I. Academic Emergency Medicine Careers

Academic Core Faculty
By Samuel Luber

Overview:
The Residency Review Committee for EM (RRC-EM) defines a core faculty member as "...a member of the program faculty, who provides clinical service and teaching, devotes the majority of his or her professional efforts to the program, and has sufficient time protected from direct service responsibilities to meet the educational requirements of the program." To ensure protected time, the RRC-EM limits the amount of clinical hours for core faculty to a maximum of 28 hours per week.
From a practical standpoint, a core faculty member is an integral part of the residency program. Chairs and program directors expect a good deal of non-clinical time from their core faculty. This non-clinical time involves, but is not limited to, attendance at weekly didactic conference, journal clubs and faculty meetings. Additionally, core faculty are often expected to be engaged in mentoring residents outside the ED with scholarly activities, performance improvement projects and other initiatives.

Core faculty are expected to be productive with their own scholarly activity. The RRC-EM requires 80% of a program’s core faculty members to produce at least one piece of scholarly activity per year, averaged over a 5 year period. As the number of EM programs increase (and program complements increase) additional core faculty are needed. The RRC-EM requires 1 core faculty member for every 3 residents in a program.

Training Required:
Many faculty have no formal training in education, research, or administration, but this is becoming an increasing more difficult career path to take. More frequently newly hired academic faculty are needing specialized training, such a fellowship, to be competitive for faculty positions.
Program Director
By Mark Clark, Samuel Luber and James Barry

Overview:
The EM Residency Program Director (PD) is ultimately responsible for all aspects of resident training; ensuring program graduates obtain the knowledge, skills, and attitude necessary to practice EM independently and competently. The American College of Graduate Medical Education (ACGME) relies on the PD to endorse to each graduate’s achievement of these skills. Directing a residency program requires a deep commitment to graduate medical education in general and to the educational welfare of the program’s individual residents. This requires a thorough knowledge of one’s specific institutional policies as well as the ACGME’s institutional requirements and the Residency Review Committee’s (RRC) program requirements. To be effective, a PD needs a working knowledge of adult educational theory, curriculum development, supervision and evaluation. The PD also needs good communication skills since he/she coordinates closely with the faculty, departmental leadership and institutional leadership to implement program policies and plans. Since these responsibilities require a good amount of administrative effort, a PD does not work more than 20 hours/week clinically. The basic qualifications required by the ACGME for a program director include: at least 3 yrs experience as a clinician, be administrator and educator in EM, be Board Certified by ABEM, and hold a current license and appropriate teaching faculty staff appointment.

Administrative Responsibilities:
On the most basic level the role of the program director in emergency medicine is to assure that the training program is in compliance with the guidelines and standards set forth by the Accreditation Council for Graduate Medical Education (ACGME) in order to assure the successful education of residents and safeguard the continued accreditation of the program. The standard requirements of the ACGME are numerous. They pertain to all aspects of the program including overall structure, curriculum, faculty responsibilities and the evaluation of residents. The ACGME maintains and updates Common program requirements that apply to all programs regardless of specialty as well as specialty specific guidelines. The PD must assure compliance with the common and specialty specific guidelines as set forth by the ACGME. The Program Information Form (or PIF) is a document maintained by the PD that describes all aspects of the program in a format set out by the ACGME. The PIF is basically the
documentation of the essential components of the program that demonstrate how the program fulfills its requirements. The PD must make sure the PIF is accurate and up to date and ready for review by the site surveyor at the regularly scheduled site visit. Site surveys take place every few years. In addition the PD submits an “annual program update” each year to the ACGME. The update summarizes key program developments and monitors important aspects of the program such as faculty complement, ED volume, number of procedures, board pass rate etc.

The program director is accountable to make sure the program meets the ACGME requirements in the training of residents. A large part of what the program director actually does is centered on implementing creative strategies to meet and exceed the program requirements. If understood in the proper sense, the requirements are the minimum. The following are just some of the requirements specified by the ACGME that highlight the key responsibilities of the PD:

- Maintain an educational environment conducive to training residents in each of the ACGME core competency areas.
- Approve the selection and take part in the evaluation of faculty.
- Monitor resident supervision at all sites
- Prepare and submit all information required by the ACGME including but not limited to the PIF and annual program updates.
- Provide each resident with documented semiannual evaluations of performance with feedback.
- Monitor and enforce resident duty (work) hours, mitigate excessive service demands and monitor fatigue.
- Primarily oversee resident selection, promotion, supervision and disciplinary action.
- Be familiar and comply with the ACGME and Review Committee policies and procedures as outlined in the ACGME Manual.
- Respond to all communication from the ACGME and address any program citations by the review committee.

*Educational Responsibilities:*
In addition to the above responsibilities, the program director is primarily responsible for building and implementing the educational mission of the program based on the core curriculum of emergency medicine as outlined in the Model of the Practice of Emergency Medicine. The curriculum of any program is divided into the didactic and clinical arenas and must include training in
procedural skills. Essential to this mission is an appreciation for and ability to teach and evaluate the ACGME core competencies. The core competencies are which specific skills woven through the curriculum. The core competencies include patient care, medical knowledge, Interpersonal skills, professionalism, practice based learning improvement and systems based practice. The educational mission is at the heart of what it means to be a program director. The primary purpose of the job is to produce emergency physicians that have mastered the core curriculum and the corresponding competencies to practice EM. This is an exciting and demanding undertaking and requires a passion for the curriculum, creativity, evaluative skills and administrative skills and patience. The ACGME describes some of the specific educational responsibilities of the PD with the following:

- Ensure that the program offers residents an average of at least five hours per week of planned educational experiences developed by the residency program.
- Ensure that educational experiences include presentations based on the defined curriculum, morbidity and mortality conferences, journal review, and administrative seminars.
- Ensure that residents maintain a record of all resuscitations and procedures.
- Ensure that the degree of professional responsibility accorded the resident is increased through the course of training and should include opportunities to develop clinical and administrative judgment in areas of patient care, teaching, administration and leadership.

Training Required:
The program director needs to demonstrate leadership qualities and the ability to mentor emergency medicine residents.

To be considered eligible for the candidate for PD must demonstrate the following:
- Board certification in EM
- Licensure to practice medicine
- Core teaching faculty status
- At least 3 years as a clinician, educator and administrator in EM
- Active ongoing involvement in CME
- Active involvement in state, regional or national societies
- Scholarly activity that is generally defined as knowledge translation (i.e. teaching) publications or presentations.
The ACGME specifies that the PD must not work more than 20 clinical hours per week to be sure there is adequate protected time to administer the program.

While clinical excellence, leadership, scholarship and teaching ability are fundamentals the prospective program director needs to have, there are other essential characteristics also needed for a successful PD. These include the ability to model professionalism, and a genuine interest in residents' education, professional development and overall well-being. Much of what falls into the day-to-day tasks of the PD is centered on relationships. A successful PD will be able to build lasting and productive relationships with colleagues from other services, residents, fellow faculty, the program coordinator and support staff, the associate and assistant PD's and of course the chair of the department. The successful PD will be skilled at cementing a team with a common purpose and mission of providing the best possible patient care, modeling professionalism, and creating a learning environment where residents are safe, productive and engaged. While demanding in many aspects, there can be fewer jobs more rewarding than one to safeguard the training and professional growth of the emergency medicine's next generation of clinicians and leaders.
Assistant and Associate Program Director
By James Barry and Samuel Luber

Overview:
The assistant and associate program director (APD) assists the program director (PD) in performing the varied tasks of resident education and program administration. The specific role and duties of an APD is determined by the PD and thus varies widely between different programs. Although each APD’s role in the program is individualized by the PD, most APDs are probably delegated a slice of program responsibility in one or more of these three general methods. Some APDs are given responsibility to oversee the education of a specific year-group (EM1, EM2, etc), becoming, in effect, the educational director for that year-group. Other APDs are assigned a specific section of education within the program (curriculum development, recruitment/interviewing/match, evaluation and counseling, etc). While other APDs are assigned arbitrary tasks based on the needs of the program at the time. See the section on Program Directors for additional details of the job description of PDs.

Training Required:
There is no ACGME requirement limiting the clinical workload for APD’s, thus adjustment of clinical workload to accommodate administrative responsibilities is individualized by each program and perhaps for each APD. Qualifications of the APD will also be defined by the PD.
Clerkship Director in Emergency Medicine
By Todd Guth

Overview:
Clerkship directors in emergency medicine (EM) are typically in charge of medical student rotations through EM. Historically, clerkships have been primarily offered to fourth-year students interested in a career in EM or students interested in having an exposure to the specialty prior to their residency training. Increasingly, many medical schools are requiring rotations in EM during the third or fourth year. Clerkship directors are typically responsible for administering the educational experience for students during their clerkship. Clerkship directors are committed to enhancing medical student education and are often appointed position within local schools of medicine and help integrate the EM clerkship into other aspects of the broader medical school curriculum. Certainly, clerkship directors help to mentor and advise medical students about their career paths and help aspiring emergency medicine residents to get into the residency of their choice. Clerkship directors wear the simultaneous hats of administrator, educator, advisor, and mentor.

Training Required:
At present, there are no set criteria or training necessary for clerkship directors in emergency medicine. Local institutions may have additional pre-requisites or experience required for their clerkship directors but many do not beyond a strong interest in medical student education. Often, assistant or associate directors of clerkships assume the role of clerkship director after a period of mentorship under the current clerkship director. Clerkship director positions are often assumed by enthusiastic junior faculty with a passion for undergraduate medical education.

Resources Available:
The Clerkship Directors in Emergency Medicine, an academy of the Society of Academic Emergency Medicine, has a number of resources for clerkship directors and medical students at these links:

http://www.cdemcurriculum.org/
http://www.saem.org/affiliates/clerkship-directors-emergency-medicine
Departmental Chairman
By Gregory Volturo

Overview:
The Chairman of an academic department of emergency medicine must have outstanding abilities and master a number of skills. It is a career path that requires several years of preparation and close mentoring in order to become a viable Chair candidate. The position requires a leader with confidence, vision and ambition. First and foremost an Academic Chair must be an experienced and outstanding clinician – educator with an in-depth understanding of Emergency Department clinical operations and the educational and research missions of the department. Generally, Chairs must demonstrate a sustained record of academic achievement and leadership in emergency medicine education and research. They must have proven their ability to conduct high-quality research and they must have a thorough understanding of extramural funding mechanisms.

