

Welcome to the Critical Care Fellowship Program

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WELCOME

On behalf of the institution, the Department of Internal Medicine and the Division of Pulmonary and Critical Care Medicine, welcome to Hennepin County Medical Center. We are pleased you have chosen to train in our independent fellowship program with a twenty-plus year history of training intensivists in preparation for clinical academic and community leadership positions.

Fellows are responsible for knowing and adhering to the guidelines and policies included in this handbook. If any questions or concerns arise, fellows are expected to contact the Program Director.

MISSION STATEMENT

The core mission of the Internal Medicine Fellowship at Hennepin County Medical Center is to provide outstanding training in the practice of medicine by offering our fellows the opportunity to practice in an atmosphere of supervised autonomy and of scholarly

inquiry. Our faculty is committed to training professionally responsible physicians focused on patient care, medical education, and scholarship.

KEY CONTACTS

Section Office Telephone Numbers: phone (612) 873-2625, FAX (612) 904-4680.

CALL

The objective of on-call activities is to provide fellows with continuity of patient care experiences throughout a 24-hour period.

1. There is no in house call.
2. Continuous on-site duty will not exceed 24 consecutive hours. Fellows may remain on duty for up to 2 additional hours to participate in didactic activities, transfer care of patients and maintain continuity of medical care.
3. No new patients may be accepted after 24 continuous hours on duty. A new patient is defined as any patient for whom the fellow has not previously provided care.
4. At-home call (pager call) is defined as call taken from outside the hospital.
5. The frequency of at-home call is not subject to the every third night limitation. However, at-home call must not be so frequent as to preclude rest and reasonable personal time for each fellow. Fellows taking at-home call are provided with 1 day in 7 completely free from all educational and clinical responsibilities, averaged over a 4-week period.
6. When fellows are called into HCMC from home, the hours fellows spend in-house are counted toward the 80-hour limit.

LINES OF RESPONSIBILITY

ATTENDING PHYSICIAN

Supervision of all orders, procedures (when required or requested) and treatment plans

Daily examinations of each patient on census

Organization of teaching responsibilities

FELLOW (F1 AND F2)

Review of PGY1/2 daily assessment and plan – negotiation with attending for final therapeutic plan

At least daily examinations of each patient

Supervision of PGY1/2 review of all laboratory and radiology results

Discussion of therapeutic plan with consulting physicians

Direct teaching of residents, interns and medical students

In person walk-through and verbal sign-outs to on-call fellow each day

Attend and lead daily multi-disciplinary rounds M-F

Attend MICU QI meetings and weekly MICU management meetings (when not off site)

Provide critical care consultation all non-MICU service patients

Provide Pulmonary Consultation during on-call weekend

Assists in daily patient triage and in the MICU

Attend codes when in the hospital

Attend Staff Continuity Clinic when patients recently discharged from the MICU are seen

LEARNING OBJECTIVES

ACGME SIX GENERAL COMPETENCIES

The fellowship program requires our fellows to develop the competencies in the 6 areas below to the level expected of a new practitioner. Toward this end, we define specific knowledge, skills, and attitudes required for promotion and provide educational experiences as needed in order for our fellows to demonstrate the competencies.

PATIENT CARE: Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Fellows are expected to:

1. Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
2. Gather essential and accurate information about their patients
3. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
4. Develop and carry out patient management plans
5. Counsel and educate patients and their families
6. Use information technology to support patient care decisions and patient education
7. Perform competently all medical and invasive procedures considered essential for the critical care
8. Provide care aimed at preventing problems/complications of critical illness

9. Work with health care professionals, including those from other disciplines, to provide patient-focused care

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

Fellows are expected to:

1. Demonstrate an investigatory and analytic thinking approach to clinical situations
2. Know and apply the basic and clinically supportive sciences which are appropriate to their discipline

PRACTICE-BASED LEARNING AND IMPROVEMENT: Fellows must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.

Fellows are expected to:

1. Analyze practice experience & perform practice-based improvement activities using a systematic methodology
2. methodology
2. Locate, appraise, & assimilate evidence from scientific studies related to their patients' health problems
3. Obtain and use information about their population of patients and the larger population from which their patients are drawn
4. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
5. Use information technology to manage information, access on-line medical information; and support their own education
6. Facilitate the learning of students, fellows, peers and other health care professionals
7. Engage in clinically relevant research which will enhance the care of the critically ill patient

INTERPERSONAL AND COMMUNICATION SKILLS: Fellows must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates.

