 5.4.3 High-altitude pulmonary edema
- 5.5 Radiation Injury
- 5.6 Poisonous Plants (SEE 17.2.34)
- 5.7 Smoke Inhalation (SEE 17.2.26)

5.8 Temperature-Related Illness

- 5.8.1 Heat
- 5.8.2 Cold
 - 5.8.2.1 Hypothermia
 - 5.8.2.2 Frostbite

5.9 Bites and Stings (SEE 18.4.17.6)

- 5.9.1 Arthropods
 - 5.9.1.1 Insects
 - 5.9.1.2 Spiders
 - 5.9.1.3 Scorpions
- 5.9.2 Mammals
- 5.9.3 Marine organisms
- 5.9.4 Reptiles

6.0 HEAD, EAR, EYE, NOSE, THROAT DISORDERS (SEE 13.7)

6.1 Ear

- 6.1.1 Cellulitis/abscess of external ear
- 6.1.2 Foreign body
- 6.1.3 Labyrinthitis
- 6.1.4 Malignant otitis externa
- 6.1.5 Mastoiditis
- 6.1.6 Ménière's disease
- 6.1.7 Otitis externa
- 6.1.8 Otitis media (SEE 13.7.6)
- 6.1.9 Tympanic membrane perforation

6.2 Nose

- 6.2.1 Epistaxis anterior
- 6.2.2 Epistaxis posterior
- 6.2.3 Nasal foreign body (SEE 13.7.2)
- 6.2.4 Rhinitis
- 6.2.5 Sinusitis (SEE 13.7.9)
 - 6.2.5.1 Acute
 - 6.2.5.2 Chronic

6.3 Oropharynx/Throat

- 6.3.1 Foreign body
- 6.3.2 Gingivitis (SEE 13.7.10)
- 6.3.3 Larynx/trachea
 - 6.3.3.1 Acute diphtheric laryngitis
 - 6.3.3.2 Acute non-diphtheric infection
 - 6.3.3.2.1 Bacterial tracheitis
 - 6.3.3.2.2 Epiglottitis
 - 6.3.3.2.3 Laryngitis
- 6.3.4 Ludwig's angina
- 6.3.5 Oral candidiasis
- 6.3.6 Pericoronitis

- 6.3.7 Periodontal abscess
- 6.3.8 Tonsillitis/peritonsillar abscess (SEE 13.7.8)
- 6.3.9 Pharyngitis (SEE 13.7.7 and 16.1)
- 6.3.10 Retropharyngeal abscess (SEE 13.7.15)
- 6.3.11 Sialoadenitis
- 6.3.12 Sialolithiasis
- 6.3.13 Stomatitis
- 6.3.14 Temporal-mandibular joint disorders
- 6.3.15 Uvulitis

6.4 Eye (SEE 18.4.6)

- 6.4.1 External eye
 - 6.4.1.1 Blepharitis
 - 6.4.1.2 Chalazion/hordeolum
 - 6.4.1.3 Conjunctivitis
 - 6.4.1.4 Corneal abrasions
 - 6.4.1.5 Dacryocystitis/dacryoadenitis
 - 6.4.1.6 Foreign body
- 6.4.2 Anterior pole
 - 6.4.2.1 Cataract
 - 6.4.2.2 Glaucoma
 - 6.4.2.3 Hyphema/hypopyon
 - 6.4.2.4 Iritis.
- 6.4.3 Posterior pole
 - 6.4.3.1 Choroiditis
 - 6.4.3.2 Optic neuritis
 - 6.4.3.3 Papilledema
 - 6.4.3.4 Retinal detachment
 - 6.4.3.5 Vascular occlusion
 - 6.4.3.5.1 Central retinal artery
 - 6.4.3.5.2 Central retinal vein
 - 6.4.3.6 Vitreous hemorrhage
 - 6.4.3.7 Retinal manifestations of systemic diseases
- 6.4.4 Orbit
 - 6.4.4.1 Panophthalmitis
 - 6.4.4.2 Periorbital/preseptal orbital cellulitis (SEE 13.12.1.1.1 and 13.12.1.1.2)

6.5 Cavernous Sinus Thrombosis

7.0 HEMATOLOGIC DISORDERS (SEE 13.4)

7.1 Hemostatic Disorders (SEE 13.4.3)

- 7.1.1 Clotting factor disorders
 - 7.1.1.1 Hemophilias
 - 7.1.1.2 Acquired
- 7.1.2 Disseminated intravascular coagulation
- 7.1.3 Platelet disorders
 - 7.1.3.1 Immune thrombocytopenic purpura
 - 7.1.3.2 Thrombotic thrombocytopenic purpura
 - 7.1.3.3 Drug inactivation of platelets

- 7.1.4 Von Willebrand's disease
- 7.2 Lymphomas (SEE 13.4.5)
- 7.3 Pancytopenia
- 7.4 Red Blood Cell Disorders
 - 7.4.1 Anemia (SEE 13.4.1)
 - 7.4.1.1 Aplastic
 - 7.4.1.2 Hemolytic
 - 7.4.1.2.1 Glucose-6-phosphate dehydrogenase deficiency
 - 7.4.1.2.2 Hemolytic uremic syndrome
 - 7.4.1.3 Hypochromic/microcytic
 - 7.4.1.4 Megaloblastic
 - 7.4.1.5 Normochromic normocytic
 - 7.4.1.6 Hemoglobinopathies (SEE 13.4.2)
 - 7.4.1.6.1 Sickle cell disease/trait
 - 7.4.1.6.2 Sickle C disease
 - 7.4.1.6.3 Thalassemia
 - 7.4.2 Polycythemia
- 7.5 Transfusions
 - 7.5.1 Autotransfusion
 - 7.5.2 Complications
 - 7.5.2.1 Febrile
 - 7.5.2.2 Hemolytic
 - 7.5.2.3 IgA-mediated
 - 7.5.2.4 Disease transmission risk
 - 7.5.2.4.1 HIV
 - 7.5.2.4.2 Hepatitis
 - 7.5.2.5 Of massive transfusions
 - 7.5.3 Component therapy
 - 7.5.4 Synthetic blood replacement
 - 7.5.5 Indications for transfusion
- 7.6 White Blood Cell Disorders
 - 7.6.1 Leukemia (SEE 13.4.4)
 - 7.6.2 Leukemoid reaction
 - 7.6.3 Leukopenia
 - 7.6.4 Multiple myeloma

8.0 IMMUNE SYSTEM DISORDERS

- 8.1 Humoral Immunity
- 8.2 Cellular Immunity
- 8.3 Chemical Mediators
- 8.4 Complement

- 8.5 Autoimmune Diseases
 - 8.5.1 Acute rheumatic fever
 - 8.5.2 Collagen vascular diseases
 - 8.5.2.1 Dermatomyositis
 - 8.5.2.2 Polymyositis
 - 8.5.2.3 Reiter's
 - 8.5.2.4 Rheumatoid arthritis
 - 8.5.2.5 Sarcoidosis
 - 8.5.2.6 Systemic lupus erythematosus
 - 8.5.2.7 Scleroderma
 - 8.5.3 Nephritis
 - 8.5.4 Thyroiditis
 - 8.5.5 Vasculitis

8.6 Immune Deficiency Syndromes

- 8.6.1 HIV
- 8.6.2 Immunosuppression
- 8.6.3 Drug-related
- 8.6.4 Radiation-induced
- 8.6.5 Malnutrition

8.7 Transplant-Related Problems

- 8.7.1 Rejection

8.8 Hypersensitivity

- 8.8.1 Anaphylactic/anaphylactoid reactions
- 8.8.2 Angioedema
- 8.8.3 Allergic rhinitis
- 8.8.4 Drug allergies
- 8.8.5 Serum sickness

9.0 SYSTEMIC INFECTIOUS DISORDERS

9.1 Bacterial

- 9.1.1 Botulism
- 9.1.2 Gonococcal disease
- 9.1.3 Bacteremia/sepsis
- 9.1.4 Mycobacterial infections
 - 9.1.4.1 Tuberculosis
 - 9.1.4.2 Atypical mycobacteria
- 9.1.5 Meningococcemia
- 9.1.6 Plague
- 9.1.7 Tetanus
- 9.1.8 Toxic shock syndrome
- 9.1.9 Spirochetes
 - 9.1.9.1 Lyme disease
 - 9.1.9.2 Syphilis
- 9.1.10 Chlamydia
- 9.1.11 Mycoplasma (SEE 16.10.3)

9.2 Fungal

- 9.3 Protozoan B Parasites
 - 9.3.1 Malaria
 - 9.3.2 Toxoplasmosis
- 9.4 Rickettsial
 - 9.4.1 Rocky Mountain spotted fever
 - 9.4.2 Ehrlichiosis
- 9.5 Viral
 - 9.5.1 HIV
 - 9.5.2 Infectious mononucleosis
 - 9.5.3 Influenza
 - 9.5.4 Mumps
 - 9.5.5 Polio
 - 9.5.6 Rabies
 - 9.5.6.1 Disease
 - 9.5.6.2 Prophylaxis
 - 9.5.7 Rubella (SEE 13.12.4.4)
 - 9.5.8 Roseola (SEE 13.12.4.3)
 - 9.5.9 Varicella/zoster (SEE 13.12.4.5)
 - 9.5.10 Herpes simplex
- 9.6 Travel-Related (SEE 9.7.2 and 13.15)
- 9.7 Prevention
 - 9.7.1 Prophylaxis
 - 9.7.2 Immunizations (SEE 13.15 and 20.4.20)