Training Required:
National and preferably international recognition for their work in Emergency Medicine and management experience in a complex academic medical center are key attributes of successful Chair candidates. Academic Chairs must have outstanding leadership skills, with the ability to forge effective and productive relationships with senior levels of management in both the medical school and the hospital. They must be able to build and maintain collaborative relationships with other departments and major stakeholders in both the medical school and the hospital. They need to be capable of delicately balancing the clinical, educational and research missions of the department in a supportive fashion. And, Chairs need to have the self-confidence to effectively delegate tasks, while maintaining focus on the departmental strategy and goals and how these goals integrate with the goals of the hospital and medical school. Academic Chairs need to be skilled in conflict resolution and in the management of human resources. They must demonstrate cultural sensitivity, encourage diversity and gender equity and have a commitment to fairness and transparency in all department management. While an Academic Chair may delegate clinical operations, they are still responsible for the overall quality of care provided, for ensuring regulatory compliance, and appropriate resource utilization. An Academic Chair must be able to motivate and mentor faculty and set an example in terms of work ethic, of ethical behavior and compassionate patient care. Lastly, an academic chair must be able to effectively manage departmental finances and budgets. A background in finance and/or management is very helpful.
Resources Available:
The Association of Academic Chairs in Emergency Medicine is a academy of the Society of Academic Emergency Medicine and has provides support to academic departments of emergency medicine. A link to the AACEM is provided to give you some additional insights into a career as a Departmental Chairman.

http://www.saem.org/association-academic-chairs-emergency-medicine
Researcher
By Chad Darling

Overview:

A career in Emergency Medicine (EM) Research can be a rewarding complement to clinical practice. The breadth of EM allows for almost any research interest to be pursued and collaboration with researchers from other specialties can further enhance your career. The balance between research and clinical responsibilities will depend on a number of factors including your departmental research priorities, the financial flexibility of your department, and the amount of research funding you are able to acquire over time. Currently EM physicians conduct research in diverse areas such as health policy, quality improvement, clinical trials, and basic science research.

Training Required:

The training required to become an independent and successful EM researcher varies depending on the individuals past experience. For many a formal research fellowship with an established research mentor will be the most efficacious first step. The importance of choosing an experienced mentor that can guide you through early career and research/grant decisions cannot be overstated. These mentors need not be EM physicians but rather should be chosen based on their success at mentoring other early career researchers. Both SAEM, ACEP (via the EMF), the NIH (K-awards), and private foundations, offer grants targeted at career development for junior investigators and seeking out this funding while still a resident, or shortly after graduation, will help jump-start your career. Fellowship training in areas such as Toxicology, EMS, Disaster Medicine, etc., also represent excellent first steps in developing a research career as many fellowships offer opportunities for further education through Masters level programs such as those in Public Health and/or Clinical Investigation.

Resources Available:

ACEP:

Emergency Medicine Foundation: http://www.emfoundation.org/
Research Training (EMBRS course): http://www.acep.org/embrs/

**SAEM:**

Grants: [http://www.saem.org/grants](http://www.saem.org/grants)

Fellowship listings: [http://www.saem.org/fellowship-directory](http://www.saem.org/fellowship-directory)

Training: Attend annual meeting

**NIH:**

Career Development:
[http://grants.nih.gov/training/careerdevelopmentawards.htm](http://grants.nih.gov/training/careerdevelopmentawards.htm)

**Foundations:**

Medical Toxicology
By James Barry

Overview:
Medical toxicology is a subspecialty of emergency medicine (EM) focusing on the diagnosis, management and prevention of poisoning effects due to medications, occupational and environmental toxins and xenobiotics, radiological and biological agents. The subspecialty provides a wide array of opportunities for EM physicians to care for patients in different settings: in the ED, commonly as a member of a training program, at regional poison centers, in the pharmaceutical and industrial industries, in specialty areas such as medication overdoses, substance abuse management, adverse drug events, occupational exposures, or envenomations and in many government agencies such as the Centers for Disease Control and Prevention (CDC), the Environmental Protection Agency (EPA), the US Food and Drug Administration (FDA), and the Department of Homeland Security.

Training Required:
Medical toxicology is a board certified sub-specialty in emergency medicine. The fellowship is primarily a clinical fellowship that is two-years in length and requires passing of clinical duties and board-certification exam to meet board eligibility requirements.

Resources Available:
For a more detailed description of the opportunities available in Medical Toxicology please consider reading this article.

Pediatric Emergency Medicine
By Kathleen Walsh

Overview: Pediatric Emergency Medicine (PEM) trained physicians provide care for critically ill and injured children in an Emergency Department setting. In addition to knowledge that is obtained during their pediatric or emergency medicine residency training, PEM physicians have an increased fund of knowledge in areas such as neonatology, critical care, and forensic pediatrics.

Training Required: After successful completion of a residency in either Pediatrics or Emergency Medicine, applicants will complete an additional two years of fellowship (EM residency graduates) or three years (Pediatric residency graduates). Irrespective of the type of residency, selection of fellows is through the Pediatric Specialties Fall Match administered by the National Resident Matching Program (NRMP). Fellowship training will allow for board certification through the American Board of Medical Specialties (ABMS).

Resources: Information on applying for fellowships includes the following:

- National Resident Matching Program (NRMP) www.nrmp.org
- American Board of Medical Specialties (ABMS) www.abms.org
- Fellowship and Residency Electronic Interactive Database (FREIDA) www.ama-assn.org/go/freida
- Society of Academic Emergency Medicine (SAEM) www.saem.org
- Emergency Medicine Resident’s Association (EMRA) www.emra.org
- Pediatric Emergency Medicine Database www.pemdatabase.org
- Clinical Pediatric Emergency Medicine www.clinpedemergencymed.com
- Academic Pediatric Association (APA) www.ambpeds.org
Geriatric Medicine
By Kathleen Walsh

Overview:

Geriatric medicine specialists (also called geriatricians) are generally family medicine or internist medicine physician who specialize in the diagnosis and treatment of conditions and diseases of older adults. Geriatricians are expert in dealing with multiple medical problems and chronic illness. The geriatric specialist focuses on optimizing preventative care, quality of life and functional ability. Geriatricians typically work alongside other health professionals who also focus on treating older patients. The care team may include geriatric nurses, pharmacists, physical therapists, occupational therapists and mental health professionals. Geriatric medicine specialists can be board certified by the American Board of Family Practice or the Board of Internal Medicine, which are recognized by the American Board of Medical Specialties (ABMS).

Training Required:
The path to certification in geriatrics can be taken through initial certification in Family Medicine or Internal Medicine. This is followed by a one-year fellowship in a program approved by the Accreditation Council of Graduate Medical Education (ACGME), which is responsible for post-MD training programs in the United States. When formal Geriatric fellowship training first began in the 1980's, the initial requirement was two years of training. In 1998 the leadership of the American Geriatrics Society recognized that few physicians were choosing geriatrics as a career path, and the requirement for fellowship was shortened to one year in the hopes of expanding the applicant pool. Unfortunately this strategy has not worked, and Geriatrics is still struggling for qualified numbers of applicants. In addition, many of my colleagues feel that shortening the fellowship requirement has devalued the training. Some fellowship programs still maintain the two-year requirement even though the ACGME requires only one.

Available Resources:
Information on applying for fellowships includes the following:
- National Resident Matching Program (NRMP)  [www.nrmp.org](http://www.nrmp.org)
- American Board of Medical Specialties (ABMS)  [www.abms.org](http://www.abms.org)
- Fellowship and Residency Electronic Interactive Database (FREIDA)  [www.ama-assn.org/go/freida](http://www.ama-assn.org/go/freida)
- Society of Academic Emergency Medicine (SAEM)  [www.saem.org](http://www.saem.org)
• Emergency Medicine Resident’s Association (EMRA) www.emra.org
• The American Geriatrics Society (AGS) www.americangeriatrics.org
• Gerontological Society of American (GSA) www.geron.org
Internal Medicine
By Kathleen Walsh

Overview:

General internists handle the broad and comprehensive spectrum of illnesses that affect adults, and are recognized as experts in diagnosis, in treatment of chronic illness, and in health promotion and disease prevention—they are not limited to one type of medical problem or organ system. General internists often care for patients over the duration of their adult lives, providing the physician an opportunity to establish long and rewarding personal relationships with their patients.

Most general internists provide care for their patients in an ambulatory (office or outpatient) setting, and in an inpatient setting when their patients become hospitalized. There has been a recent trend where general internists choose to care for patients either exclusively in the inpatient setting (hospitalists) or exclusively in an outpatient setting.

Internists can either be in private practice or employed by a group, organization, or hospital. They may practice alone (solo practice), as a member of a single specialty or multi-specialty group, as a hospitalist, or as an academician in a medical school. Some will work in research for an academic medical center, government, or industry. Some will hold administrative positions in industry or government, or in public health settings or academic institutions.

Subspecialty fellowship training, usually adds one to three years after medical residency. Applications for fellowship are generally submitted during the second year of the internal medicine residency. Subspecialties of internal medicine include:
Adolescent medicine, Allergy and Immunology, Cardiology, Critical Care, Endocrinology, Gastroenterology, Geriatrics, Hematology, Infectious Disease, Nephrology, Oncology, Pulmonary Disease, Rheumatology, Sleep Medicine.

Training Required:
Following successful completion of a four-year, accredited medical school curriculum, those interested in becoming an internist will enter a residency training program. Residency in internal medicine lasts three years, and residents work in a variety of settings, including university hospitals, community teaching
hospitals, hospital outpatient clinics, and community physicians’ offices. Residents in internal medicine assume progressive responsibility as they acquire various skills in treating hospitalized patients (handling acute illness, intensive care, and cardiac care) and gain competency in ambulatory care.

Available Resources:

- National Resident Matching Program (NRMP)  www.nrmp.org
- American Board of Medical Specialties (ABMS)  www.abms.org
- Fellowship and Residency Electronic Interactive Database (FREIDA)  www.ama-assn.org/go/freida
- Society of Critical Care Medicine (SCCM)  www.mysccm.org
- American Board of Internal Medicine (ABIM)  www.abim.org
**Overview:**
Critical care medicine is a logical extension for physicians trained in Emergency Medicine. We have a broad background in life and limb-saving skills and extensive experience managing acutely ill medical and surgical patients. Critical Care Medicine is a fairly wide-open subspecialty with a severe physician shortage for the immediate future, and possibly much longer making it an attractive area for EM to expand into. The Leapfrog criteria, and a recent push for more uniform, better critical care has been pivotal in causing a dramatic change in most academic and large institution’s approach towards their delivery of health care. Though Emergency Medicine Intensivists faced a career problem if they wished to practice critical care in the past, this is no longer as big of a concern and may rapidly become a non-issue given the changes that are occurring in the US and with the new options for EM physicians to become board certified in CCM.

