Fellowship Program in Critical Care Medicine

Mayo Graduate School of Medicine

Mayo Clinic Rochester
Rochester, Minnesota
Fellowship Program in Critical Care Medicine

The Fellowship Program in Critical Care Medicine at Mayo Clinic Rochester offers:

- A multidisciplinary approach to teaching the management of seriously ill patients
- A training curriculum that can lead to certification in anesthesiology or internal medicine critical care
- A comprehensive education in the theoretical and practical aspects of critical care medicine that will help develop a high level of competence in managing patients with life-threatening illnesses
- An opportunity to perform clinical or basic research in related fields
- A choice of rotations at Mayo Clinic’s practice sites in Minnesota, Florida and Arizona
- A work environment to learn how to effectively collaborate with other specialties in managing critically ill patients
- The knowledge necessary to critically evaluate medical literature, develop research protocols, and evaluate new procedures and equipment
- A solid foundation in the administrative skills needed to direct an intensive care unit

Mayo Clinic’s favorable faculty ratio, large patient population and state-of-the-art diagnostic, therapeutic and research facilities combine to create a truly integrated educational experience. The Mayo Clinic way of graduate medical education ensures the finest teaching and the broadest patient care experience possible during a busy, hands-on fellowship.
Training at Mayo Clinic

Mayo Clinic has a long-standing tradition of practicing both the art and science of medicine. As one of the country’s largest and best-known private group practices of academic medicine, Mayo Clinic was founded on the belief that physicians need to work together, teach and learn from others, and conduct research to provide sustained, excellent patient care.

Physicians, scientists, residents, students, nurses and allied health staff members work as a team at Mayo Clinic. Our staff clinicians and scientists are called consultants in recognition of their teaching and mentoring role in the team.

**Mayo Clinic teamwork spans many locations**

In Jacksonville, Florida  
Mayo Clinic Jacksonville  
St. Luke’s Hospital

In Rochester, Minnesota  
Mayo Clinic Rochester  
Saint Marys Hospital  
Rochester Methodist Hospital  
Charter House

In Scottsdale, Arizona  
Mayo Clinic Scottsdale  
Mayo Clinic Hospital

Mayo Health System
Program Description

Clinical Training

Mayo Clinic’s Fellowship Program in Critical Care Medicine can be one or two years in length, depending on your career goals and the requirements of the specialty board supplying your certification. Each year of the program will include six to nine months of critical care medicine assignments. The remaining months will be filled with your choice of elective rotations in related fields.

During this critical care fellowship you will gain experience in:

• Administrative and management principles
• Cardiopulmonary resuscitation and advanced life support
• Critical care cardiology
• Ethical and legal aspects of critical care medicine
• Gastrointestinal emergencies
• Hematologic disorders
• Infectious diseases and antimicrobial agents
• Invasive and noninvasive monitoring systems
• Metabolic aspects of critical illness
• Neurological and neurosurgical intensive care
• Pathophysiology of shock and cardiovascular disease
• Pharmacology and pharmacokinetics
• Renal failure, acid base, and fluid and electrolyte disorders
• Respiratory failure and airway management, including long-term mechanical ventilation

During your fellowship you also can gain experience caring for kidney, pancreas, bone marrow, or heart and lung transplant patients.
**Typical Rotation Schedule**

**One-Year Program**

Critical Care Medicine ................. .8 to 9 months  
Anesthesiology  
Intensive Care Units  
Nephrology Critical Care  
Electives .............................. .3 to 4 months  

**Two-Year Program**

Critical Care Medicine ................. .12 months  
Intensive Care Units  
Electives .............................. .12 months  

**Electives**

The length of your elective rotations will vary depending on the rotation and your goals. Frequently scheduled electives include:  
- Anesthesiology  
- Bronchoscopy  
- Chest Radiography  
- Chronic Ventilator Dependency Unit  
- Echocardiography  
- Infectious Diseases  
- Inpatient Cardiology/ICU  
- Neurologic Critical Care Medicine  
- Nutrition  
- Pediatric Critical Care Medicine  
- Pulmonary Function Laboratory  
- Research  
- Respiratory Therapy  
- Sleep Disorders  
- Trauma/Critical Care Surgery

**Rotations to Other Mayo Clinic Sites**

You may choose to take an elective rotation at either Mayo Clinic Jacksonville or Mayo Clinic Scottsdale during your fellowship in critical care medicine. This
will give you the opportunity to experience critical care medicine in an environment integrated into, but distinct from, the practice in Rochester.

Mayo Clinic funds the authorized additional costs of travel, housing, car rental and licensure fees during these rotations. Our fellows consistently rate these rotations very highly.

**Didactic Training**

Clinical conferences, seminars, small discussion groups, journal clubs and one-on-one instruction are all an integral part of the Fellowship Program in Critical Care Medicine. You will attend teaching sessions with critical care medicine residents, fellows and consultants each weekday morning. At a division conference each Thursday, you will hear a critical care consultant, fellow or guest speaker make a presentation about a topic related to critical care medicine.