10.0 MUSCULOSKELETAL DISORDERS (NONTRAUMATIC)

- 10.1 Bony Abnormalities
 - 10.1.1 Aseptic necrosis of hip
 - 10.1.2 Osteogenesis imperfecta
 - 10.1.3 Osteomyelitis
 - 10.1.4 Tumors
 - 10.1.5 Bone cysts
 - 10.1.6 Osteoporosis
 - 10.1.7 Osteomalacia
 - 10.1.8 Bone spurs
 - 10.1.9 Paget's disease
- 10.2 Joint Abnormalities
 - 10.2.1 Arthritis
 - 10.2.1.1 Septic
 - 10.2.1.2 Gout/pseudogout
 - 10.2.1.3 Collagen vascular
 - 10.2.1.4 Degenerative
 - 10.2.2 Osteochondritis dissecans
- 10.3 Disorders of the Spine

- 10.3.1 Ankylosing spondylitis
- 10.3.2 Spondylolysis/spondylolisthesis
- 10.3.3 Disk disorders
 - 10.3.3.1 Herniated nucleus pulposus
 - 10.3.3.2 Discitis
- 10.3.4 Low back syndromes (OM considerations)
 - 10.3.4.1 Acute sprain
 - 10.3.4.2 Sacroiliitis
 - 10.3.4.3 Sciatica
 - 10.3.4.4 Tumors
 - 10.3.4.5 Cauda equina syndrome
- 10.3.5 Spinal stenosis

- 10.4 Overuse Syndromes
 - 10.4.1 Tendonitis
 - 10.4.2 Bursitis
 - 10.4.3 Fibrositis
 - 10.4.4 Muscle strains
 - 10.4.5 Carpal tunnel syndrome

- 10.5 Muscle Abnormalities
 - 10.5.1 Muscular dystrophies
 - 10.5.2 Rhabdomyolysis
 - 10.5.3 Myositis
 - 10.5.4 Myositis ossificans

- 10.6 Soft Tissue Infections
 - 10.6.1 Necrotizing fasciitis
 - 10.6.2 Gangrene
 - 10.6.3 Paronychia
 - 10.6.4 Felon
 - 10.6.5 Tenosynovitis

11.0 NERVOUS SYSTEM DISORDERS

- 11.1 Stroke
 - 11.1.1 Subarachnoid hemorrhage
 - 11.1.1.1 Cerebral aneurysm
 - 11.1.1.2 Arteriovenous malformation
 - 11.1.2 Intracerebral hemorrhage
 - 11.1.3 Ischemic stroke
 - 11.1.3.1 Embolic
 - 11.1.3.2 Thrombotic
 - 11.1.4 Transient ischemic attack
- 11.2 Cranial Nerve Disorders
 - 11.2.1 Bell's palsy
 - 11.2.2 Trigeminal neuralgia
 - 11.2.3 Other cranial nerves
- 11.3 Demyelinating Disorders
 - 11.3.1 Multiple sclerosis

- 11.4 Infections/Inflammatory Disorders
 - 11.4.1 Abscess
 - 11.4.1.1 Brain
 - 11.4.1.2 Epidural
 - 11.4.2 Encephalitis (SEE 13.5.2)
 - 11.4.3 Meningitis (SEE 13.5.2)
 - 11.4.4 Myelitis
 - 11.4.5 Neuritis
- 11.5 Neuromuscular Disorders
 - 11.5.1 Landry's/Guillain-Barré syndromes
 - 11.5.2 Myasthenia gravis
 - 11.5.3 Amyotrophic lateral sclerosis
- 11.6 Peripheral Neuropathy
 - 11.6.1 Compression syndromes
 - 11.6.2 Toxic and other neuropathies
- 11.7 Spinal Cord Compression
- 11.8 Hydrocephalus (SEE 13.5.4)
 - 11.8.1 Acute
 - 11.8.2 Normal pressure
 - 11.8.3 CNS shunt malfunction
- 11.9 Seizure Disorders
 - 11.9.1 Status epilepticus
 - 11.9.2 Focal seizures
 - 11.9.3 Generalized seizures
 - 11.9.4 Pseudo seizures
- 11.10 Headache
- 11.11 Pseudotumor Cerebri/Benign Intracranial Hypertension
- 11.12 Tumors
- 11.13 Movement Disorders

12.0 OBSTETRICS AND DISORDERS OF PREGNANCY

- 12.1 Contraception
- 12.2 Pregnancy, Uncomplicated
- 12.3 Pregnancy, Complicated
 - 12.3.1 Ectopic
 - 12.3.2 Hyperemesis gravidarum

- 12.3.3 Abortion
 - 12.3.3.1 Threatened
 - 12.3.3.2 Inevitable
 - 12.3.3.3 Incomplete
 - 12.3.3.4 Complete
 - 12.3.3.5 Septic
 - 12.3.3.6 Missed
- 12.3.4 Abruptio placentae
- 12.3.5 Placenta previa
- 12.3.6 Toxemia/pregnancy-induced hypertension (SEE 2.8.1)
 - 12.3.6.1 Preeclampsia
 - 12.3.6.2 Eclampsia
- 12.3.7 Rh incompatibility
- 12.3.8 Hydatidiform mole
- 12.3.9 Underlying illness
- 12.4 Labor, Uncomplicated
- 12.5 Labor, Complicated
 - 12.5.1 Premature rupture of membranes
 - 12.5.2 Preterm labor
 - 12.5.3 Failure to progress
 - 12.5.4 Fetal distress
 - 12.5.5 Ruptured uterus
- 12.6 Delivery, Uncomplicated
 - 12.6.1 Presentation
 - 12.6.2 Position
 - 12.6.3 Lie
 - 12.6.4 Episiotomy
- 12.7 Delivery, Complicated
 - 12.7.1 Presentation
 - 12.7.2 Dystocia
 - 12.7.3 Prolapsed cord
 - 12.7.4 Retained placenta (SEE 12.8.1)
 - 12.7.5 Uterine inversion
 - 12.7.6 Multiple births
 - 12.7.7 Stillbirth
 - 12.7.8 Emergency cesarean section (SEE 18.5.2.3 and 23.4.2.3)
- 12.8 Postpartum Complications
 - 12.8.1 Retained products of conception (SEE 12.7.4)
 - 12.8.2 Hemorrhage
 - 12.8.3 Endometritis
 - 12.8.4 Mastitis

13.0 PEDIATRIC DISORDERS

- 13.1 Abdominal/Gastrointestinal (SEE 1.0)
 - 13.1.1 Anorectal fissures (SEE 1.8.1.2)
 - 13.1.2 Appendicitis
 - 13.1.3 Colic/formula intolerance
 - 13.1.4 Congenital lesions
 - 13.1.4.1 Tracheoesophageal fistula
 - 13.1.4.2 Esophageal atresia
 - 13.1.4.3 Achalasia (SEE 1.1.1.2)
 - 13.1.4.4 Pyloric stenosis
 - 13.1.4.5 Biliary atresia
 - 13.1.4.6 Meckel's diverticulum (SEE 1.6.2.3)
 - 13.1.4.7 Aganglionic megacolon –Hirschsprung's (SEE 1.7.1.3) 65
 - 13.1.5 Foreign bodies (SEE 1.1.2.6)
 - 13.1.6 Gastroenteritis/enterocolitis
 - 13.1.6.1 Viral.
 - 13.1.6.2 Bacterial
 - 13.1.6.3 Parasitic
 - 13.1.6.4 Allergic
 - 13.1.6.5 Inflammatory bowel disease
 - 13.1.6.6 Toxin-induced
 - 13.1.7 Gastroesophageal reflux
 - 13.1.8 Gastrointestinal bleeding (SEE 1.5.3.3)
 - 13.1.8.1 Upper
 - 13.1.8.2 Lower
 - 13.1.9 Hernias (SEE 1.9.1)
 - 13.1.9.1 Inguinal
 - 13.1.9.2 Umbilical
 - 13.1.10 Intussusception
 - 13.1.11 Malrotation of the bowel with volvulus
 - 13.1.12 Tumors
 - 13.1.12.1 Neuroblastoma
 - 13.1.12.2 Wilms' tumor
- 13.2 Cardiovascular
 - 13.2.1 Dysrhythmias (SEE 2.4.1)
 - 13.2.1.1 Fast
 - 13.2.1.2 Irregular
 - 13.2.1.3 Slow
 - 13.2.2 Congenital heart disease
 - 13.2.2.1 Left to right shunts
 - 13.2.2.2 Right to left shunts
 - 13.2.2.3 Obstructive lesions
 - 13.2.3 Acquired heart disease
 - 13.2.3.1 Pericarditis (SEE 2.3.1)
 - 13.2.3.2 Infective endocarditis (SEE 2.2.6)
 - 13.2.3.3 Myocarditis (SEE 2.2.6).