Originally conceived as a multidisciplinary subspecialty, over the past decade it has mostly evolved into an extension of the primary specialties with independent testing for Anesthesiology, Pediatrics, Surgery, and Internal Medicine. Anesthesiology requires a year-long fellowship for their trainees to qualify to sit for their boards, with a minimum of 5 years total training involved. Pediatrics requires 3 years of fellowship training after completing a 3-year residency program. Surgery requires 48 weeks of training after completing a surgical or a surgical subspecialty residency with a minimum of approximately 6 years of total training. Internal Medicine physicians must complete a two-year fellowship in critical care unless they also do a fellowship in another IM subspecialty. In this case the applicant may do a single year of CC fellowship. The total training period is approximately 5-6 years. Recently, the American Board of Internal Medicine has agreed to allow EM-trained physicians that do an IM-based CC fellowship to sit for the IM-based CC boards. It is unclear what impact a 3 or 4-year training program will have on ABIM’s usual requirement of 2 years of fellowship training. Similarly, it is unclear that completing a combined IM-EM residency will allow the applicant to do a single fellowship year to be allowed to sit for the boards. However, a formal, six-year path exists in which trainees from approved 6 year programs may combine training in IM-EM-CCM and sit for all three boards.

_Training Required:_
Anesthesiology and Surgical-based programs are usually clinically focused.
Pediatric programs may routinely include a year of research to fulfill the three year requirement. Internal Medicine programs may allow two years of clinical training or one year of clinical training and a year of research to fulfill the two-year requirement. The clinical rotations usually consist of rotations through the various intensive care units: Medical, Respiratory, Cardiovascular- both surgical and Coronary Care. Some surgical training is provided, either as primary rotations through Surgical, Burn, and Neuro/neurosurgical units, or in the form of consultative services to these specialty units. Different programs may have all or only some of these rotations. Despite institutional variation, all candidates are expected to get a broad-based training experience to allow the fellow to practice both as an admitting intensivist, and in a consultative role in the various disciplines. While Ob-Gyn and surgical subspecialty patients fall into the purview of IM based critical care, pediatrics does not. Emergency Medicine CC fellows can occasionally arrange PICU rotations.

During the fellowship years, the fellow will usually be expected to attend and give didactic lectures. Core areas of critical care will be covered with a heavy emphasis on respiratory failure, ventilator management, infectious disease, cardiovascular and renal support modalities, etc. Most of the commonly performed CC procedures will be familiar to the EM graduate: airway management, tube-thoracostomy, central venous line placement, arterial line placement, thora/paracentesis. Many programs require scholarly activity. This may take the form of original research working under the tutelage of the CC faculty or elsewhere in the institution or be comprised of an ABIM approved activity.

Resources Available:
There are many programs available to EM residents that wish to pursue CC training. The Critical Care group within ACEP, as well as the EM group within SCCM have a tremendous amount of information about the fellowship programs. However, with the evolving situation with boards in CC available through IM-based programs, EM residents may wish to pursue IM based fellowship programs. It is not likely that ABIM will easily allow non-internal medicine based fellowships to qualify for the ABIM sponsored boards. While certification through the European Board in CC is possible, it may be desirable to get American boards through ABIM-ABEM sponsorship. Whether the boards in surgery and anesthesiology will follow ABIM’s decision is not known at this time.

- National Resident Matching Program (NRMP)  www.nrmp.org
- American Board of Medical Specialties (ABMS)  www.abms.org
• Fellowship and Residency Electronic Interactive Database (FREIDA) 
  www.ama-assn.org/go/freida
• Society of Critical Care Medicine (SCCM) www.mysccm.org
• American Board of Internal Medicine (ABIM) www.abim.org
• American Board of Emergency Medicine (ABEM) www.abem.org
Ultrasound
By Mary Ann Edens

Overview:
Emergency Ultrasound Fellowship is a 1-year non-ACGME accredited fellowship designed to increase the educational experience of the emergency physician in regards to ultrasound. It is designed for the fellow to reinforce and learn new skills in all aspects of emergency ultrasound with an emphasis on technical skills in performing the various ultrasound procedures, but many fellowship also focus on the technical aspects of ultrasound physics and administering the financial aspects of an EM ultrasound program. Generally after completion of the fellowship, the physician is qualified to sit for RDMS and/or RCMS certification. After completion of the fellowship, most fellows go on to become involved in resident education or ultrasound directorship for private groups responsible for billing and quality assurance.

Resources Available:
To obtain more information about Emergency Ultrasound and about individual fellowships, visit the website www.eusfellowships.com
Forensic Medicine
By Mary Ann Edens

Overview:
The Clinical Forensic Medicine Fellowship is a 1 year non-ACGME fellowship. It is designed to provide emergency physicians with additional training in providing forensic evaluations for living victims of crimes. After completion of the fellowship, the physician is qualified to work closely with law enforcement officials in evidence collection. The most common area of work is with sexual assault.

Resources Available:
ACEP has a section of Forensic Medicine with details about this career found at this link:

http://www.acep.org/Content.aspx?id=25104
Cardiovascular Emergencies
By Bruce Lo

Overview:
Physicians have additional skills and training in evaluating patients with acute cardiovascular emergencies. This may include performing and interpreting bedside echocardiography, understanding and interpreting stress tests and other advanced cardiac imaging techniques, operate emergency department observation units in patients with chest pain or cardiac arrhythmias, and managing cardiac arrest victims. Often times, these physicians will help create new protocols, perform research in cardiovascular care, and education of providers.

Training Required:
Fellowship training is available, but no board certification is available at this time.

Resources Available:
The Society of Academic Emergency Medicine and the Emergency Medicine Residents’ Association have catalog listing of various fellowships in cardiovascular emergencies.
Neurologic and Neurovascular Emergencies
By Bruce Lo

Overview:
Physicians have additional skills and training in evaluating patients with acute neurological emergencies. This may include leading an acute stroke team. Often times, these physicians will help create new protocols, perform research in neurological emergencies, and education of providers.

Training Required:
Fellowship training is available, but no board certification is available at this time. Neurocritical care certification is available through the United Council for Neurological Subspecialties. However, this requires the applicant to do a fellowship certified by the United Council for Neurological Subspecialties.

Resources Available:
The Society of Academic Emergency Medicine and the Emergency Medicine Residents’ Association have catalog listing of various fellowships in Neurovascular emergencies. The Society of Academic Emergency Medicine also has a neurological emergency interest group. Additional information is also available through the United Council for Neurological Subspecialties.
Hospice and Palliative Medicine

By Mary Ann Edens and Kathleen Walsh

Overview:
Hospice and palliative care focus on helping a person be comfortable by addressing issues causing physical or emotional pain or suffering.

Palliative medicine relieves the pain and other symptoms patients suffer due to serious illness, including cancer, cardiac disease, respiratory disease, kidney failure, Alzheimer’s, AIDS, ALS, and MS. The goals of palliative care are to:

- Reduce suffering,
- Improve the quality of a seriously ill person’s life, and
- Support that person and their family during and after treatment.

Hospice care is for patients with a terminal diagnosis who are no longer seeking curative treatment. The focus of their care is on relieving symptoms and supporting them as they approach the last stages of life.

Training Required:
An interest in palliative medicine is all that is required for a career in Hospice and Palliative Medicine, but the fellowship guarantees exposure to the key aspects of this field and comes with the board certification credential.

The Hospice and Palliative Medicine Fellowship is a 1-2 year ACGME approved fellowship open to both Emergency Medicine and Internal Medicine trained physicians. The fellowship is designed to provide additional training in providing treatment to relieve suffering and improving quality of life and end of life care for patients with life-threatening or terminal diseases. After fellowship, the physician is eligible to sit for the ABEM subspecialty certification examination. After completion, physicians often become involved in resident/student education or in private practice/hospice care.

The American Academy of Hospice and Palliative Medicine (AAHPM), in cooperation with various medical boards, administers the certification exam. Before 2012, doctors who wish to be certified could do so without the requirement of the one-year fellowship training in hospice and palliative medicine. But they needed to complete at least 800 hours hospice or palliative care, among other requirements. Starting in 2012, the one-year fellowship is
required of all physicians wanting to receive certification as palliative care doctors.

Resources Available:
To obtain more information, visit:
- American Board of Medical Specialties (ABMS)  www.abms.org
- American Academy of Hospice and Palliative Care Medicine (AAHPM)  www.aahpm.org
- Center to Advance Palliative Care (CAPC)  www.capc.org
- National Hospice and Palliative Care Organization (NHPCO)  www.nhpco.org
Simulation
By Kathleen Walsh

Overview:
Medical simulation is a branch of simulation technology related to education and training in medical fields of various industries. It can involve simulated human patients, educational documents with detailed simulated animations, casualty assessment in homeland security and military situations, and emergency response. Its main purpose is to train medical professionals to reduce accidents during surgery, prescription, and general practice. However it is now used to train students in anatomy and physiology during their clinical training as allied health professionals. The American Board of Emergency Medicine employs the use of medical simulation technology in order to accurately judge students by using "patient scenarios" during oral board examinations.

One of the single largest proponents behind simulators has always been the United States government. A significant amount of money (trillions) and resources have been employed in the name of advancing simulators for space exploration, computer advancements, medical and military training, and other projects funded for research by the government. The Department of Defense (most notably, the Army) is one of the largest fund producers for simulation research, training, and support.

Training Required:
Several Emergency Medicine programs in the United States offer one or two year Medical Simulation Fellowship. You will need to contact the programs directly for additional information. Simulation fellows spend significant time creating, performing, reviewing and supervising medical simulation and virtual care exercises and scenarios and participate in resident simulation training as well as medical student simulation education. In addition, there are usually opportunity and expectation to participate in local disaster preparedness training using simulation, virtual care and telemedicine resources. Collaboration with partners including the military, law enforcement, EMS, and other groups involved in disaster planning will be a significant component of the program. The objective of medical simulation programs is to prepare physicians for leadership positions in medical education and medical simulation directorship positions. Medical simulation is not yet considered an ACGME accredited fellowship.