You also will attend a core curriculum lecture series that covers a broad range of fundamental critical care topics and will meet regularly for a journal club and board review sessions. You will be encouraged to attend many of the conferences sponsored by the departments of anesthesiology, internal medicine and surgery.

“The flexibility and opportunities in this fellowship are truly unique.”
Teaching Opportunities
You will have the opportunity to teach residents from various residency training programs offered by the Mayo Graduate School of Medicine, in addition to Mayo Medical School students.

Cardiac Life Support Certification
Certification in Basic Cardiac Life Support and Advanced Cardiac Life Support (ACLS) is required for all Mayo Clinic fellows. ACLS courses are held during the last week of June, just before the start of the academic year. The ACLS course also is offered every month during the year to facilitate recertification.

Other advanced life support certifications are provided consistent with specialty board requirements.

Research Training
You will have the opportunity to participate in at least one clinical or laboratory research project during your fellowship. You are expected to complete some type of research project.

Examples of past or ongoing projects include:
- Comparison of endotracheal aspiration culture results with those from a bronchoscopic protective specimen brush in ventilator-associated pneumonia
- Clinical review of Haemophilus influenzae pneumonia
- Incidence of sepsis and septic shock in Olmsted County
- Effect of halothane on platelet intracellular CA2h
Bench to bedside
Mayo Clinic is committed to basic and clinical research that leads to better patient care.

Mayo Clinic’s hallmark is teamwork —
• Among basic and clinical investigators
• Among investigators and clinical practitioners
• Across Mayo Clinic sites
• Between Mayo Clinic and other institutions

Mayo Clinic people in research —
• 231+ full-time physicians and scientists
• 396+ associates and fellows
• 1318+ administrative and allied health staff

Research funding sources —
• Extramural funds = $130 million+
• Mayo Clinic funds/other revenue = $110 million+

“Other programs can’t match the breadth of material or the enormous support that Mayo Clinic provides.”
General Program Information

Patient and Service Mix
As a regional medical center for the Midwest, Mayo Clinic Rochester registers more than 320,000 patients each year. Eighty percent of the clinic’s patients are self-referred and come from within a day’s drive. Although Mayo Clinic has a reputation for successfully handling the most obscure and difficult medical problems for people from around the world, common medical concerns are actually the norm. This allows you to see and treat an exceptional variety of illnesses during your clinical training.

The critical care medicine service manages patient care in medical, pediatric and surgical intensive care units at four hospitals in three practice locations, providing neurosurgical, postoperative cardiac, and neonatal intensive care.

Call Frequency
Your call schedule will vary by individual rotation. Mayo Clinic follows recommendations of the Accreditation Council for Graduate Medical Education.

Moonlighting
Moonlighting is permitted for licensed fellows. Moonlighting activities may be scheduled during those times when you are assigned to consultative or outpatient rotations. Moonlighting must not interfere with your fellowship responsibilities.
Evaluation

To ensure that you acquire adequate knowledge and develop your technical skills, your performance will be monitored carefully during the course of your fellowship in critical care medicine. You will be evaluated formally by your supervising faculty member each quarter. In addition, you will regularly evaluate the faculty to ensure that your educational needs are being met.

Career Development

You will meet periodically with various faculty members, administrators and the program director to discuss your individual goals. Mayo Clinic recruits many of its staff physicians from its own training programs. Thus, when you successfully complete the Fellowship Program in Critical Care Medicine, job opportunities may be available at one of Mayo Clinic’s group practices.

Additional Training

At the conclusion of your fellowship in critical care medicine, you may wish to continue your graduate medical education at Mayo Graduate School of Medicine. Fellowship programs are available in all major medical and anesthesia subspecialties, such as pulmonary medicine, cardiology, cardiovascular anesthesia and pain management. Contact your faculty adviser for more information about these opportunities.
Faculty

In addition to caring for patients in their clinical practices, Mayo Clinic’s faculty members are committed to teaching and facilitating the growth of medical knowledge. Many of our faculty have published and lectured extensively and are well-regarded in their field. You will have direct access to these individuals throughout your training program.

Advisers

You will be assigned a faculty adviser who can provide comprehensive educational advice and personal support. Your adviser also will serve as a contact point, introducing you and your family to Rochester and the Mayo Clinic system.

Visiting Professors

Many prominent professors visit Mayo Clinic each year. They present their work during noon and/or morning lectures and participate in hospital rounds. You are encouraged to take full advantage of these opportunities.
Facilities and Resources

Facilities

The Mayo Clinic campus in Rochester, Minnesota, includes two hospitals with nearly 1,300 beds, a Level One Trauma Center, a comprehensive outpatient medical complex, a variety of research facilities, and several full-service laboratories and on-site pharmacies. More than 1,000 staff physicians represent virtually all clinical specialties.

The Rochester hospitals include fully equipped medical, surgical, pediatric, coronary, neurosurgical, neonatal and postcardiac intensive care beds, and new intensive care areas are being planned. A regional Level One Trauma Center is located at Saint Marys Hospital.