- 13.2.3.4 Rheumatic fever
- 13.3 Endocrine/Metabolic (SEE 2.10.2 and 4.0)
 - 13.3.1 Glucose metabolism
 - 13.3.1.1 Diabetes mellitus
 - 13.3.1.2 Diabetic ketoacidosis
 - 13.3.1.3 Hypoglycemia
 - 13.3.2 Congenital abnormalities (SEE 2.6)
 - 13.3.2.1 Adrenal hyperplasia
 - 13.3.2.2 Hypothyroidism (SEE 4.9.2)
 - 13.3.3 Inborn errors of metabolism
- 13.4 Hematologic (SEE 7.0)
 - 13.4.1 Anemias (SEE 7.4.1)
 - 13.4.2 Hemoglobinopathies (SEE 7.4.1.6)
 - 13.4.3 Hemostatic disorders (SEE 7.1)
 - 13.4.4 Leukemias (SEE 7.6.1)
 - 13.4.5 Lymphomas (SEE 7.2)
- 13.5 Neurologic
 - 13.5.1 Encephalopathies
 - 13.5.1.1 Reye's syndrome
 - 13.5.2 Meningitis/encephalitis (SEE 11.4.3 and 11.4.2)
 - 13.5.2.1 Aseptic/viral
 - 13.5.2.2 Bacterial
 - 13.5.3 Seizures (SEE 13.16.4)
 - 13.5.3.1 Febrile
 - 13.5.3.2 Nonfebrile
 - 13.5.4 Hydrocephalus/ventricular shunts (SEE 11.8)
 - 13.5.5 Neuromuscular disorders
 - 13.5.6 Tumors
- 13.6 Orthopedic (SEE 18.4.12.2.2.1 and 18.6.7)
 - 13.6.1 Legg-Calvé-Perthes disease
 - 13.6.2 Septic joint
 - 13.6.3 Osteomyelitis
 - 13.6.4 Slipped capital femoral epiphysis
 - 13.6.5 Transient synovitis
 - 13.6.6 Tumors
 - 13.6.6.1 Ewing's sarcoma
 - 13.6.6.2 Osteogenic sarcoma
 - 13.6.7 Osgood-Schlatter disease
 - 13.6.8 Congenital dislocation of the hip
- 13.7 Head, Ear, Eye, Nose, Throat (SEE 6.0 and 18.6.2)
 - 13.7.1 Epiglottitis.
 - 13.7.2 Foreign bodies (SEE 6.2.3)
 - 13.7.3 Laryngotracheobronchitis (croup)
 - 13.7.4 Nasopharyngitis (upper respiratory infection)
 - 13.7.5 Otitis externa

- 13.7.6 Otitis media (SEE 6.1.8)
 - 13.7.7 Pharyngitis (SEE 6.3.9)
 - 13.7.8 Tonsillitis/peritonsillar abscess (SEE 6.3.8)
 - 13.7.9 Sinusitis (SEE 6.2.5)
 - 13.7.10 Gingivostomatitis (SEE 6.3.2)
 - 13.7.11 Torticollis
 - 13.7.12 Tracheitis/bacterial
 - 13.7.13 Tumor
 - 13.7.13.1 Retinoblastoma
 - 13.7.14 Congenital cysts
 - 13.7.15 Retropharyngeal abscess (SEE 6.3.10)
 - 13.7.16 Cervical adenitis
- 13.8 Psychiatric
- 13.8.1 Abuse (SEE 14.2 and 18.6.1.4)
 - 13.8.2 Eating disorders (SEE 4.5)
 - 13.8.3 Depression/suicide (SEE 14.2.2 and 14.9.1)
 - 13.8.4 Acute psychosis
 - 13.8.5 Behavioral disorders (SEE 14.0)
- 13.9 Respiratory (SEE 16.1)
- 13.9.1 Bronchiolitis
 - 13.9.2 Bronchopulmonary dysplasia
 - 13.9.3 Cystic fibrosis (SEE 16.6.4)
 - 13.9.4 Foreign bodies
 - 13.9.5 Asthma /reactive airway disease (SEE 16.6.1)
 - 13.9.6 Pneumonia
 - 13.9.6.1 Chlamydial
 - 13.9.6.2 Mycoplasmal
 - 13.9.6.3 Bacterial
 - 13.9.6.4 Viral
 - 13.9.6.4.1 Parainfluenza
 - 13.9.6.4.2 Respiratory syncytial
 - 13.9.7 Pertussis
- 13.10 Bacteremia and Sepsis (SEE 13.16.3)
- 13.11 Rheumatologic
- 13.11.1 Juvenile rheumatoid arthritis
 - 13.11.2 Kawasaki syndrome
 - 13.11.3 Schönlein-Henoch purpura
- 13.12 Skin and Soft Tissue Infections
- 13.12.1 Bacterial
 - 13.12.1.1 Cellulitis
 - 13.12.1.1.1 Orbital (SEE 6.4.4.2)
 - 13.12.1.1.2 Periorbital/preseptal (SEE 6.4.4.2)
 - 13.12.1.2 Impetigo
 - 13.12.1.3 Staphylococcal scalded skin syndrome
 - 13.12.2 Infestations
 - 13.12.2.1 Pediculosis

- 13.12.2.2 Scabies
 - 13.12.3 Fungal
 - 13.12.3.1 Candida
 - 13.12.3.2 Tinea/kerion
 - 13.12.4 Viral exanthema
 - 13.12.4.1 Erythema infectiosum
 - 13.12.4.2 Measles
 - 13.12.4.3 Roseola (SEE 9.5.8)
 - 13.12.4.4 Rubella (SEE 9.5.7)
 - 13.12.4.5 Varicella/zoster (SEE 9.5.9)
- 13.13 Genitourinary
- 13.13.1 Congenital kidney abnormalities
 - 13.13.1.1 Polycystic kidney disease
 - 13.13.1.2 Horseshoe kidney
 - 13.13.1.3 Congenital absence of kidney
 - 13.13.2 Penile
 - 13.13.2.1 Balanitis
 - 13.13.2.2 Phimosis/paraphimosis (SEE 19.2.1.3)
 - 13.13.2.3 Priapism
 - 13.13.3 Testicular
 - 13.13.3.1 Torsion
 - 13.13.3.2 Undescended testis
 - 13.13.4 Urinary tract infections
 - 13.13.5 Vaginal foreign bodies
 - 13.13.6 Renal failure (SEE 15.4)
- 13.14 Sudden Infant Death Syndrome/Acute Life-Threatening Event
- 13.15 Immunizations (SEE 9.7.2 and 20.4.20)
- 13.16 Neonatal
- 13.16.1 Assessment
 - 13.16.2 Jaundice
 - 13.16.3 Sepsis (SEE 13.10)
 - 13.16.4 Seizures (SEE 13.5.3)
- 13.17 Pediatric/Neonatal Resuscitation
- 13.17.1 Fluid and electrolyte management (SEE 18.6.1.3)
- 14.0 PSYCHOBEHAVIORAL DISORDERS (SEE 13.8.5)**
- 14.1 Thought Disorders
- 14.1.1 Schizophrenia
 - 14.1.2 Delusional paranoia
- 14.2 Mood Disorders (SEE 13.8.1)

- 14.2.1 Bipolar disorder
- 14.2.2 Depression (SEE 13.8.3)
- 14.3 Anxiety Disorders
 - 14.3.1 Posttraumatic stress
 - 14.3.2 Panic
 - 14.3.3 Phobia
 - 14.3.4 Obsessive-compulsive
 - 14.3.5 Catatonic
- 14.4 Somatoform Disorders
 - 14.4.1 Hysterical conversion
 - 14.4.2 Hypochondriasis
- 14.5 Factitious Disorders
 - 14.5.1 Munchausen syndrome
 - 14.5.2 Drug-seeking behavior
- 14.6 Addictive Behavior
 - 14.6.1 Substance abuse
 - 14.6.2 Eating disorders
 - 14.6.2.1 Anorexia nervosa
 - 14.6.2.2 Bulimia
- 14.7 Personality Disorders
 - 14.7.1 Antisocial
 - 14.7.2 Histrionic
 - 14.7.3 Obsessive/compulsive
 - 14.7.4 Passive/aggressive
 - 14.7.5 Borderline personality
- 14.8 Organic Brain Syndromes
 - 14.8.1 Delirium
 - 14.8.2 Dementia
 - 14.8.2.1 Alzheimer's disease
 - 14.8.2.2 Multi-infarct
 - 14.8.3 Amnesia
 - 14.8.3.1 Traumatic
 - 14.8.3.2 Transient global
 - 14.8.4 Intoxication and withdrawal
 - 14.8.4.1 Alcohol
 - 14.8.4.2 Sympathomimetics and cocaine
 - 14.8.4.3 Hallucinogens
 - 14.8.4.4 Phencyclidine
 - 14.8.4.5 Opioids
 - 14.8.4.6 Sedatives/hypnotics/anxiolytics
- 14.9 Risk Assessment
 - 14.9.1 Suicidal risk or self abuse (SEE 13.8.3)
 - 14.9.2 Risk of violence against others (i.e., abuse behavior) (SEE 14.12.1)
- 14.10 Involuntary Competency

Assessment/Commitment (SEE 20.7.2.1)

- 14.11 Treatment Modalities
 - 14.11.1 Major tranquilizers
 - 14.11.2 Sedatives/hypnotics
 - 14.11.3 Physical restraints
 - 14.11.4 Management of violence (SEE 20.4.21)
 - 14.11.5 Community resource utilization
- 14.12 Patterns of Violence/Abuse/Neglect
 - 14.12.1 Family violence (SEE 13.8.1, 14.9.2 and 18.1.11.2.1.3)
 - 14.12.2 Sexual assault (SEE 19.3).