Available Resources:
- Society for Simulation in Healthcare (SSIH) https://ssih.org
• Society for Academic Emergency Medicine (SAEM) Simulation Interest Group www.emedu.org/sim/
• Sim Health Consulting Services www.simhealthconsultants.com
• Emergency Medicine Resident’s Association (EMRA) www.emra.org
Family Medicine  
By Kathleen Walsh

Overview:

Family physicians deliver a broad range of acute, chronic and preventive medical care services. In addition to diagnosing and treating illness, they also provide preventive care, including routine checkups, health-risk assessments, immunization and screening tests, and personalized counseling on maintaining a healthy lifestyle. Family physician often care for patients from infancy through adulthood, providing the physician and patient an opportunity to establish long and rewarding personal relationships. Family physicians also manage chronic illness, often coordinating care provided by other subspecialists. Many American family physicians deliver babies and provide prenatal care.

Family medicine and family physicians play a very important role in the healthcare system of a country. In U.S., for example, nearly one in four of all office visits are made to family physicians. That is 208 million office visits each year — nearly 83 million more than the next largest medical specialty. Today, family physicians provide more care for America’s underserved and rural populations than any other medical specialty.

Training Required:

Following successful completion of a four-year, accredited medical school curriculum, those interested in becoming a Family Medicine physician will enter a residency training program. Residency in family medicine lasts three years. Specific requirements for family medicine residency training vary by program, although several months are spent in required rotations in each of the following areas: obstetrics, pediatrics, general surgery and inpatient hospital care in critical care or intensive care units.

Family Medicine Dual Degrees

Currently, there are three types of dual degree residency programs for family medicine (FM), which require extended training – typically five years total:

- FM-Emergency Medicine
- FM-Internal Medicine
- FM-Psychiatry

Dual degree programs are designed to provide residents who complete them with certifications from both boards; they also must recertify with each board.
Beyond Residency

Fellowship opportunities are available to residents who seek advanced training in areas of family medicine. Generally, fellowships last an additional 12 months after residency training and are offered through existing residency programs. Some fellowships are strictly for educational purposes, while others lead to Certificates of Added Qualifications (CAQs), which are offered in conjunction with other medical specialty boards.

The ABFM currently offers CAQs in the follow areas:

- Adolescent medicine
- Geriatric Medicine
- Hospice and palliative medicine
- Sleep medicine
- Sports medicine

Available Resources:

- American Board of Medical Specialties (ABMS)  [www.abms.org](http://www.abms.org)
- American Board of Family Medicine (ABFM)  [www.theabfm.org](http://www.theabfm.org)
- American Academy of Family Physicians (AAFP)  [www.aafp.org](http://www.aafp.org)
- Society of Teachers of Family Medicine (STFM)  [www.stfm.org](http://www.stfm.org)
- Family Medicine Interest Group (FMIG)  [http://fmignet.aafp.org](http://fmignet.aafp.org)
Mid Level Providers
By Kathleen Walsh

Overview:
A mid-level provider, sometimes referred to simply as a "mid-level", is a clinical medical professional who provides patient care under the supervision of a physician. Mid-levels include nurse practitioner (NP), physician assistant (PA), certified registered nurse anesthetist (CRNA) and anesthesiologist assistant (AA). Mid-level providers can examine patients, diagnose and provide some treatments, all of which must be signed off by a supervising licensed physician. Mid-levels are referred to as such, because they are somewhat "in between" physicians and less qualified nurses, techs, and allied professionals in the level of healthcare they are licensed to administer. Mid-levels have a minimum of a bachelor's degree and most have also completed graduate or master's level education.

Training Required:
1) Nurse Practitioners (NP): Nurse Practitioners must first complete the education and clinical experiences necessary to be a registered nurse, then go on to complete a graduate-level nurse practitioner program (either a Master’s or Doctorate degree). Nurse practitioners can seek training and certification in Family Health (FNP), Pediatrics, including Pediatric Acute/Chronic Care, Pediatric Critical Care, Pediatric Oncology and general Pediatrics (PNP), Neonatology (NNP), Gerontology (GNP), Women’s Health (WHNP), Psychiatry & Mental Health (PMHNP), Acute Care (ACNP), Adult Health (ANP), Oncology (FNP, ACNP, ANP, PNP or ANP) Emergency (as FNP or ACNP), or Occupational Health (as ANP or FNP).

2) Physician’s Assistant: Physician assistant educational programs usually take at least 2 years to complete for full-time students. Most programs are at schools of allied health, academic health centers, medical schools, or 4-year colleges; a few are at community colleges, are part of the military, or are at hospitals. Many accredited PA programs have clinical teaching affiliations with medical schools. PA education includes classroom and laboratory instruction in subjects like biochemistry, pathology, human anatomy, physiology, clinical pharmacology, clinical medicine, physical diagnosis, and medical ethics. PA programs also include supervised clinical training in several areas, including family medicine, internal medicine, surgery, prenatal care and gynecology, geriatrics, emergency medicine, and pediatrics.
3) **Certified Registered Nurse Anesthetist (CRNA)** Nurse anesthetists must first complete a bachelor's degree in a science related field or a Bachelor of Science in Nursing. They must be a licensed registered nurse (RN). In addition, candidates are required to have a minimum of one year of full-time nursing experience in an acute care setting, such as medical intensive care unit or surgical intensive care unit. Following the acute care experience, applicants apply to a Council on Accreditation (COA) accredited program of nurse-anesthesia. Education is offered on a master's degree or doctoral degree. Program length varies from 24 to 36 months. Many programs require entrance prerequisites similar to medical schools (pre-med courses) and up to two years of acute care experience.

4) **Anesthesiologist Assistant (AA):** An anesthesiologist assistant is a physician assistant specialist trained to administer anesthesia. In the United States, an anesthesiologist assistant must complete two and a half years of training in a CAAHEP accredited anesthesiologist assistant program after obtaining a baccalaureate degree and required medical prerequisites. The AA assists the anesthesiologist in developing and implementing the anesthesia care plan.

- Insertion of intravenous and arterial catheters and special catheters for central venous pressure monitoring
- Performing airway management and drug administration for induction and maintenance of anesthesia
- Assisting in the administering and monitoring of regional and peripheral nerve blockade
- Administering supportive therapy, for example, with intravenous fluids and cardiovascular drugs
- Adjusting anesthetic levels on a minute-to-minute basis; performing intraoperative monitoring
- Providing recovery room care
- Functioning in the intensive care unit

**Available Resources:**
- American Board of Medical Specialties (ABMS)  [www.abms.org](http://www.abms.org)
- American Academy of Physicians Assistants (AAPA)  [www.aapa.org](http://www.aapa.org)
- American College of Advanced Nurse Practitioners (ACNP)  [www.acnpweb.org](http://www.acnpweb.org)
- American Association of Nurse Anesthetists (AANA)  [www.aana.com](http://www.aana.com)
• American Academy of Anesthesia Assistants (AAAA) [www.anesthesiologist.org]
Mid-Level Provider Fellowship Director
By Bruce Lo

Overview:
This position oversees the fellowship training program for physician assistant (PA) after graduating PA school. Currently most PAs enter the workforce after graduating into a specialty like emergency medicine without specialty training. The fellowship director would create a curriculum based on the “Practice of Emergency Medicine” with the goal of exposing and creating a foundation to evaluating and managing urgent and emergent patients as well as advance their procedural skills. Those PAs with fellowship experience will be heavily recruited, potentially increasing the demand for PA fellowships. Organizations like Society of Emergency Medicine Physician Assistants (SEMPA) have other resources available.

Training Required:
No formal training is required to be the fellowship director. However, an association with a training program and someone with an interest in teaching are needed. Currently there is no formal curriculum for PA fellowships. As the need to increase the workforce in emergency medicine with more cost effective alternatives, there will be an increased demand for PAs in the ED, especially those who have clinical experience or advanced training.

Resources Available:
SEMPA has a great website for additional information about physicians in emergency medicine.
II. Administrative Careers

Medical Director
By Bruce Lo

Overview:
The Medical Director is responsible for overseeing the operations of the Emergency Department. While the duties can vary from one ED to another, it often includes reviewing quality assurance cases, complaint management, scheduling, setting operational and clinical policies, attending interdepartmental meetings, interacting with hospital administrators, creating the departmental budget, and the hiring and firing of ED providers. Depending on the size of the department, a medical director may also have an assistant director that will take on some of these duties.

Training Required:
No formal training is required, but leadership skills are a must. Often times having previous experience such as being an assistant director or another administrative position is required prior to becoming a medical director. Formal courses, such as the ACEP director’s academy are available. Other commercial courses are available that addresses various aspects of being a medical director. Advanced degrees and certification programs can be helpful (see section ‘Advanced Degrees’), as well as fellowships in ED administration, although neither is required. While no formal statistics exist in the rate of turnover or vacancy rate for medical directors, all emergency departments will require a medical director. Compensation varies depending on the ED volume and duties assigned.
Quality Improvement
By Bruce Lo

Overview:
The goal is to review patient care errors and complaints by providers in the ED. This person may also be involved in the hospital peer review process and is the liaison for the ED. They would provide feedback to ED providers on their performance including national metrics (e.g. CMS metrics, PQRS/PQRI, NQF, JCAHO, etc.), set triggered reviews (e.g. radiology over-reads, 72 hr returns, deaths in the ED, etc.) and “prospective” evaluation of their performance. They will look for processes to reduce error and improve patient outcomes.

Training Required:
No formal training is required. Commercial courses are available that provide education in the quality improvement processes. Guidelines for national and state metrics are available online at the respective organizations. Future direction will call for more accountability in health care quality (e.g. Accountability Care Organizations), public reporting of outcomes, and increased participation in pay for performance.
Risk Management
By Bruce Lo and Gillian Schmitz

Overview:
Risk management is part of our daily clinical practice and maybe applied to various career pathways for emergency physicians. Developing an interest in risk management may lead to opportunities to write, teach, testify, and participate in cases to protect both patients and physicians.
To maintain credibility as an expert witness or educator, one must maintain his or her clinical skills and interaction with patients. It should be emphasized that pursuing an interest in risk management is not a career change, but rather a maturation of a career, and an alternative to performing only clinical shifts. There is no set curriculum or pathway to pursue, but there are a number of options to become involved in risk management and medical legal issues in emergency medicine.

Training Required:
Learning the essential tools involves education and finding a mentor. Few, if any, residency programs in emergency medicine include risk management in their educational curriculum. While there are several resources listed in the following section, the best way to learn is to observe someone with experience.