Fellows are expected to:

1. Create and sustain a therapeutic and ethically sound relationship with patients/families
2. Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
3. Work effectively with others as a member or leader of a health care team or other professional group

PROFESSIONALISM: Fellows must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

Fellows are expected to:

1. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development
2. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
3. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities

SYSTEMS-BASED PRACTICE: Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Fellows are expected to:

1. Understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice
2. Know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources

3. Practice cost-effective health care and resource allocation that does not compromise quality of care
4. Advocate for quality patient care and assist patients in dealing with system complexities
5. Know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance

COMPETENCY BASED EDUCATIONAL GOALS AND OBJECTIVES BY YEAR OF TRAINING

FELLOWSHIP YEAR 1

Patient Care

1. Capably care directly for up to 12 critically ill patients or supervise the care of up to 20 critically ill patients.
2. Perform competently all procedures essential for the practice of Critical Care Medicine.

Medical Knowledge

1. Maintain full command of key clinical details relevant to the care of critically ill patients in the intensive care unit.
2. Diagnose, treat and effectively support and monitor patients with shock, respiratory failure, life threatening infections and metabolic disorders.
3. Educate fellows and medical students under their supervision on topics relevant to critical care medicine.

Practice-Based Learning and Improvement

1. Able to locate, appraise, & assimilate evidence from scientific studies related to patients' health
2. Based on journal club experience, apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness

3. Use information technology to manage information, access on-line medical information; and support their life-long learning

Interpersonal and Communication Skills

1. Establish a therapeutic relationship with patients under their care
2. Use listening skills to effectively elicit a medical history and establish rapport
3. Communicate effectively with consultants from both medical and non-medical subspecialties involved in the care of critically ill patients.

Professionalism

1. Demonstrate sensitivity to patients from the wide variety of backgrounds that seek care at HCMC
2. Demonstrate commitment to life-long learning via attendance of at least 70% of the core conferences.

Systems-Based Practice

1. Understand the larger context in which they practice and how it affects their patients' care.
2. Advocate for quality patient care and assist patients in dealing with system complexities.

FELLOWSHIP YEAR 2

IN ADDITION TO OBJECTIVES FOR THE F1 YEAR, BY COMPLETION OF THE F2 YEAR, FELLOWS SHOULD BE ABLE TO PERFORM THE FOLLOWING:

Patient Care

1. Implement effective strategies to minimize complications and improve outcomes in critically ill patients.
2. Demonstrate capable and compassionate management of end-of-life issues in the critically ill patient.

Medical Knowledge

1. Demonstrate sufficient medical knowledge to pass the ABIM subspecialty certification exam in Critical Care Medicine.
2. Demonstrate an investigatory and analytical thinking approach to clinical situations.
3. Conduct clinical investigation in Critical Care Medicine.

Practice-Based Learning and Improvement

1. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies to determine whether it will alter their clinical practice.
2. Analyze practice experience and perform practice-based improvement activities using a systematic methodology.
3. Facilitate learning of other members of their health care team

Interpersonal and Communication Skills

1. Lead a team of attending physician, one PGY2 or 3, one or more PGY1's, and one or more medical students.
2. Work effectively as a leader and educator of non-physician members of the ICU health care team.

Professionalism

1. Demonstrate respect, compassion and integrity; a responsiveness to the needs of the patients that supersedes self-interest; accountability to the patients, society and the profession; and a commitment to excellence and ongoing professional development.
2. Demonstrate ability to work collaboratively and respectfully with a multidisciplinary health care team.

Systems-Based Practice

1. Know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources, particularly as it relates to management of the ICU.
2. Advocate for quality patient care and assist patients in dealing with system complexities.