15.0 RENAL DISORDERS

- 15.1 Structural Disorders
 - 15.1.1 Renal calculi
 - 15.1.2 Obstructive uropathy
 - 15.1.3 Renal obstruction
- 15.2 Infection
 - 15.2.1 Pyelonephritis
 - 15.2.2 Perinephric abscess
- 15.3 Glomerular Disorders
 - 15.3.1 Glomerulonephritis
 - 15.3.2 Nephrotic syndrome
- 15.4 Acute and Chronic Renal Failure (SEE 13.13.6)
- 15.5 Interstitial Tubular Necrosis
- 15.6 Interstitial Nephritis
- 15.7 Tumors
- 15.8 Complications of Dialysis

16.0 THORACIC-RESPIRATORY DISORDERS

- 16.1 Acute Upper Airway Obstruction (SEE 6.3.9, 13.9)
 - 16.1.1 Tracheostomy/complications
- 16.2 Breast Disorders
 - 16.2.1 Fibrocystic disease
 - 16.2.2 Tumor
 - 16.2.3 Infections

16.3 Disorders of Pleura, Mediastinum, and Chest Wall

- 16.3.1 Costochondritis
- 16.3.2 Mediastinal masses
- 16.3.3 Mediastinitis
- 16.3.4 Pleural effusions/empyema
- 16.3.5 Pleurisy
- 16.3.6 Pneumomediastinum
- 16.3.7 Pneumothoraces (SEE 18.4.10.12)
 - 16.3.7.1 Spontaneous
 - 16.3.7.2 Iatrogenic
 - 16.3.7.3 Tension

16.4 Hyperventilation Syndrome

16.5 Non-cardiogenic Pulmonary Edema (Adult Respiratory Distress Syndrome)

16.6 Obstructive/Restrictive Lung Disease

- 16.6.1 Asthma (SEE 13.9.5)
- 16.6.2 Bronchitis
- 16.6.3 Chronic obstructive pulmonary disease
- 16.6.4 Cystic fibrosis (SEE 13.9.3)
- 16.6.5 Interstitial fibrosis
- 16.6.6 Environmental/industrial exposure

16.7 Physical and Chemical Irritants/Insults

- 16.7.1 Chemical agents
- 16.7.2 Foreign bodies
- 16.7.3 Aspiration of gastric contents

16.8 Primary Pulmonary Hypertension

16.9 Pulmonary Embolism/Infarct

- 16.9.1 Venous thromboembolism
- 16.9.2 Fat
- 16.9.3 Septic
- 16.9.4 Amniotic fluid

16.10 Pulmonary Infections

- 16.10.1 Bacterial
- 16.10.2 Fungal
- 16.10.3 Mycoplasma (SEE 9.1.11)
- 16.10.4 Lung abscess
- 16.10.5 Bronchiectasis
- 16.10.6 Opportunistic
- 16.10.7 Septic embolus
- 16.10.8 Tuberculosis
- 16.10.9 Viral

16.11 Thoracic Outlet Syndrome (OM considerations)

16.12 Pulmonary Tumors

16.13 Sarcoidosis

16.14 Sleep Apnea Syndromes.

17.0 TOXICOLOGIC DISORDERS

17.1 Principles

- 17.1.1 Toxicologic information
- 17.1.2 Toxicologic diagnostic modalities
- 17.1.3 Toxidromes
- 17.1.4 Treatment modalities
 - 17.1.4.1 Antidotes
 - 17.1.4.2 Skin decontamination
 - 17.1.4.3 Gastric decontamination
 - 17.1.4.3.1 Emetics
 - 17.1.4.3.2 Lavage
 - 17.1.4.4 Enhanced elimination
 - 17.1.4.4.1 Activated charcoal
 - 17.1.4.4.2 Cathartics/whole bowel irrigation
 - 17.1.4.4.3 Diuresis
 - 17.1.4.4.4 Dialysis/hemoperfusion
 - 17.1.4.4.5 Hyperbaric oxygen
 - 17.1.5 Withdrawal syndromes

17.2 Drug and Chemical Classes

- 17.2.1 Acetaminophen
- 17.2.2 Alcohols
 - 17.2.2.1 Ethanol
 - 17.2.2.2 Ethylene glycol
 - 17.2.2.3 Isopropyl alcohol
 - 17.2.2.4 Methanol
- 17.2.3 Analgesics/anesthetics (SEE 22.2.1)
- 17.2.4 Anticholinergics/cholinergics
- 17.2.5 Anticoagulants (SEE 22.2.3)
- 17.2.6 Anticonvulsants (SEE 22.2.4)
- 17.2.7 Antidepressants
 - 17.2.7.1 Lithium
 - 17.2.7.2 Monoamine oxidase inhibitors
 - 17.2.7.3 Cyclic antidepressants
- 17.2.8 Antiparkinsonian drugs
- 17.2.9 Antihistamines (SEE 22.2.5)
- 17.2.10 Antipsychotics (SEE 22.2.6)
- 17.2.11 Bronchodilators (SEE 22.2.7)
- 17.2.12 Cannabis
- 17.2.13 Carbon monoxide (SEE 5.7)
- 17.2.14 Cardiovascular drugs (SEE 22.2.8)
 - 17.2.14.1 Antiarrhythmics
 - 17.2.14.2 Antihypertensives
 - 17.2.14.3 Digitalis preparations
 - 17.2.14.4 Calcium channel blockers

- 17.2.14.5 □ -Blockers
- 17.2.15 Caustic agents
- 17.2.16 Cocaine
- 17.2.17 Cyanides, hydrogen sulfide
- 17.2.18 Food additives
- 17.2.19 Hallucinogens
- 17.2.20 Hazardous material spills (SEE 21.4.3)
- 17.2.21 Heavy metals and chelation
- 17.2.22 Household/industrial poisons
- 17.2.23 Hormones/steroids (SEE 22.2.9)
- 17.2.24 Hydrocarbons/halogenated hydrocarbons
- 17.2.25 Hypoglycemics/insulin (SEE 22.2.10)
- 17.2.26 Inhaled toxins (SEE 5.7)
- 17.2.27 Iron
- 17.2.28 Isoniazid
- 17.2.29 Local anesthetics (SEE 22.2.12)
- 17.2.30 Locally acting drugs (SEE 22.2.13)
 - 17.2.30.1 Antacids
 - 17.2.30.2 Antiseptics
 - 17.2.30.3 Cathartics
 - 17.2.30.4 Laxatives
- 17.2.31 Irritant gases
- 17.2.32 Marine toxins
 - 17.2.32.1 Ciguatera
 - 17.2.32.2 Scombroid
- 17.2.33 Methemoglobinemia
- 17.2.34 Mushrooms/poisonous plants (SEE 5.6)
- 17.2.35 Nitrogen compounds
- 17.2.36 Nonsteroidal anti-inflammatories
- 17.2.37 Organophosphates/carbamate
- 17.2.38 Opiates/opioids (SEE 22.2.16)
- 17.2.39 Salicylates
- 17.2.40 Sedatives/hypnotics
 - 17.2.40.1 Barbiturates
 - 17.2.40.2 Benzodiazepines
 - 17.2.40.3 Chloral hydrate
- 17.2.41 Stimulants/sympathomimetics
- 17.2.42 Strychnine

18.0 TRAUMATIC DISORDERS (SEE 21.4.3.3)

18.1 Principles of Care

- 18.1.1 Prehospital trauma care
- 18.1.2 Triage
- 18.1.3 Resuscitation and stabilization
 - 18.1.3.1 Hemorrhagic shock
 - 18.1.3.2 Neurogenic shock
- 18.1.4 Role of the emergency physician
- 18.1.5 Team response
- 18.1.6 Reassessment and monitoring
- 18.1.7 Diagnosis

- 18.1.8 Treatment
- 18.1.9 Consultation
- 18.1.10 Disposition
- 18.1.11 Injury prevention and control
 - 18.1.11.1 Epidemiology overview
 - 18.1.11.2 Cause of injury
 - 18.1.11.2.1 Intentional injury
 - 18.1.11.2.1.1 Homicide
 - 18.1.11.2.1.2 Suicide
 - 18.1.11.2.1.3 Family violence: elder abuse, child abuse, domestic violence (SEE 14.12.1 and 18.6.1.4)
 - 18.1.11.2.2 Unintentional injury
 - 18.1.11.2.2.1 Motor vehicle crashes
 - 18.1.11.2.2.2 Falls
 - 18.1.11.2.2.3 Drownings
 - 18.1.11.2.2.4 Poisonings
 - 18.1.11.2.2.5 Burns and fire-related

injuries

- 18.1.11.2.2.6 Occupational injuries

18.2 Radiologic Evaluation

- 18.2.1 Plain radiography
- 18.2.2 Contrast radiography
- 18.2.3 Computed tomography scan
- 18.2.4 Angiography
- 18.2.5 Magnetic resonance imaging
- 18.2.6 Ultrasonography (SEE 23.3.7)

18.3 Mechanism of Injury

- 18.3.1 Blunt
- 18.3.2 Penetrating
 - 18.3.2.1 Gunshot wounds
 - 18.3.2.1.1 Ballistics
 - 18.3.2.2 Stab wounds
 - 18.3.2.3 Clinical forensics
- 18.3.3 Kinematics