Dr. Greg Henry pursued his interest by independently putting himself through classes to learn more about the insurance agencies and market, which led him to ultimately start his own offshore insurance company and help with the creation of three other insurance companies. He began testifying as an expert witness, established a niche in risk management, and began lecturing across the country on aspects of medical legal practice in emergency medicine. He participated on Emergency Medicine – Review and Perspectives (EM RAP), co-authored and provided case commentary in Bouncebacks, and developed his own audio lecture series, Risk Management Monthly. He now mentors a handful of other individuals who share his interest. He emphasizes that one must develop a niche and name for yourself before you will be sought out for your expertise. Many insurance companies, law offices, and hospital administration risk management departments may look for expert witnesses to review cases, but few will be paid unless they have had prior experience. Dr. Henry suggests that sitting in on cases, observing testimony, and finding a mentor with experience is imperative.

Dr. Michael Weinstock pursued his interest by creating a forum at his hospital to review M&M cases. This quickly developed into a well attended program by other
departments in the hospital. He saved the cases that generated the most
discussion and provided the most learning and compiled them into a series for a
book. He authored Bouncebacks, which presents these cases and reviews the care
and documentation. He is currently in the process of authoring a second book.

Some suggestions on finding a mentor include participating in a medical legal
committee within ACEP (or other medical organization), approaching a speaker of
a talk you attended or contacting an author of an article you read, contacting
your insurance company that covers your malpractice to see if there are
opportunities that you may get involved in, or considering law school.

Another opportunity to become involved locally is to serve on your hospital or
department practice committee. By reviewing charts within your own
department, you will learn from other’s mistakes, identify patterns to improve
systems errors, and recognize deficiencies in your own documentation and
practice to better protect your patients and partners.

Resources Available:
Several of the national organizations for emergency medicine have medical legal
committees or sections. The website for ACEP’s medical legal committee is:
http://www.acep.org/Content.aspx?id=23098&terms=medical%20legal

Risk Management Monthly is an audio series conducted by Dr. Greg Henry, Dr.
Rick Bukata and Dr. Mel Herbert. The lectures provide some legal background,
discussion of specific cases, and provide useful tips on strategies to reduce risk
and improve documentation. It also educates the learner on the process of a
lawsuit, integrates clinical medicine and risk management principles, answers
frequently asked questions, and makes specific recommendations to avoid claims.
The website for more information is http://prod3.ccme.org/riskMgmt.

There are numerous articles and books on malpractice, risk management, and
impact of the legal system on clinical practice.
Overview:
The scheduling of physicians to provide clinical coverage of the emergency department may be a part of the responsibility of a clinical director or an entirely separate physician position. It will require particular knowledge of the emergency department patient visits peaks-troughs, the patients per hour seen via the providers, the availability of staffing and the shift hours available. The schedule can be designed manually or with the use of a computer generated service. In addition, the responsibility of finding coverage for sudden absence of staff or the creation of a backup call schedule may be part of the duties. The compensation ranges from reduction in clinical hours or an extra stipend. There is an excellent opportunity to experience and to interact with the various computer scheduling software at the annual ACEP scientific meeting at the vendor exhibits.
Hospital Committee
By Bruce Lo

Overview:
This person would attend or lead a committee(s) to improve specific processes or best practices within the department or the health care system. Typical clinical committees include stroke, MI/CHF, trauma, peer review, credentials, pharmacy and therapeutics, critical care, EMS, medical records, patient care, sedation, utilization review, quality assurance, ED Observation, CME, medical executive committee, high reliability organization (HRO) to name a few.

Training Required:
While no specific training is required, expertise or a strong interest in the goal of a committee is helpful. Resources such as clinical polices from ACEP as well as commercial courses can be helpful. Increasingly hospitals and EDs will look to optimize operations and improve outcomes, requiring more committees. Future projections will likely see an increase need for participation in these committees.
**Hospital Administration**  
**By Bruce Lo**

*Overview:*  
This person would be part of the hospital leadership administration team. The “C-suite” (Chief Medical Officer, Chief Executive Officer, Chief Operating Officer, Chief Financial Officer, etc.) makes up the top of the health systems’ leadership team. While a physician may take any of these leadership positions, the most common is the Chief Medical Officer (CMO). This job is responsible for the medical operations of a health care system. This includes negotiating and facilitating the needs of physician providers with the other components of the hospital, while maintaining the overall goals of the health system (e.g. finances, patient/physician satisfaction, physician expectation, etc.). This job may oversee multiple hospitals depending on how large the health system is. The Vice President of Medical Affairs (VPMA) is another administrative leadership position that is typically a physician. Similar to the CMO, the job is to act as a liaison between the hospital and its physician providers to improve best practices and patient safety.

*Training Required:*  
Experience in hospital administration is a must. This can come from previous administrative work experience although advanced degrees or certification programs may be required (see section “Advanced Degrees”). Most hospitals will have a CMO and/or VPMA position and consider them an integral part of the hospital administrative team.
Utilization Review
By Bruce Lo

Overview:
This job requires reviewing charts on the utilization of resources. Common examples include reviewing appropriateness for admissions (using criteria such as InterQual®), advanced studies (eg. CT and MRI imaging), utilizing expensive medications and equipment, and length of stay on admitted patients. Hospitals will look to decrease “inappropriate” utilization as insurance companies will decrease or deny reimbursement without proper indication. This job may involve creating metrics and re-educating providers who are outliers or educate administrators the necessity for certain expenses in-patient care. This job is sometimes performed by the VPMA or CMO (See “Hospital Administration”), but can also be a separate position.

Training Required:
No formal training is required, but knowledge on reimbursement and indication for testing and treatment are needed. Guidelines for indications can be found on specialty organizations website (e.g. ACR for imaging criteria). Resources for admission criteria and length of stay can be obtained through agencies like CMS. Future projections will have an increase need for this as insurance companies will likely look to hospitals to control costs and decrease inappropriate use of resources.
III. Finance and Business Careers

Patient Satisfaction
By Bruce Lo

Overview:
Recently, there has been a national focus in health care on patient satisfaction. Health care systems have focused on patient satisfaction to stay competitive against competing health systems as well as reducing potential lawsuits. Currently, some patient satisfaction scores are made public. This role may fall under the medical director or be a separate position. This person would be responsible in creating initiatives to improve patient satisfaction as well as review patient complaints. This may include working with administrators, private vendors, and staff in developing and implementing initiatives as well as meeting with patients and their families on patient complaints.

Training Required:
No formal training is required, however commercial courses are available that teach ways to improve patient satisfaction scores. Various consulting companies and publications are also available relating to improvement in patient satisfaction. Future projections will see an increase in the need of a champion in each department as there will be increasing public disclosure and reimbursement tied to patient satisfaction scores.
Medical Informatics

Overview:
This person is responsible for utilizing and helping acquire devices and resources utilizing information in health care. This may include helping pick and implement an electronic medical record, clinical decision support system, and the use of handheld electronic devices. Those with computer programming skills may also help create software.

Training Required:
No formal training is required, but knowledge of current devices and software used in the medical field is helpful. Educational courses are available to learn more about different technologies as well as certification programs. Fellowship programs are also available in informatics. Currently the American Medical Informatics Association is working on board certification in this area through the American Board of Medical Specialties. With the rapid growth of technology and the required use of electronic medical records (through programs like CMS’s “Meaningful Use”), there will be a continued need in this area. Informatics fellowships are not ACGME accredited.
**Pharmaceutical Industry**

*Overview:*
This job can involve bench or clinical research or being a medical officer for the company. As a medical officer employed by the pharmaceutical industry, the role may include working as part of the team for drug development and approvals (eg FDA), educating the company’s sales force, and interacting with other physicians about their products. For research, employment may be directly from the company or as a consultant. Pharmaceutical companies may also recruit physicians who are ‘opinion leaders’ in giving talks to other physicians about their products.

*Training Required:*
No formal training is required, but advanced degrees may be helpful. For those who wish to pursue research, a track record in performing research or an advanced degree (eg PhD) is usually needed. For those hired as a medical officer, expertise in the usage of drugs is also helpful. Future prospects will continue to need people in this area, especially those with experience. However, due to the competitive nature of these positions as well as the current trends in decreasing pharmaceutical spending, these positions may be limited.
Patient Safety
By Bruce Lo

Overview:
This person would be responsible for looking at systems for improving patient safety. Examples would include patient sign outs, preventing medication and ordering errors, and preventing wrong site surgery/procedures. This role may be by itself or as part of the medical director or another designated administrative role (see ‘Best Practice’, ‘Hospital Committees’, ‘Continuous Quality Improvement’).

Training Required:
No formal training is required. Resources include published articles and educational conferences. Increasingly, insurance companies will not reimburse for preventable complications and public reporting of safety events will become mandatory. Future projections will have an increase need for a champion in this area.
Best Practices
By Bruce Lo

Overview:
This person would help create clinical policies and protocols based on current evidence. They would often work with other departments to create these pathways. This can be integrated into a ‘best practice’ or through order sets, especially with the use of the computerized physician order entry to reduce variability of care. Examples include STEMI and stroke protocols, management of disease processes such as asthma and congestive heart failure, and proper handoffs to other providers.

Training Required:
No formal training is required, but knowledge of the subject matter is a must. This can be part of the duties of another administrative position such as the medical director, of a hospital/departmental committee, or as a separate position by itself (See ‘Departmental and Hospital Committee’ ‘Continuous Quality Improvement’ ‘Patient Safety’). Resources such as clinical policies from major specialty groups (eg ACEP) and certification bodies (eg JCAHO) are available. Future projections will increase the need for such protocols as insurers will look to reduce costs (including readmissions and the use of excessive testing), health care systems will have to report out outcomes data, and publications will continue to highlight discrepancies in care (e.g. Dartmouth Atlas).
Billing, Coding, and Reimbursement
By Bruce Lo

Overview:
This person would work with their group or organization in evaluating the reimbursement and billing for their group. They can be the chief financial officer or head finance person for their group or be the responsibility of the medical director. The job includes determining who will code and bill provider charts (professional fee), educating members in their group about improving billing, as well as auditing charts for billing compliance. They may also be responsible for negotiating with private insurers reimbursement rates for their group (ie rates for their participation in the insurance network).

Training Required:
While advanced degrees may be helpful, they are not required. A strong interest and understanding of the billing rules are required. There are courses available for further education through ACEP and other commercial companies. Websites like ACEP also provide updated information on coding and billing as well as various paid subscription publications. With changes in health care, many groups will need a lead person in keeping up with compliance, including changes with billing requirements from insurance companies, preparing for audits, and the recovery audit contractor (RAC).
Insurance Company Medical Director
By Bruce Lo

Overview:
Medical Directors analyze medical records of applicants to determine insurance risk and to evaluate claims for life and disability. They can also do research risk analysis as well as train non-medical personnel who underwrite insurance policies. Other opportunities include creating new products for insurance companies.