Libraries

Mayo Clinic’s library system in Rochester has one of the largest medical collections in the world — more than 4,300 journal subscriptions, nearly 353,000 bound volumes, and several medical databases and search engines. The main library provides study space, computers, microfilm readers and reader-printers, translations, duplicating machines, and book ordering and audiovisual services.

Reference librarians can arrange interlibrary loans, perform literature searches, and teach you how to use the computer database services that link Mayo Clinic to a global network of scientific information. More than 625 clinical conferences are preserved on videotape each year. You can view these tapes at the library or check them out for use at home.
Branch libraries include a health-related sciences library, two hospital libraries and the Learning Resource Center (LRC). The LRC, devoted mainly to the Mayo Medical School curriculum, offers special collections emphasizing women’s issues in medicine and health, medical education, and ethics.

**Computer Services**

Macintosh and IBM personal computers and software are available for residents and fellows to use. In addition, Mayo Clinic’s Microcomputer Education Center provides training in the use of computers for word processing, data collection and data analysis.

**Telecommunications System**

Mayo’s clinics in Rochester, Scottsdale and Jacksonville are linked via a sophisticated telecommunications system, which provides video teleconferencing and data transmission. Staff can have live, interactive consultations with physicians and their patients at the other sites via TV monitors. In addition, X-rays, laboratory test results, CT scans, ECG tests, angiograms and pathology slides can be transmitted between sites.

An advanced telecommunications system also is the foundation for Mayo Clinic’s unique five-digit telephone dialing and pager system. Physicians can be easily accessed for consultations or updates, strengthening the teamwork among consultants, fellows, residents and allied healthcare staff at all three practice sites.
Compensation and Benefits

Vacation and Trip Policy
You may take up to 15 working days (three weeks) each year for vacation.

You are encouraged to present your research at regional and national meetings. If you are selected to make a presentation, Mayo Clinic will pay the authorized expenses for you to attend that meeting.

Stipends and Other Benefits
Mayo Clinic has highly competitive stipends and a benefits package that includes:
• A comprehensive medical care plan
• Short-term disability insurance
• Voluntary basic life insurance, disability insurance, and family life insurance
• Voluntary additional life insurance
• Voluntary accidental death and dismemberment insurance
• A dental assistance plan
• Excess personal liability insurance
• Professional liability coverage

Additional information about stipends and benefits will be provided during personal interviews.
The Rochester Community

Home of the original Mayo Clinic and an array of successful technology-based companies, Rochester, Minnesota, welcomes thousands of visitors from around the world each year. Rochester, population 80,000, provides all the benefits of small town living while offering amenities associated with larger cities.

If you’re interested in the fine arts, you’ll find an active network of enthusiasts who support a symphony orchestra and chorale, four theaters, a community art center, and several choruses and bands.

Rochester offers excellent sports and physical fitness facilities. Within the city limits are six golf courses; tennis and health clubs; an extensive network of walking, biking and in-line skating trails; nearly 2,000 acres of city parks; and a community recreation center. Several state parks are nearby, and it’s a very short drive to fishing, hunting, hiking, camping, boating, skiing or skating.

The Twin Cities of Minneapolis and St. Paul are only 80 miles north of Rochester. Among many attractions are the nationally famous Guthrie Theatre, the Minnesota Orchestra, the St. Paul Chamber Orchestra and the Walker Art Center. Both professional and collegiate baseball, football and basketball teams are based there. The Twin Cities also have world-class shopping and restaurants, including the Mall of America.

Good, moderately priced housing is relatively easy to find in Rochester. The public school system is one of the best in the state. Rochester has been selected as “one of the best places to live” in the U.S. by Money magazine for several consecutive years.

Close proximity between Mayo Clinic and home facilitates time with family and makes call from home quite manageable.
Appointments and Applications

Appointments to Mayo Clinic’s Fellowship Program in Critical Care Medicine are made on a competitive basis. Qualified applicants must be eligible for certification (or certified) in the specialty of anesthesiology or internal medicine.

To apply, you need to submit:

• A completed Mayo Graduate School of Medicine application form
• Official college, graduate school and medical school transcripts
• An official record of board scores (NBME, FLEX, USMLE, LMCC, VQE or FMGEMS)
• A dean’s letter and two other letters of recommendation
• A curriculum vitae
• A personal statement
• A valid ECFMG certificate (if you graduated from medical school outside of the U.S. or Canada)

Applications for each academic year, which begins in July, should be completed by October 15 of the previous year. Early application submission is encouraged. If you are considered for an appointment, you will be asked to visit Mayo Clinic Rochester for an interview with the program director and selected faculty. Interviews are conducted throughout each year.
Inquiries

If you would like an application form or more information, please contact either:

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For more information about the Mayo Graduate School of Medicine, please visit our Web site at http://www.mayo.edu/mgsm/gsm.htm

If you would like to discuss the Fellowship Program in Critical Care Medicine with Mayo Clinic alumni living in your area, please write to us for a list of their names.