18.4 Diagnosis and Management by Anatomic Areas

- 18.4.1 Head trauma
 - 18.4.1.1 Scalp lacerations/avulsions
 - 18.4.1.2 Skull fractures
 - 18.4.1.3 Brain concussions, contusions
 - 18.4.1.4 Intracranial hematomas
 - 18.4.1.5 Brainstem injuries
 - 18.4.1.6 Penetrating head trauma
 - 18.4.1.7 Cerebrospinal fluid leaks (otorrhea, rhinorrhea)
- 18.4.2 Spinal cord and peripheral nervous system trauma
 - 18.4.2.1 Complete spinal cord injuries
 - 18.4.2.2 Incomplete cord injuries
 - 18.4.2.3 Cauda equina injuries

- 18.4.2.4 Nerve root injuries
- 18.4.2.5 Brachial and lumbosacral plexus injuries
- 18.4.2.6 Peripheral nerve injuries
- 18.4.3 Injuries of the spine
 - 18.4.3.1 Fractures
 - 18.4.3.1.1 Cervical
 - 18.4.3.1.2 Thoracic
 - 18.4.3.1.3 Lumbar
 - 18.4.3.1.4 Sacral/coccygeal
 - 18.4.3.2 Dislocations/subluxations
 - 18.4.3.2.1 Unilateral facet
 - 18.4.3.2.2 Bilateral facet
 - 18.4.3.2.3 Ligamentous injuries
- 18.4.4 Facial fractures
 - 18.4.4.1 Frontal sinus
 - 18.4.4.2 Mandibular
 - 18.4.4.3 Maxillary
 - 18.4.4.4 Nasal
 - 18.4.4.5 Orbital
 - 18.4.4.6 Dental fractures and avulsions
 - 18.4.4.7 Zygomatic
- 18.4.5 Soft tissue facial injuries
 - 18.4.5.1 Complex lacerations
 - 18.4.5.2 Avulsions
 - 18.4.5.3 Severe abrasions
 - 18.4.5.4 Parotid gland/duct injuries
 - 18.4.5.5 Nerve injuries
- 18.4.6 Ophthalmologic trauma (SEE 6.4)
 - 18.4.6.1 Corneal abrasions/lacerations
 - 18.4.6.2 Foreign bodies
 - 18.4.6.3 Iritis
 - 18.4.6.4 Hyphema
 - 18.4.6.5 Lens dislocation
 - 18.4.6.6 Retinal detachment
 - 18.4.6.7 Penetrating globe injuries
 - 18.4.6.8 Eyelid lacerations
 - 18.4.6.9 Lacrimal duct injuries
 - 18.4.6.10 Corneal burns
 - 18.4.6.10.1 Acid
 - 18.4.6.10.2 Alkali
 - 18.4.6.10.3 Ultraviolet
- 18.4.7 Otologic trauma
 - 18.4.7.1 Lacerations
 - 18.4.7.2 Avulsions
 - 18.4.7.3 Subperichondrial hematoma
 - 18.4.7.4 Tympanic membrane perforation
- 18.4.8 Neck trauma
 - 18.4.8.1 Vascular injuries
 - 18.4.8.1.1 Carotid artery
 - 18.4.8.1.2 Internal and external jugular veins
 - 18.4.8.1.3 Thoracic duct
 - 18.4.8.2 Penetrating neck trauma
 - 18.4.8.2.1 Anterior and posterior triangle injuries
 - 18.4.8.2.2 Anatomic zones (I, II, III) and injuries specific to them
 - 18.4.8.2.3 Mandatory versus selective exploration
- 18.4.9 Laryngotracheal injuries
 - 18.4.9.1 Lacerations
 - 18.4.9.2 Crush injuries
 - 18.4.9.3 Vocal cord avulsions/hematomas
 - 18.4.9.4 Fractured larynx
 - 18.4.9.5 Tracheal transection
 - 18.4.9.6 Compression with hematomas
- 18.4.10 Chest trauma
 - 18.4.10.1 Penetrating chest trauma
 - 18.4.10.2 Rib fractures
 - 18.4.10.3 Sternal fractures
 - 18.4.10.4 Flail chest
 - 18.4.10.5 Clavicle fracture/dislocation
 - 18.4.10.6 Aortic disruption
 - 18.4.10.7 Myocardial contusion
 - 18.4.10.8 Pulmonary contusion
 - 18.4.10.9 Pericardial tamponade
 - 18.4.10.10 Vascular injuries
 - 18.4.10.11 Tracheobronchial tree injuries
 - 18.4.10.12 Pneumothoraces (SEE 16.3.7)
 - 18.4.10.12.1 Simple
 - 18.4.10.12.2 Open
 - 18.4.10.12.3 Tension
 - 18.4.10.13 Hemothorax
- 18.4.11 Abdominal trauma
 - 18.4.11.1 Penetrating abdominal trauma
 - 18.4.11.2 Abdominal wall contusion
 - 18.4.11.3 Solid viscus injuries
 - 18.4.11.4 Hollow viscus injuries
 - 18.4.11.5 Vascular injuries
 - 18.4.11.6 Diaphragmatic rupture
 - 18.4.11.7 Evisceration
 - 18.4.11.8 Mesenteric avulsion, hematoma
 - 18.4.11.9 Bladder rupture, contusion
 - 18.4.11.10 Renal injuries
 - 18.4.11.10.1 Contusions
 - 18.4.11.10.2 Lacerations
 - 18.4.11.10.3 Renal vascular injuries
 - 18.4.11.11 Ureteral injuries
- 18.4.12 Upper extremity bony trauma
 - 18.4.12.1 Fractures (open and closed)
 - 18.4.12.1.1 Phalangeal
 - 18.4.12.1.2 Metacarpal
 - 18.4.12.1.3 Carpal
 - 18.4.12.1.4 Forearm
 - 18.4.12.1.5 Supracondylar

- 18.4.12.1.6 Humeral shaft and head
- 18.4.12.1.7 Scapula
- 18.4.12.2 Dislocations/subluxations
 - 18.4.12.2.1 Shoulder
 - 18.4.12.2.1.1 Acromioclavicular
 - 18.4.12.2.1.2 Glenohumeral
 - 18.4.12.2.2 Elbow
 - 18.4.12.2.2.1 Radial head
 - 18.4.12.2.2.2 Posterior
 - 18.4.12.2.3 Wrist
 - 18.4.12.2.3.1 Lunate
 - 18.4.12.2.3.2 Perilunate
 - 18.4.12.2.4 Hand
 - 18.4.12.2.4.1 Meta-carpophalangeal joint
 - 18.4.12.2.4.2 Interphalangeal joint
- 18.4.13 Lower extremity bony trauma
 - 18.4.13.1 Fractures (open and closed)
 - 18.4.13.1.1 Phalangeal
 - 18.4.13.1.2 Metatarsal
 - 18.4.13.1.3 Tarsal
 - 18.4.13.1.3.1 Calcaneal
 - 18.4.13.1.3.2 Talus
 - 18.4.13.1.4 Ankle
 - 18.4.13.1.4.1 Distal tibial and fibular
 - 18.4.13.1.4.2 Bimalleolar and trimalleolar
 - 18.4.13.1.5 Leg (tibia-fibula)
 - 18.4.13.1.5.1 Tibial plateau
 - 18.4.13.1.5.2 Tibial shaft
 - 18.4.13.1.5.3 Fibular head
 - 18.4.13.1.6 Patellar
 - 18.4.13.1.7 Midshaft and distal femur
 - 18.4.13.1.8 Proximal femur (hip)
 - 18.4.13.1.8.1 Subtrochanteric
 - 18.4.13.1.8.2 Femoral neck
 - 18.4.13.1.8.3 Intertrochanteric
 - 18.4.13.2 Dislocations
 - 18.4.13.2.1 Phalangeal
 - 18.4.13.2.2 Lisfranc
 - 18.4.13.2.3 Ankle
 - 18.4.13.2.4 Knee
 - 18.4.13.2.5 Patellar
 - 18.4.13.2.6 Hip
- 18.4.14 Soft tissue extremity injuries
 - 18.4.14.1 Tendon injuries
 - 18.4.14.1.1 Partial lacerations
 - 18.4.14.1.2 Complete transections
 - 18.4.14.1.3 Tendon ruptures
 - 18.4.14.2 Periarticular injuries
 - 18.4.14.2.1 First-, second-, and third-degree sprains
 - 18.4.14.2.2 Injuries to bursa
 - 18.4.14.2.3 Ligamentous lacerations
 - 18.4.14.3 Injuries to joints
 - 18.4.14.3.1 Penetrating injuries
 - 18.4.14.3.2 Rupture of joint capsule
 - 18.4.14.4 Compartment syndromes / crush injuries
 - 18.4.14.5 Penetrating soft tissue injuries
 - 18.4.14.6 High-pressure injection injuries
 - 18.4.14.7 Amputations /replantation
- 18.4.15 Pelvic fractures
 - 18.4.15.1 Pubic rami
 - 18.4.15.2 Straddle
 - 18.4.15.3 Iliac crest
 - 18.4.15.4 Malgaigne
- 18.4.16 Injuries of the genitalia
 - 18.4.16.1 Female
 - 18.4.16.1.1 Labial contusion/hematoma
 - 18.4.16.1.2 Vaginal laceration
 - 18.4.16.2 Male
 - 18.4.16.2.1 Penis
 - 18.4.16.2.1.1 Fracture
 - 18.4.16.2.1.2 Avulsion/amputation
 - 18.4.16.2.2 Penetrating injury
 - 18.4.16.2.3 Urethral
 - 18.4.16.2.4 Scrotal
 - 18.4.16.2.5 Testicular
- 18.4.17 Cutaneous injuries
 - 18.4.17.1 Principles of wound management (SEE 23.9.8)
 - 18.4.17.2 Lacerations
 - 18.4.17.3 Avulsions
 - 18.4.17.4 Burns
 - 18.4.17.4.1 Thermal
 - 18.4.17.4.2 Electrical (SEE 5.3)
 - 18.4.17.4.3 Chemical
 - 18.4.17.5 Puncture wounds
 - 18.4.17.6 Bite wounds (SEE 5.9)
- 18.5 Trauma in Pregnancy
 - 18.5.1 Principles of care
 - 18.5.2 Clinical assessment and management
 - 18.5.2.1 Anatomic/physiologic alterations in the pregnant woman
 - 18.5.2.2 Fetal monitoring
 - 18.5.2.3 Emergency department cesarean section (SEE 12.7.8 and 23.4.2.3)
 - 18.5.3 Types of injuries
 - 18.5.3.1 Uterine rupture
 - 18.5.3.2 Placental abruption
 - 18.5.3.3 Preterm labor
 - 18.5.3.4 In utero injuries to the fetus