Training Required:
No specific training is required. However, since the number of positions is limited, experience in the field is a must. Knowledge in primary care as well as electrocardiograms are also a must. Courses are available to learn more about the field of insurance medical director. Certification can also be obtained in insurance medicine through the American Academy of Insurance Medicine.

Resources Available:
The American Academy of Insurance Medicine provides resources for those who are insurance medical directors or interested (http://www.aaimedicine.org).
Operations Consultant
By Bruce Lo

Overview:
Consultants will evaluate the operational efficiency of an organization (e.g. hospital). This may be specific to a service line (e.g. cardiac services), or a specific department (e.g. emergency department), or on a higher level within the organization. They will review and make recommendations to optimize both operations and finances as well as implement changes.

Training Required:
No specific training is required. However, knowledge and experience in optimizing operations is important. Also, understanding financial records and experience in creating business plans is also a must. History of leading successful organizational changes will make a candidate more desirable. Training in administrative leadership can also be helpful.

Resources Available:
Courses are available in operational management through organizations such as American College of Healthcare Executives, American College of Emergency Physicians’ Director’s Academy, and American College of Physician Executives.
Medical Stock Analyst
By Bruce Lo

Overview:
This role is to review companies for potential investment in either a brokerage or venture capitalist firm. This will entail reviewing and interpreting data from studies carried out by medical companies as well as from competing companies. This will allow recommendation for possible investing or buying in a company. This may require going to various conferences to hear data presented and speaking with researchers to understand the efficacy and potential of new drugs and devices.

Training Required:
No specific training is required. A degree in finance or an advanced degree such as a Masters in Business Administration can be helpful, but is not required. However, basic understanding in interpreting research is necessary. This can be done by taking a research course or having performed research in a particular topic. Also, being able to interpret the financials of a company is helpful in understanding the financial health of a company.

Resources Available:
Research courses such as ACEP’s Emergency Medicine Basic Research Course can give an overview in critically understand research methodology. Many brokerage firms offer a primer in analyzing financials and investing in a company.
Physician Recruitment

Overview:
This job is responsible for recruiting and hiring of physicians. This person would be responsible for advertising positions as well as meeting and reviewing prospective candidates. This job includes reviewing prospective candidate’s application, contacting references, and evaluating each candidate’s specific strengths and weaknesses. This job is sometimes done by the medical director or by human resources in a large corporation, but may also be a separate position, especially in large private or contract management groups.

Training Required:
No formal training is required. Physician recruiters must be aware of federal laws regarding interviewing of candidates. With the shortage of ED physicians, this will remain an important position to ensure proper staffing. Private recruiting companies also exist that may be in need for physician recruiters.
IV. Extended Clinical Practice Careers

Rural Emergency Medicine
By Marlow Macht

Overview:
Emergency medicine practice in rural areas has unique challenges and rewards. Rural EPs typically have fewer specialists, limited resources, and prolonged transport times to tertiary care centers. Rural patients are exposed to injuries and illnesses that are rare in the urban environment, such as mining injuries and agricultural toxins. As a result, rural EPs develop a unique skill set and often have an expanded scope of practice. Because most residency-trained emergency physicians seek work in urban areas, there can be increased job availability in rural areas. This may also be accompanied by loan repayment in some underserved areas. Residents interested in rural practice can pursue an elective in rural EM.

Training Required:
No specific training is required but interest and dedication to rural emergency medicine is a must.

Resources Available:
The ACEP Section of Rural EM produces a newsletter and other publications to support rural practice.
Community Emergency Medicine  
By Bruce Lo

Overview:
This person will be primarily working in a community setting. Their primary responsibility would be to see and disposition patients. They may work alongside other attendings or mid-level providers or be single coverage. In some places, there may be opportunities to work with residents from other specialties and students. Work environments include those that are in urban areas, suburban, and rural. They can include tertiary referral centers, trauma centers, or critical access hospitals. ED volumes can vary from as few as 5000 visits/year to 100,000+ visits/year. Various practice setups include private practice groups, contract management groups, and hospital employees. People working in these setups include partnership track, employee status, or an independent contractor status.

Training Required:
All jobs will require an MD or DO and a valid license in the state practicing. Many jobs will require the physician to be board eligible or board certified in emergency medicine. A list of EM residencies can be found on ACEP and SAEM websites. Other requirements may be required such as certifications in ACLS, ATLS, and PALS. There are physician recruitment agencies that can help recruit for jobs. These places will often not charge the physician looking for a job, but will charge a fee for those places that use their services to recruit physicians. Other places where jobs will be advertised include back of emergency medicine journals and emergency medicine websites. Currently there is a shortage in board-certified emergency physicians. Compensation will vary depending on location and pay structure.
Disaster Medicine
By Mary-Elise Manuell

Overview:
Disaster Medicine opportunities for Emergency Medicine physicians focus mainly on planning for and responding to disasters. These opportunities exist at various levels (hospital, city, regional, state, national, international) and in conjunction with a variety of entities (healthcare system, various governmental and nongovernmental agencies). At the hospital level, EM physicians will most likely find themselves participating in any of the following activities: creating and revising hospital disaster plans (“Emergency Operations Plans”); conducting Hazard Vulnerability Analyses; chairing or being a member of the hospital disaster committee; serving as a liaison to other healthcare facilities and various other agencies (first responders, emergency management agencies, local emergency planning committees, etc.); management of hospital disaster exercisers and drills; serving a role in the hospital’s command center during a disaster; providing medical care, expertise and/or leadership during the response to and recovery from a disaster. Physicians with an expertise in Disaster Medicine also have the opportunity to participate (as member or leader) with other entities beyond the hospital level, such as: Medical Reserve Corps, Community Emergency Planning, regional or statewide Healthcare Coalitions, Disaster Medical Assistance Teams (DMAT) and other roles in the NDMS, FEMA, US Department of Homeland Security systems. This is still a relatively new field for Emergency Medicine physicians to explore and thus the opportunity often exists for physicians to create their own opportunities and niches in their hospital and community.

Training Required:
Advanced degrees and certification programs are very helpful and on the road to becoming an expected standard for physicians working in field of disaster medicine. Leadership skills are important.
Many formal courses exist (and many are free of charge): The ICS courses (100,200, 700, 800) are a definite necessity. FEMA’s Emergency Management Institute Professional Development Series is a certificate program that provides a good overview of emergency management principles.

Resources Available:
To obtain more information, visit the following websites:
ICS course info: http://training.fema.gov/is/nims.asp
FEMA PDS certificate program: http://training.fema.gov/emiweb/pds/
FEMA general training site: http://training.fema.gov/
NDMS (National Disaster Medicine System): http://ndms.dhhs.gov/
Emergency Medical Services (EMS)
By Marlow Macht

Overview:
Physicians specializing in emergency medical services direct the care of the sick and injured outside the hospital. EMS physicians direct ground and air transportation, support tactical operations as well as search and rescue, and are involved in disaster preparedness and response. EMS was approved by the American Board of Medical Specialties as the newest subspecialty in EM in 2010. The practice pathway to certification will remain open for 5 years, and then subspecialty certification will only be available to fellowship graduates.

Training Required:
EMS fellowships are one to two years. Two-year programs typically offer an advanced degree. Most physicians practicing EMS also maintain a clinical practice in emergency medicine. The EMS Section of ACEP and the National Association of EMS Physicians provide critical support and networking for physicians interested in EMS.
Telemedicine
By Marlow Macht

Overview:
This job will be responsible for helping to setup a telemedicine program. Telemedicine will allow consultants to see and evaluate patients remotely. Current examples of programs that utilize telemedicine include stroke, psychiatry, ICU, and prehospital care. This would require working with the health system’s IT department and various vendors to setup the technology. This will also require working with different departments to setup protocols regarding the usage of telemedicine.

Training Required:
No formal training is required, but knowledge of technology is helpful (See ‘Medical Informatics’). Knowledge of reimbursement and medical-legal issues regarding telemedicine is also important. Resources include various national and state organizations that are specific for telemedicine (e.g. Virginia Telehealth Network) and other organizations that have already incorporated the use of telemedicine. With limited resources (ie lack of specialist availability) and the regionalization of care, the use of telemedicine will increase in the future and will require a physician champion in a health system.
Transport Medicine  
By Marc Restuccia

Overview:
Transportation medicine (as distinct from Emergency Medical Services) involves the movement of patients outside of standard pre-hospital systems. It often does involve ambulances, EMTs and Paramedics, but not exclusively so. It can involve emergent patients, but elective patients also are often moved between, to or from medical facilities. Typically a patient or his/her family desires medical care to be continued, initiated or even terminated at a distance from their present location. The most usual example would be vacationing patients who, on becoming ill, desire or need care closer to home.

The physician overseeing the transportation of a patient in such a scenario will need to answer the following questions:

1. What is the condition of the patient? Can he/she be safely moved to the desired destination?
2. Is the proposed receiving facility able and willing to accept the patient?
3. What resources are needed to move the patient?
4. What regulations, local, regional, national or international are applicable to such a transfer?

Training Required:
A basic Emergency Medicine Residency should enable most physicians to have at least some grounding in the movement of patients. Additional training in EMS is extremely helpful. Ideally, the transport physician should have exposure to or involvement with a Critical Care Transport service. This can be ground based, air based (either Rotor Wing or Fixed Wing) or both. The ability to consult Critical Care, Pulmonary and Pediatric specialists can be invaluable to the physician overseeing a transport program or a single patient transfer.

Resources available:

The American College of Emergency Physicians (ACEP), the National Association of EMS Physicians (NAEMSP) and the Air Medical Physicians Association (AMPA) all have excellent resource documents and resources for the aspiring transport physician. Other resources include the Air/Surface Transport Nurses Association (ASTNA), the International Association of Flight and Critical Care Paramedics and the Association of Air Medical Services.
Mass Gathering Medicine
By Andrew Milsten

Overview:
Mass gathering medicine (MGM) has been a new sub-specialty within emergency medicine and not well formalized. Nonetheless, several exciting career path options are available. MGM would most likely be an adjunct to your emergency medicine career, as opposed to a separate career by itself. A common way to get involved in MGM would be as medical director for a venue for which the academic institution or community hospital has a contract to provide medical services. In this capacity, you could be assigned the role of medical director for a stadium, and all events that take place therein. In the academic environment, this may involve buying down clinical time, in lieu of MGM work. If you serve as an EMS medical director, you may get tasked with being medical director a MG event. This EMS role could expand to a regional or state level of involvement (especially in large cities such as New York City and Los Angeles. Grant funding and research are other ways to get involved in MGM. If you work internationally, there may be opportunities to get involved with large events such as the Olympics or Hajj (through the World Health Organization, which has 2 MGM positions). In the military, there are personnel responsible for large MG event medical support and logistics, including coordination with neighboring civilian facilities and agencies. The Department of Defense has been involved in support of large MG events, and there is usually physician involved in the planning process. Civilian physicians who become involved with this process have a broader public health emergency preparedness background. On the federal level, there are positions within the Assistant Secretary for Preparedness and Response (Health and Human Services). There are also positions within the HHS regions as regional emergency coordinators, but these typically do not pay salaries commiserate with a physician’s, so are mostly filled with either emergency management professionals or nurses/allied health with an emergency management background. Within the CDC, there are a number of positions both within the National Center for Environmental Health and the Office for Public Health Preparedness and Response. The positions offer more full-time MGM work. Homeland security has MGM positions as well. There are private corporations and companies that are involved in this field as well. This includes medical advisors to professional sports and companies that staff MG events. Finally, there always remains the opportunity to volunteer at local events.

Training Required:
No formal training is required, but MGM lends itself to emergency medicine
fellowships in EMS or Disaster Medicine. Furthermore, the public health emergency preparedness work that is required would benefit an advanced degree such as an MPH (or similar Masters degree), Masters in Disaster Medicine (European Master in Disaster Medicine; Philadelphia University; American Military University) or Certificate in Patron Management (University of New Haven). There are numerous courses that could be taken to enhance ones knowledge in this area, including BDLS & ADLS (basic & advanced disaster life support), HazMat courses, ICS courses (incident command structure), and any number of online emergency management courses available through FEMA.

*Resources Available:*
SAEM list of EMS and Disaster Medicine fellowships
(http://www.saem.org/fellowship-directory); FEMA courses
(http://training.fema.gov/is/); NAEMSP MGM publication
(http://www.naemsp.org/documents/FORMMassGatheringOrder.pdf)
Astronaut
By Daniel Handel

Overview:
Emergency Physicians have a good track record of participation in the NASA Astronaut Corp with several currently active in both astronaut and management roles. Historically, about 50% of physicians in the astronaut corps have had an emergency medicine background. Traditionally, physicians selected to be astronauts have either come from a military background and/or been flight surgeons at NASA, but this is not a definite requirement.

Training Required:
No specific training is required beyond a medical background, but a strong interest in aviation, the basic sciences and good teamwork skills are all desirable traits. Most have a Master's degree in another technical field as well. Board certification in Aerospace Medicine can be obtained through the American Board of Preventive Medicine. Residencies in Aerospace Medicine are currently available at Wright State University in Dayton, Ohio and the University of Texas Medical Branch in Galveston, Texas. NASA has not announced when the next selection will be (as of January 2011) for astronaut candidates. The application cycle is dependent on federal funding of NASA and the future direction of manned spaceflight. With the Space Shuttle program ending and the Constellation program being scaled back currently, it is unknown when NASA will be taking new Astronaut Candidate for the foreseeable future.

Resources Available:
The NASA Astronaut Selection Website can be found at: http://astronauts.nasa.gov/. The Aerospace Medicine Association (http://www.asma.org/index.php) provides resources for more formal training.
Sports Medicine
By Bruce Lo

Overview:
Sports Medicine physicians involve the prevention, diagnosis and non-operative treatment of sports-related injury. This may involve taking care of professional athletes to amateur athletes to the sports enthusiast. Amateur athletes may also include college and high school sports teams.

Training Required:
While additional training/certification is not required, fellowship opportunities are available. Fellowship training will allow for board certification through the American Board of Medical Specialties. Fellowship training is typically 1 year in length. However, those who are not fellowship trained or board certified can take educational courses in the field of sports medicine.

Resources Available:
Information on applying for fellowships includes the National Resident Matching Program and the American Medical Association’s Fellowship and Residency Electronic Interactive Database Access. Also, the Society of Academic Emergency Medicine and the Emergency Medicine Residents’ Association have catalog listing of various fellowships in sports medicine. Organizations with available information include the American Medical Society of Sports Medicine, the American College of Sports Medicine, the Association of Professional Team Physicians, and International Federation of Sports Medicine.
Hyperbaric Medicine
By Bruce Lo

Overview:
Hyperbaric medicine involves administrating hyperbaric oxygen for various medical conditions. These include (but not limited to) air or gas embolism, carbon monoxide poisoning, wound healing, decompression sickness, and various infectious conditions. The specialist in hyperbaric medicine provides consultations and helps create protocols. Often times the specialist in hyperbaric medicine can also be trained in wound care.

Training Required:
Fellowship opportunities are available in hyperbaric medicine which will allow the physician to sit for board certification through the American Board of Medical Specialties. Fellowship training is typically 1 year in length. However, if fellowship training is not desired, commercial certification courses in hyperbaric medicine are available.

Resources Available:
Information on applying for fellowships includes the National Resident Matching Program and the American Medical Association’s Fellowship and Residency Electronic Interactive Database Access. Also, the Society of Academic Emergency Medicine and the Emergency Medicine Residents’ Association have catalog listing of various fellowships in Hyperbaric medicine. Organizations with available information include the American College of Hyperbaric Medicine, the Undersea and Hyperbaric Medicine Society and the International Hyperbaric Medical Association.
International Emergency Medicine
By Marlow Macht

Overview:
International emergency medicine includes the development of emergency medicine in other countries and disaster response.

The development of emergency medicine in other countries can range from teaching at the bedside to effecting changes in national policy. The physicians who have done this most successfully typically establish a long-term collaboration. Fellowship in international emergency medicine is an excellent way to make the necessary connections and develop the experience to be comfortable in this realm. Physicians can work in this capacity while employed by an academic institution, a governmental organization or the military. Some non-governmental organizations (NGOs) also employ or accept volunteer physicians in this capacity.

Emergency physicians are well-suited for disaster response and humanitarian relief. While there are some paid positions in this capacity (primarily with governmental and military organizations), many emergency physicians provide this care with a NGO. When considering volunteering, it is important to find an organization that is experienced and professional. One sign of an experienced NGO is adherence to the Sphere Project’s Humanitarian Charter and Minimum Standards in Disaster Response (www.sphereproject.org). Some international EM fellowships focus more heavily on disaster response and humanitarian relief.

Training Required:
For either portion of international emergency medicine, an MPH degree and/or a Certificate in Tropical Medicine and Traveler’s Health can provide important background. Most fellowships offer one or both of these qualifications.
Wilderness Medicine
By David Cheng and Marisa Oishi

Overview:
Wilderness medicine is the practice of medicine in remote territories where definitive care is hours to days away. It is defined by difficult patient access, limited medical equipment, and austere environments. It employs advanced emergency field care, improvisation medical skills, technical rescue skills and outdoor survival skills. The major professional organization is Wilderness Medical Society. There are post-residency wilderness medicine fellowships available. Advanced wilderness life support course certification and FAWM certification are available. Opportunities include expedition medicine physician, travel medicine physician, camp physician, park physician, aerospace medicine physician, mountain medicine physician, undersea physician and SAR (search and rescue) physician.

Training Required:
No specific training is required but an interest in the field is mandatory. Multiple, non-accredited fellowship in wilderness medicine are currently available.

Resources Available:
The Wilderness Medical Society is a great resource for wilderness medicine. www.wms.org
Cruise Ship Medicine

Overview:
ED physicians can serve on a cruise boat and have the opportunity to travel and see the world. The basic job description of a cruise ship physician is to 1) provide onboard medical care and treatment for the crew & guests, 2) oversee the functioning of the medical center and supervises the nursing staff, 3) establish and maintain a rapport with guests and crewmembers and 4) serve as the liaison between the medical staff and the onboard ship’s management. He or she provides patient care both in the ships medical center and on-site emergencies as the situation dictates onboard.

The resources available will depend on the ship and cruise line, but smaller boats staff 1 physician and 2-3 nurses, while larger boats will hire 2 physicians and 4 nurses. Basic equipment and supplies, antibiotics, and a defibrillator are generally available. Medical staff can perform minor procedures, treat accidents, dispense medications and begin treatment for cardiac problems. Most ships have capabilities to communicate with backup experts on shore.

In the 1990s, the American Medical Association unsuccessfully tried to get Congress to regulate medical care in the cruise industry. Most cruise lines are incorporated outside the United States and most ships fly foreign flags, which shields them from U.S. law. Since then, the International Council of Cruise Lines has created nonbinding guidelines to have better trained doctors and to put modern X-ray machines, medications and other equipment on board.

Training Required:
Physicians are typically recruited who have emergency, critical care, or family/primary care experience. There is no specific training required for cruise ship medicine although previous experience maybe preferred by some cruise lines.

To be a good candidate for cruise ship medicine, physicians are required to have at least 3 years of post-graduate medical training or 3 years of primary care clinical experience. "Some of that training and/or experience must be in emergency medicine. ACLS certification is mandatory, and board certification is encouraged”, states Dr. Bradberry, medical director for Carnival Cruise Lines. He continues, "If you do not have experience in emergency medicine and feel
uncomfortable performing ICU-level services, this may not be a good fit for you. Emergencies are going to occur, and you need a broad spectrum of training and experience. For example, you will have to intubate, run a code, manage a ventilator, interpret EKGs and X-rays, and perform procedures such as suturing and placing a plaster splint. Also, guests will sometimes injure themselves during on-shore excursions, and they will return to the ship needing care."

*Resources Available:*
The *Universal Application Form* can be downloaded from the ACEP Web site. The form can be used to apply for a position at most cruise lines. It is recommended that interested physicians send the cruise line a letter of interest and CV in addition to the application form. Individual cruise lines may also require you to fill out their own application form and submit it with documentation of your credentials.