- 18.5.3.5 Penetrating injuries to the uterus
- 18.6 Special Considerations for Pediatric Trauma Victim
 - 18.6.1 Clinical assessment and management
 - 18.6.1.1 Anatomic/physiologic differences from adults
 - 18.6.1.2 Airway management
 - 18.6.1.3 Fluid resuscitation (SEE 13.17.1)
 - 18.6.1.4 Recognition of child abuse (SEE 13.8.1 and 18.1.11.2.1.3)
 - 18.6.2 Head trauma (SEE 13.7)
 - 18.6.3 Spinal injuries
 - 18.6.3.1 Spinal cord injury without radiologic abnormality (SCIWORA)
 - 18.6.4 Chest trauma
 - 18.6.5 Abdominal trauma
 - 18.6.6 Burns
 - 18.6.7 Fractures (SEE 13.6)
 - 18.6.7.1 Greenstick
 - 18.6.7.2 Torus
 - 18.6.7.3 Epiphyseal

19.0 UROGENITAL/GYNECOLOGIC DISORDERS

- 19.1 Genital Tract - Female
 - 19.1.1 Ovarian disorders
 - 19.1.1.1 Ovarian cyst
 - 19.1.1.2 Ovarian torsion
 - 19.1.1.3 Tumors
 - 19.1.2 Vagina and vulva
 - 19.1.2.1 Foreign bodies (SEE 13.13.5)
 - 19.1.2.2 Imperforate hymen
 - 19.1.3 Uterus
 - 19.1.3.1 Endometriosis
 - 19.1.3.2 Dysfunctional uterine bleeding
 - 19.1.3.3 Tumors
 - 19.1.3.4 Uterine prolapse
 - 19.1.4 Cervix
 - 19.1.4.1 Carcinoma
 - 19.1.4.2 Cysts
 - 19.1.4.3 Leukoplakia
 - 19.1.5 Infectious disorders
 - 19.1.5.1 Bartholinian abscess
 - 19.1.5.2 Cervicitis
 - 19.1.5.3 Pelvic inflammatory disease
 - 19.1.5.3.1 Endometritis
 - 19.1.5.3.2 Salpingitis
 - 19.1.5.3.3 Tubo-ovarian abscess
 - 19.1.5.3.4 Fitz-Hugh B Curtis syndrome
 - 19.1.5.4 Vulvovaginitis
 - 19.1.5.5 Urethritis

- 19.2 Genital Tract - Male
 - 19.2.1 Congenital
 - 19.2.1.1 Hydrocele
 - 19.2.1.2 Hypospadias
 - 19.2.1.3 Phimosis (SEE 13.13.2.2)
 - 19.2.1.4 Varicocele
 - 19.2.1.5 Undescended testis (SEE 13.13.3.2)
 - 19.2.1.6 Inguinal hernia (SEE 13.1.9.1)
 - 19.2.2 Structural
 - 19.2.2.1 Paraphimosis (SEE 13.13.2.2)
 - 19.2.2.2 Peyronie's disease
 - 19.2.2.3 Priapism
 - 19.2.2.4 Testicular torsion (SEE 13.13.3.1)
 - 19.2.2.5 Urethral strictures
 - 19.2.2.6 Urethral foreign bodies
 - 19.2.2.7 Prostatic hypertrophy
 - 19.2.3 Inflammation/infection
 - 19.2.3.1 Epididymitis/orchitis
 - 19.2.3.2 Balanitis (SEE 13.13.2.1)
 - 19.2.3.3 Gangrene of the scrotum (Fournier's gangrene)
 - 19.2.3.4 Prostatitis
 - 19.2.3.5 Urethritis
 - 19.2.4 Tumors

- 19.3 Sexual Assault (SEE 14.12.2)

- 19.4 Genital Lesions
 - 19.4.1 Chancroid
 - 19.4.2 Granuloma inguinale
 - 19.4.3 Condyloma acuminata

20.0 ADMINISTRATIVE ASPECTS OF EMERGENCY MEDICINE

- 20.1 Academic Emergency Medicine
 - 20.1.1 Faculty/staff
 - 20.1.1.1 Credentials
 - 20.1.1.2 Career development
 - 20.1.1.3 Recruitment
 - 20.1.2 Research
 - 20.1.2.1 Diagnostic testing logic
 - 20.1.2.2 Statistical concepts
 - 20.1.2.3 Epidemiologic fundamentals
 - 20.1.3 Institutional affiliations
 - 20.1.3.1 University
 - 20.1.3.2 Community
 - 20.1.4 Teaching/curriculum
 - 20.1.5 Testing/evaluation

- 20.2 Certification and Licensure Requirements
 - 20.2.1 Allied health licensure
 - 20.2.1.1 Emergency medical technician EMT-1/EMT-paramedic
 - 20.2.1.2 Nurses
 - 20.2.1.3 Physician extenders/midlevel providers
 - 20.2.2 Continuing medical education
 - 20.2.3 Physician licensure
 - 20.2.4 Specialty and subspecialty certification
- 20.3 Information Systems
 - 20.3.1 Practice
 - 20.3.2 Research
- 20.4 Departmental Administration
 - 20.4.1 Accreditation
 - 20.4.1.1 National organizations on accreditation of healthcare standards
 - 20.4.2 Billing/reimbursement
 - 20.4.2.1 Medicaid
 - 20.4.2.2 Medicare
 - 20.4.2.3 Insurance
 - 20.4.2.4 Managed care/capitation
 - 20.4.3 Budgeting
 - 20.4.4 Cost containment principles
 - 20.4.5 Equipment and supplies
 - 20.4.5.1 Adult
 - 20.4.5.2 Pediatric
 - 20.4.6 Facility design
 - 20.4.7 Forms
 - 20.4.8 Health care financing
 - 20.4.9 Marketing
 - 20.4.10 Medical records/documentation
 - 20.4.11 Personnel management
 - 20.4.12 Public relations
 - 20.4.13 Quality improvement
 - 20.4.14 Staffing requirements
 - 20.4.15 Policies and procedures
 - 20.4.16 Nursing practice
 - 20.4.17 Interdepartmental relations
 - 20.4.18 Patient flow
 - 20.4.19 Observation units/clinical decision units
 - 20.4.20 Infection control (SEE 9.7.2 and 13.15)
 - 20.4.21 Security, violence in the emergency department (SEE 14.11.4)
- 20.5 Ethics
 - 20.5.1 Ethical principles
 - 20.5.1.1 Beneficence/non-maleficence
 - 20.5.1.2 Decision-making capacity
 - 20.5.1.3 Privacy and confidentiality
 - 20.5.1.4 Autonomy
 - 20.5.1.5 Ethical decision-making
 - 20.5.1.6 Justice
 - 20.5.1.7 Allocation of health care resources
 - 20.5.2 Professional relations
 - 20.5.2.1 Physician-patient
 - 20.5.2.2 Physician-physician
 - 20.5.2.2.1 Peer review
 - 20.5.2.2.2 Impairment (SEE 20.13.4)
 - 20.5.2.2.3 Incompetence
 - 20.5.2.3 Physician-emergency health professional
 - 20.5.2.4 Physician-hospital
 - 20.5.2.5 Physician-societal
 - 20.5.3 Life-sustaining treatment
 - 20.5.3.1 Advance directives
 - 20.5.3.2 Medical decision surrogates
 - 20.5.4 Academic ethics
 - 20.5.4.1 Research responsibilities
 - 20.5.4.2 Publication ethics
- 20.6 Hospital Administration
 - 20.6.1 Departmental interaction
 - 20.6.2 Governance
 - 20.6.3 Structure
- 20.7 Medical-Legal Aspects
 - 20.7.1 Consent
 - 20.7.1.1 Expressed, implied.
 - 20.7.1.2 Informed
 - 20.7.1.3 Uninformed
 - 20.7.1.3.1 Incompetent patients
 - 20.7.1.3.2 Minors
 - 20.7.2 Laws
 - 20.7.2.1 Commitment (SEE 14.10)
 - 20.7.2.2 Drug-related
 - 20.7.2.2.1 Controlled substances
 - 20.7.2.2.2 Drug abuse
 - 20.7.2.2.3 Food and Drug Administration regulations
 - 20.7.2.2.4 Investigational drugs
 - 20.7.2.3 Good Samaritan laws
 - 20.7.2.4 Patient transfer regulations EMTALA
 - 20.7.2.5 Regulations regarding reportable conditions
 - 20.7.2.5.1 Abuse
 - 20.7.2.5.2 Assault
 - 20.7.2.5.3 Communicable disease
 - 20.7.2.5.4 Seizures/loss of consciousness
 - 20.7.2.5.5 Deaths
 - 20.7.2.5.5.1 Coroner's cases
 - 20.7.2.5.6 Transfusion restrictions
 - 20.7.2.5.7 Organ donation