National Lecturer and Speaker
By Gregory Volturo

Overview:
Public speaking is a learned and well-practiced skill which does not come naturally to most physicians. Lecturing is often a requirement for most academic faculty and is necessary to hone their teaching skills as well as for academic promotion. However, those working in community settings may also have a number of speaking opportunities. Some of the most widely known and most prolific speakers in emergency medicine have worked their entire careers in community hospital settings. Embarking down this track first requires the development of expertise in a specific area of interest. Ideally this expertise has been recognized by your peers through publication in peer review literature however, this not mandatory for some content areas or speaking venues. Once lecture content is developed, it must be practiced, thus the new speaker must take advantage of every opportunity to present and practice the lecture delivery in order to maximize audience engagement. The more one presents, the more comfortable you become in front of an audience. The key to developing comfort on the podium is to be certain that you are more knowledgeable of the subject material than the audience to whom you are speaking. This requires significant preparation, not only understanding your subject material, but also understanding and having knowledge about subject material that may be tangential but yet related. This requires continued updates and literature reviews in your subject area. Regardless of the number of times a lecture is given, a good speaker will review their material prior to their lecture. Lastly, your personal credibility as a speaker is dependent upon your assuring that the lecture material is factually correct and free of sponsor bias. Potential conflicts of interest should always be disclosed to the audience. This is a mandatory requirement for all CME events. For the seasoned speaker, there are a number of opportunities to participate as speakers in continuing education events, seminars, small group discussions and corporate events, etc. Speaking in these varied venues can be exciting and professionally stimulating. Speaking may provide opportunity to travel professionally, will most certainly provide opportunity to network with other professionals who have similar interests, and can often expand your own knowledge and expertise.
*Training Required:*
No specific training is required by numerous public speaking organizations and classes are available.

*Resources Available:*
ACEP provides a number of opportunities to speak at the state and national level. The New Speakers Forum at Scientific Assembly is an opportunity to showcase yourself to a national audience.
Career Path: Organizational Leadership
By Richard Aghababian

Overview:
As Emergency Physicians (EPs) move through training into the first years of clinical or academic practice their interpersonal communication skills, teaching abilities and breadth of medical knowledge of Emergency Medicine and other specialties matures. This process allows EPs with social and leadership skills to pursue positions of responsibility in professional medical organizations (PMOs). Personal skills and attributes that will be evaluated by his/her peers when an EP seeks a leadership in a PMO include:

1. Triage—separating critical from routine administrative challenges
2. Ability to develop rapport with new acquaintances with similar interests
3. Negotiation and crisis resolution abilities, particularly when more than one discipline is involved in the management of an issue
4. Familiarity with medical finances, budget development and ongoing budget management
5. Electronic communication

Opportunities for Organizational Leadership can be pursued through the following PMOs:
Emergency Medicine Societies (ACEP & SAEM)
American Medical Association
State Medical Societies
Interdisciplinary/subspecialty societies (AHA)

PMOs are frequently interested in recruiting into their ranks EPs interested in:
1. Defining the scope of medical practice, refining training curriculum for pre-hospital personnel, medical students, residents and fellows
2. Codes of ethics and administrative policies that will improve patient care and increase patient satisfaction

It is not uncommon for EPs who have gained experience as a PMO leader to be subsequently recruited for leadership positions in their Medical Group, Teaching Faculty or as a Manager in their Health Care System.

Training Required
No formal training is required beyond clinical experience and a commitment to participate in a meaningful way (both time and effort). Individuals with advanced degrees in Business Administration, Public Health or the Law may advance more quickly. Generally, participation in a PMO begins with assignment to a committee. Progress to leadership is usually based on the quality of committee participation. Most PMOs now actively encourage medical students, residents and fellows to join and participate before completion of training. In many cases participation is offered at no cost to trainees and at low cost to physicians in the first years of practice. The best way to enter into the “mainstream” of a PMO is to identify one or two mentors, such as faculty or colleagues, who can assist you as you are looking for your desired “niche” within the organization. For the mature EP, participation in PMO leadership can help smooth the transition from full time clinical/academic practice to part-time activity and eventual retirement.

Resources Available
All PMO’s maintain web pages that outline their mission, activities and opportunities for member participation. The AMA site is [www.ama-assn.org](http://www.ama-assn.org)
Section V: Government

Governmental and Military Emergency Medicine
By Gillian Schmitz

Overview:
The same clinical, academic, research and administrative opportunities outlined in this article for civilian emergency physicians are available for the military EP at the various military medical centers, research institutes and military bases throughout the world. In addition, the active duty military EP has unique operational opportunities ranging from direct support of ground troops, to shipboard and in-flight medicine, to specialized areas like flight surgery, undersea medicine, and special operations. Increased levels of responsibility and advanced leadership roles are widely available to the military EP.

General Schedule (GS) positions are civilian employees that serve a vital role in supporting the military mission. They provide the skills that are needed to support military operations and care for the men and women of our armed forces. The military integrates the talents and skills of its military and civilian members to staff a department and meet the needs of its training programs and patients. Civilians may serve as physicians in a military emergency department and work alongside active duty physicians to care for patients, teach residents, and perform research. GS positions maybe available in the US or overseas. Although GS civilians do not have military rank by virtue of their GS position, regulations include civilian and military grade equivalencies for pay and protocol comparison purposes. Typically, GS civilians are hired for an initial probationary year, which may then be extended into a permanent position. Contractor Position Government contractors are also civilians who can serve as independent contractors in a military emergency department. Physicians may help to fill shifts while the EDs are short staffed based on deployments, other assignments, or military operations. Job security, however, is not guaranteed as positions are limited by short term contracts, which may not necessarily be renewed and are based on the needs of the military.

Training Required:
Military emergency medicine positions require a military commitment and associated training through the United States Armed Forces. GS positions require board specialty training in additional to position specific administrative training.
Resources Available:
Local military recruiters can be contacted for specifics of military positions.
VA Emergency Physician
By Chad Kessler

Overview:
The opportunity to work for government is as unique one in Emergency Medicine. Over the past 10 years or so, more Emergency Departments within the VA are hiring Board Certified EPs. There is ample opportunity for employment and leadership positions. A few of the advantages are federal benefits, a very favorable medicolegal environment, an excellent medical record system and a less stressful environment than many EDs. Typically, volumes are lower than nearby affiliates in academia or the community. The patient population varies by location however there are usually few women, pediatric or trauma patients. Generally, they are “medicine-heavy” departments.

Training Required:
No formal training is required, but you need to have an open mind and some patience. The VA is extremely supportive of young physicians considering leadership positions. The VA can be an ideal situation for those who really enjoy Internal Medicine or who completed an EM-IM residency. Those with a formal background in both specialties could easily be considered for a leadership position.

Resources Available:
Available jobs can be found on USAJOBS.COM. Should you want more information on a VA EM job, please contact Chad Kessler at chad.kessler@va.gov
Continuing Medical Education (CME) Director

Overview:
This job is responsible for planning CME events. This may be through non-profit organizations like ACEP (or their respective state chapters), medical schools, hospitals, or through private, commercial organizations. This position would be responsible for evaluating knowledge gaps, obtaining speakers for an event, and reviewing content to ensure lack of bias.

Training Required:
No formal training is required, but knowledge on the rules set forth by the Accredited Council of Continuing Medical Education (ACCME) is required. For those who are actively involved in CME programs, certification is available through the National Commission of Certification of CME professionals (CCMEP). Opportunities for involvement will be present, as the ACCME will mandate more physician involvement in the planning of CME events.
American College of Physician Executives
By Peter Paige

Overview:
The American College of Physician Executives is an organization that
encourages physicians to assume more active roles in the leadership and
management of systems in the health care industry. It assists physicians in
acquiring the necessary leadership, interpersonal and management skills to
better be able to advance within their organizations and careers as a physician
executive.

Training Required:
The American College of Physician Executives offers many CME courses for
physicians interested in learning more about the business side of medicine.
These courses can also be used toward an advanced degree or board
certification in medical management. Several masters level programs are
linked to the College including the relatively new Master of Medical
Management.

Resources Available:
Learn more: http://www.acpe.org/
V. Advanced Degree Careers

Masters of Public Health
By Marlow Macht

Overview:
The Master of Public Health degree can prepare the emergency physician for leadership roles in many areas of public health. Programs are one to two years in duration, and can include a significant component of distance learning. All include a foundation in the core disciplines of public health: epidemiology and biostatistics, environmental health, health systems management, and social and behavioral health. From that foundation, students can pursue further work in any of those disciplines, or in a wide variety of other concentrations tailored to the student’s interest. These include: health law, injury prevention, global health, occupational health, preparedness, toxicology, and tropical medicine.

As examples, emergency physicians can use this qualification to prepare for a management position, perform clinical research, work in disaster preparedness, develop emergency medicine internationally, or work in a department of public health.

Training Required:
Masters degree training is required.

Resources Available:
There is a searchable database of public health programs at http://www.asph.org/document.cfm?page=1106.
Masters of Business Administration (MBA)
By Daniel Handel

Overview:
Masters in Business Administration (MBA) programs can either be offered along or in combination with other degrees. A traditional, full-time MBA takes two years but can be accelerated by cutting out summer breaks and shortening vacation periods. Part-time programs that can be completed while students continue working may take three years or more. Executive MBA programs allow students to complete the MBA in two years or less while continuing to work full time. Healthcare MBAs are also available that focus on the healthcare sector. With continued focus on healthcare reform, physician leaders will be increasingly needed, and those with formal MBA training will be in an advantageous position to assume these leadership roles. Master of Medical Management (MMM) is a masters degree with a similar curriculum to that of the MBA, the MMM tends to be programs offered to physicians with a healthcare focus in more of an Executive MBA format.

Training Required:
Completion of any accredited MBA program. Most programs waive GMAT requirements for potential students who have already completed medical school.

Resources Available:

Businessweek (http://www.businessweek.com/business-schools/)

“Certificate Programs” – These programs tend to cover similar topics as a MBA but in a more concise fashion. Given their brevity, they tend to focus just on healthcare administration. A directory these programs can be found at http://www.usnewsuniversitydirectory.com/certificates/healthcare/healthcare-administration.aspx
Masters of Medical Management (MMM)
By Peter Paige

Overview:

Today's changing health care environment employs more physicians in hospital administrative and management roles. Physicians in managerial roles need to balance the complex mix of financial responsibilities, human resource needs and competitive pressures to streamline and transform our health care system. The Master of Medical Management (MMM) program provides physicians with the knowledge base and managerial skills to be successful in these roles.

The MMM emphasizes three important practical skill sets necessary for physician executives to build and manage successful health care organizations. The program's focus on: development of leadership skills, organizational strategy, and information management. They teach the physician executive to effectively manage health care organizations and staff. The MMM degree provides a strong foundation for physician executives to actively participate in the changing health care industry.

Resources Available:

There are several programs throughout the country which are tailored towards the practicing physician. More information can be found at:


University of Southern California, Keck School of Medicine:
http://uscsom.convio.net/site/PageServer?pagename=MastersinMedicalManagementStory