- 20.7.2.6 Liability
 - 20.7.2.6.1 Duty to treat
 - 20.7.2.6.2 Duty to third party
 - 20.7.2.6.3 Intentional torts
 - 20.7.2.6.3.1 Battery
 - 20.7.2.6.3.2 False imprisonment.
 - 20.7.2.6.4 Insurance
 - 20.7.2.6.5 Malpractice
 - 20.7.2.6.6 Negligence
 - 20.7.2.6.7 Patient-related
 - 20.7.2.6.7.1 Privileged communications
 - 20.7.2.6.7.2 Research
 - 20.7.2.6.7.3 Termination of patient care
 - 20.7.2.6.8 Resuscitation decisions
 - 20.7.2.6.9 Risk management
 - 20.7.2.6.10 Testimony
- 20.7.3 Expert witnesses
- 20.8 Clinical Pathways
- 20.9 Medical Staff
 - 20.9.1 Committees
 - 20.9.2 Credentialing
 - 20.9.3 Disciplinary policy
 - 20.9.4 Structure
- 20.10 Medical Organizations
- 20.11 Practice Management
 - 20.11.1 Benefits
 - 20.11.2 Contracts
 - 20.11.2.1 Employee
 - 20.11.2.1.1 Group
 - 20.11.2.1.2 Hospital
 - 20.11.2.1.3 Staff
 - 20.11.2.2 Independent contractor
 - 20.11.3 Structure
- 20.12 Skills
 - 20.12.1 Accounting
 - 20.12.2 Management
 - 20.12.3 Negotiations
 - 20.12.4 Physician interpersonal skills
 - 20.12.4.1 Effective patient-physician communication
 - 20.12.4.1.1 Diversity issues
 - 20.12.4.2 Hostile encounters complaints
 - 20.12.4.3 Grief reactions
- 20.13 Wellness
 - 20.13.1 Wellness maintenance
 - 20.13.2 Stress management

- 20.13.2.1 Unique stressors
- 20.13.2.2 Reduction techniques
- 20.13.2.3 Debriefing (SEE 21.4.2.8)
- 20.13.3 Shift work
- 20.13.4 Physician impairment (SEE 20.5.2.2.2)
- 20.13.5 Family dynamics

21.0 EMERGENCY MEDICAL SERVICES/DISASTER MEDICINE

- 21.1 EMS System Organization
 - 21.1.1 System components
 - 21.1.1.1 Pre-hospital personnel
 - 21.1.1.2 Emergency department personnel
 - 21.1.1.3 Transport services
 - 21.1.1.4 Lead agency and local organizations
 - 21.1.2 Categorization and designation of levels of services
 - 21.1.3 Specialized care centers
- 21.2 EMS System Operations
 - 21.2.1 Communications system
 - 21.2.1.1 Radio configuration
 - 21.2.1.2 Dispatch
 - 21.2.1.3 Communications protocols
 - 21.2.2 Patient care protocols
 - 21.2.2.1 Scene triage and treatment
 - 21.2.2.2 Hospital triage and treatment
 - 21.2.3 Transport vehicles
 - 21.2.3.1 Ground
 - 21.2.3.2 Air
 - 21.2.3.3 Water access
 - 21.2.4 Medical control
 - 21.2.4.1 Medical director
 - 21.2.4.2 Offline and online supervision.
 - 21.2.5 Governmental controls
 - 21.2.5.1 Development and implementation of regulations
 - 21.2.5.2 Funding
 - 21.2.5.3 Certification/recertification
 - 21.2.6 EMS administration
 - 21.2.6.1 System monitoring & maintenance
 - 21.2.6.2 Serving as a training resource
 - 21.2.6.3 Resource allocation
 - 21.2.6.4 Stress/burnout of EMS personnel
 - 21.2.6.5 Scene violence
 - 21.2.7 System overload
 - 21.2.8 EMS continuous quality improvement

- 21.3 EMS Education
 - 21.3.1 CPR, first aid, and EMS awareness training
 - 21.3.1.1 First responders
 - 21.3.1.2 General public
 - 21.3.2 EMT training
 - 21.3.2.1 Basic
 - 21.3.2.2 Intermediate
 - 21.3.2.3 Paramedic
 - 21.3.3 EMS continuing education/skills maintenance
 - 21.3.4 Injury prevention and safety
 - 21.3.5 Assessment of environmental, biologic, and toxicologic hazards
 - 21.4 Disaster Medicine
 - 21.4.1 Definition of disaster
 - 21.4.1.1 Disaster assessment
 - 21.4.1.2 Epidemiology of disasters
 - 21.4.1.3 Philosophy of disaster management and the incident command system
 - 21.4.1.4 Types of disaster/nomenclature
 - 21.4.1.4.1 Explosions and fires
 - 21.4.1.4.2 Mass crowd gathering events
 - 21.4.1.4.3 Medical response to terrorist incidents (conflict related)
 - 21.4.1.4.4 Natural
 - 21.4.1.4.5 Transportation disasters
 - 21.4.1.4.6 Technologic / industrial / HAZMAT
 - 21.4.2 Phases of disaster response
 - 21.4.2.1 Notification
 - 21.4.2.2 Search and rescue
 - 21.4.2.3 Triage
 - 21.4.2.4 Medical care of disaster victims
 - 21.4.2.5 Disaster communications
 - 21.4.2.6 Record keeping
 - 21.4.2.7 Transportation and evacuation
 - 21.4.2.8 Debriefing/critical incident stress debriefing (CISD) (SEE 20.13.2.3)
 - 21.4.2.9 Recovery
 - 21.4.3 Disaster medical care (SEE 17.2.20)
 - 21.4.3.1 Rapid assessment of emergency health care needs
 - 21.4.3.2 Medical care at mass casualties
 - 21.4.3.3 Disaster specific medical problems (SEE 18.0)
 - 21.4.3.3.1 Mental health and behavioral consequences
 - 21.4.3.3.1.1 For disaster victims
 - 21.4.3.3.1.2 For professionals
 - 21.4.3.3.1.3 Critical incident stress debriefing (CISD)
 - 21.4.3.3.2 Shock and its treatment in field situations
 - 21.4.3.3.3 Trauma casualties
 - 21.4.3.3.4 Crush syndrome/injury
 - 21.4.3.3.5 Compartment syndrome
 - 21.4.3.3.6 Mass burn care
 - 21.4.3.3.7 Pulmonary casualties
 - 21.4.3.3.8 Pediatric casualties
 - 21.4.3.3.9 Neuropsychiatric casualties
 - 21.4.3.3.10 Toxic-chemical casualties
 - 21.4.3.3.11 Radiation exposure casualties
 - 21.4.3.3.12 Blast injuries
 - 21.4.3.4 Medical supply / equipment management
 - 21.4.3.4.1 Essential drugs for disasters
 - 21.4.3.4.2 Pharmaceutical distribution / control
 - 21.4.3.4.3 Role of immunizations
 - 21.4.3.5 Public health issues after disasters
 - 21.4.3.6 Non-medical emergency responders
 - 21.4.4 Disaster information services
 - 21.4.4.1 Local/national/international disaster Information
 - 21.4.4.2 Public relations
 - 21.4.4.3 Media coordination
 - 21.4.4.4 Legal aspects
 - 21.4.5 Disaster education
 - 21.4.5.1 Hospital disaster planning
 - 21.4.5.2 Disaster drills
 - 21.4.5.3 Post-disaster injury prevention and surveillance
 - 21.4.6 Disaster medical assistance teams (DMAT)
 - 21.4.7 International relief assistance
 - 21.4.7.1 Coordination
 - 21.4.7.2 Volunteers
- 21.5 Research
 - 21.5.1 Assessment of new methods and procedures
 - 21.5.2 Testing of new equipment and technologic advances
 - 21.5.3 Data collection/analysis

22.0 CLINICAL PHARMACOLOGY

- 22.1 Principles
 - 22.1.1 Pharmacokinetics
 - 22.1.2 Drug interactions
 - 22.1.3 Adverse reactions

- 22.1.4 Drugs in pregnancy/breast-feeding
- 22.1.5 Effect of age
- 22.1.6 Withdrawal syndromes
- 22.1.7 Neonatal/pediatric considerations
- 22.2 Drug Classes
 - 22.2.1 Analgesics/anesthetics (SEE 17.2.3)
 - 22.2.1.2 Ketamine
 - 22.2.1.3 Nitrous oxide
 - 22.2.2 Antibiotics
 - 22.2.3 Anticoagulants (SEE 17.2.5)
 - 22.2.4 Anticonvulsants (SEE 17.2.6)
 - 22.2.5 Antihistamines (SEE 17.2.9)
 - 22.2.6 Antipsychotics (SEE 17.2.10)
 - 22.2.6.1 Dystonia
 - 22.2.6.2 Tardive dyskinesia
 - 22.2.6.3 Neuroleptic malignant syndrome
 - 22.2.7 Bronchodilating agents (SEE 17.2.11)
 - 22.2.8 Cardiovascular drugs (SEE 17.2.14)
 - 22.2.8.1 Antiarrhythmic
 - 22.2.8.2 Antihypertensives
 - 22.2.8.3 Digoxin
 - 22.2.8.4 Calcium channel blockers
 - 22.2.9 Hormones/steroids (SEE 17.2.23)
 - 22.2.10 Hypoglycemics (SEE 17.2.25)
 - 22.2.10.1 Oral agents
 - 22.2.10.2 Insulin
 - 22.2.11 Intravenous fluids
 - 22.2.12 Local anesthetics (SEE 17.2.29)
 - 22.2.12.1 Esters
 - 22.2.12.2 Amides
 - 22.2.13 Locally acting drugs (SEE 17.2.30)
 - 22.2.13.1 Antacids
 - 22.2.13.2 Antiseptics
 - 22.2.13.3 Cathartics
 - 22.2.13.4 Laxatives
 - 22.2.14 Neuromuscular blocking agents
 - 22.2.14.1 Depolarizing
 - 22.2.14.2 Nondepolarizing
 - 22.2.15 Nonsteroidal anti-inflammatories
 - 22.2.16 Opiates/opioids (SEE 17.2.38)
 - 22.2.17 Sedatives/hypnotics
 - 22.2.17.1 Barbiturates
 - 22.2.17.2 Benzodiazepines
 - 22.2.17.3 Chloral hydrate
 - 22.2.18 Thrombolytics
 - 22.2.19 Tocolytics, oxytocics

23.0 PROCEDURES/SKILLS

- 23.1 Airway Techniques
 - 23.1.1 Cricothyrotomy
 - 23.1.2 Heimlich maneuver
 - 23.1.3 Intubation
 - 23.1.3.1 Nasotracheal
 - 23.1.3.2 Orototracheal
 - 23.1.3.3 Rapid sequence
 - 23.1.3.4 Fiberoptic
 - 23.1.4 Mechanical ventilation
 - 23.1.5 Percutaneous transtracheal ventilation
 - 23.1.6 Airway adjuncts
- 23.2 Anesthesia
 - 23.2.1 Local
 - 23.2.2 Regional intravenous anesthesia
 - 23.2.3 Regional nerve blocks
- 23.3 Diagnostic Procedures
 - 23.3.1 Arthrocentesis.
 - 23.3.2 Cystourethrogram
 - 23.3.3 Lumbar puncture
 - 23.3.4 Nasogastric intubation
 - 23.3.5 Pericardiocentesis
 - 23.3.6 Peritoneal lavage
 - 23.3.7 Bedside ultrasonography (SEE 18.2.6)
 - 23.3.7.1 Cardiac
 - 23.3.7.2 Abdominal
 - 23.3.7.3 Traumatic
 - 23.3.7.4 Pelvic
 - 23.3.8 Anoscopy
 - 23.3.9 Thoracentesis
 - 23.3.10 Tonometry
 - 23.3.11 Slit lamp examination
 - 23.3.12 Electrocardiogram interpretation
 - 23.3.13 Radiographic interpretation
- 23.4 Genital/Urinary
 - 23.4.1 Bladder catheterization
 - 23.4.1.1 Foley catheters
 - 23.4.1.2 Suprapubic catheterization
 - 23.4.2 Delivery of newborn
 - 23.4.2.1 Breech delivery
 - 23.4.2.2 Normal delivery
 - 23.4.2.3 Perimortem cesarean section (SEE 12.7.8 and 18.5.2.3)
- 23.5 Head and Neck
 - 23.5.1 Control of epistaxis
 - 23.5.1.1 Anterior packing
 - 23.5.1.2 Posterior packing/balloon placement

- 23.5.1.3 Cautery
- 23.5.2 Laryngoscopy
- 23.5.3 Nasopharyngeal endoscopy
- 23.6 Hemodynamic Techniques
 - 23.6.1 Arterial catheter insertion
 - 23.6.2 Central venous access
 - 23.6.2.1 Femoral
 - 23.6.2.2 Jugular
 - 23.6.2.3 Subclavian
 - 23.6.2.4 Umbilical
 - 23.6.2.5 Venous cutdown (SEE 23.6.4)
 - 23.6.2.6 Intraosseous infusion
 - 23.6.3 Peripheral venous cutdown (SEE 23.6.2.5)
 - 23.6.4 Pulmonary artery catheter insertion
- 23.7 Skeletal Procedures
 - 23.7.1 Fracture/dislocation immobilization techniques
 - 23.7.2 Fracture/dislocation reduction techniques
 - 23.7.3 Spine
 - 23.7.3.1 Cervical traction techniques
 - 23.7.3.2 Immobilization techniques
 - 23.7.3.2.1 Backboard techniques
- 23.8 Thoracic
 - 23.8.1 Cardiac pacing
 - 23.8.1.1 Cutaneous
 - 23.8.1.2 Transvenous
 - 23.8.2 Defibrillation/cardioversion
 - 23.8.3 Cardiorrhaphy
 - 23.8.4 Pericardiotomy
 - 23.8.5 Thoracostomy
 - 23.8.6 Thoracotomy
- 23.9 Other Techniques
 - 23.9.1 End-tidal CO 2 monitoring
 - 23.9.2 Gastric lavage
 - 23.9.3 Incision - drainage
 - 23.9.4 Intestinal tube insertion
 - 23.9.5 Pulse oximetry
 - 23.9.6 Sengstaken-Blakemore tube insertion
 - 23.9.7 Wound closure techniques (SEE 18.4.17.1)
 - 23.9.8 Trephination nails
 - 23.9.9 Peak expiratory flow rate measurement
 - 23.9.10 Excision of thrombosed hemorrhoids
 - 23.9.11 Foreign body removal
 - 23.9.12 Conscious sedation
- 23.10 Laboratory Skills
 - 23.10.1 Venipuncture
 - 23.10.2 Arterial blood gas sampling
 - 23.10.3 Microscopy
 - 23.10.4 Gram stain preparation/interpretation
- 23.11 Multiple Patient Management
- 23.12 Universal Precautions

Appendix Three

RESIDENT WORK HOURS AND SUPERVISION POLICIES

It is recognized that excessive numbers of hours worked by resident physicians can lead to errors in judgment and clinical decision-making. These can impact on patient safety through medical errors, as well as the safety of the physician trainees through increased motor vehicle accidents, stress, depression and illness related complications. The training institution, director of medical education (DME) and residency program director must maintain a high degree of sensitivity to the physical and mental well being of residents and make every attempt to avoid scheduling excessive work hours leading to sleep deprivation, fatigue or inability to conduct personal activities.

A. Work Hours

1. The following work hours policy will apply to all residents in all specialties.
 - a. The resident shall not be assigned to work physically on duty in excess of eighty hours (80) per week averaged over a four (4) week period, inclusive of in-house night call.
 - b. The resident shall not work in excess of twenty-four (24) consecutive hours inclusive of morning and noon educational programs. Allowance for, but not to exceed up to six (6) hours for inpatient and outpatient continuity, transfer of care, educational debriefing and formal didactic activities may occur. Residents may not assume responsibility for a new patient after twenty-four (24) hours.
 - c. If moonlighting is permitted, all moonlighting will be inclusive of the eighty (80) hour per week maximum work limit and must be reported. (See Moonlighting Policy.)
 - d. The resident shall have alternate week forty-eight (48) hour periods off or at least one (1) twenty-four (24) hour period off each week.
 - e. Upon conclusion of a twenty-four (24) hour duty shift, residents shall have a minimum of twelve (12) hours off before being required to be on duty again. Upon completing a lesser hour duty period, adequate time for rest and personal activity must be provided.
 - f. All off-duty time must be totally free from assignment to clinical or educational activity.
 - g. Those rotations requiring the resident to be assigned to Emergency Department duty shall not be assigned longer than twelve (12) hour shifts.
 - h. The resident and training institution must always remember the patient care responsibility is not precluded by this policy. In the case where a resident is engaged in patient responsibility which cannot be interrupted, additional coverage should be provided to relieve the resident involved as soon as possible.
 - i. The resident may not be assigned to call more often than every third night averaged over any consecutive four (4) week period.
2. The training institution shall provide an on-call room for residents, which is clean, quiet, safe and comfortable, so to permit rest during call. A telephone shall be present in the on-call room. Toilet and shower facilities should be present in or convenient to the room. Nourishment shall be available during the on-call hours of the night.

B. Moonlighting Policy

Any professional clinical activity (moonlighting) performed outside of the official residency program may only be conducted with the permission of the program administration (DME/Program Director). A written request by the resident must be approved or disapproved by the Program Director and DME and be filed in the institution's resident file. All approved hours are included in the total allowed work hours under AOA policy and are monitored by the institution's graduate medical education committee. This policy must be published in the institution's housestaff manual. Failure to report and receive approval by the program may be grounds for terminating a resident's contract.

Emergency Medicine residents may not moonlight in the department of Emergency Medicine at the base or affiliated training sites.