3. Know how to partner with health care managers/providers to assess, coordinate and improve care in the ICU.

ROTATIONS

MASTER ROTATION SCHEDULE

<u>Year</u>	<u>Period</u>	<u>Rotation Name</u>	<u>Site</u>
FY-1			
1	1	Anesthesia	HCMC
1	2	MICU-CCU	HCMC
1	3	MICU-CCU	HCMC
1	4	MICU-CCU	HCMC
1	5	MICU-SICU	Methodist
1	6	MICU-SICU	Methodist
1	7	MICU-SICU	Methodist
1	8	MICU	UMMC
1	9	MICU	UMMC
1	10	Neuro ICU	ANW
1	11	Elective	HCMC
1	12	Clinical Research	HCMC
SSR-2			
2	1	MICU-CCU	HCMC

2	2	MICU-CCU	HCMC
2	3	MICU-SICU	Methodist
2	4	CCU	ANW
2	5	Elective	HCMC
2	6	Elective	HCMC
2	7	Clinical Research	HCMC
2	8	Clinical Research	HCMC
2	9	Clinical Research	HCMC
2	10	Clinical Research	HCMC
2	11	Clinical Research	HCMC
2	12	Clinical Research	HCMC

MEDICAL INTENSIVE CARE UNIT (MICU) HENNEPIN COUNTY MEDICAL CENTER

This document summarizes the organization of the fellow’s educational experience during the rotation, taught and supervised by the Division of Pulmonary and Critical Care in our program.

In an effort to comply with the Institutional and Program Requirements of the Essentials of Accredited Residencies in Internal Medicine Graduate Medical Education, the HCMC Fellowship Training program in Critical Care Medicine is organized to provide the intellectual environment, formal instruction, peer interaction and broad supervised clinical experience necessary for fellows to master the knowledge, skills, and attitudes **essential** to the practice of critical care medicine. Central to these goals, is the fellows’ attainment, at the level of a new practitioner, of the **six ACGME core competencies** in the areas of patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.

Common MICU conditions encountered: acute lung injury, circulatory shock, life-threatening infections, toxicological overdose, acute renal failure, acute and chronic liver failure, uncontrolled diabetes, life-threatening gastrointestinal bleeding, community acquired and nosocomial pneumonia, respiratory failure due to asthma and chronic obstructive lung disease, severe electrolyte disturbances. Less frequently encountered conditions encountered in the MICU: transplant related complications, hematologic malignancies.

Type of Clinical Encounters.

The MICU is a “closed unit” and patients are admitted to an MICU team. The MICU team provides primary direction for care of the patients encountered with the assistance of consulting medical and surgical specialty services. The exception to this is Nephrology patients admitted to the MICU, who typically remain on the Nephrology service with a mandatory consultation from the ICU fellow and attending.

WEEKDAY SCHEDULE

Intensive Care Rounds. Fellows pre-round on new admissions and patients with active issues requiring immediate attention. Morning rounds with the post-call attending’s teams will start at 8:00 am and typically last until 11:00. During rounds, the fellow should participate in discussion of assessment and plan, and provide teaching for the residents when appropriate. Following rounds with the post-call attending fellows will check with on-call attending and his/her teams regarding active patients, planned procedures etc. During the afternoon, fellows will evaluate new admissions, perform necessary procedures under the supervision of critical care staff when requested/required, and supervise resident patient care. There are no official afternoon rounds, but there should be a late afternoon communication between the fellow and attending to go over new admissions, key test results and to review to day’s events before the fellow goes home for the day. The attending will of course be available throughout the day to discuss any issues that arise and see patients when requested/required.

MICU Multidisciplinary Rounds (M-F, 1:30 - 2:00 pm). Fellows are responsible for leading multidisciplinary rounds, writing orders when required, and communicating issues that arise with primary team.

Morning Report, Critical Care conferences, and Department of Medicine (DOM) Conferences. All fellows are expected to attend the Department of Medicine Morning Report daily from 8:00 to 9:00 am, DOM topical conferences at noon, and are encouraged to attend Critical Care Conference on Thursdays from 2:00 pm to 3:30 pm.

Academic resources and activities. The main academic activity is teaching rounds in the Medical Intensive Care Unit (MICU) from 8:00am to 11:00 am each day. The fellow is provided with access to the web-based text Up-To-Date and Ovid Search in the intensive care unit as a resource for the rotation.

Call. Night call is from home, typically once or twice a week. There is no in-house call. Fellows will be called with all new admissions. Fellows are expected to come in to the hospital for any unstable or complex patient. Weekend call is every 2-3 weekends.

Patient Rounds

Monday -Friday	
7:00 – 8:00	Pre-rounding on new admissions and select old patients
8:00 - 12:00	Formal rounds with the ICU staff and teams.
12:00 -1:00	Departmental conferences.
1:00 – 4:00	Help in ICU, e.g. procedures, new patients

4:30 –5:30	Late afternoon ICU rounds, sign out to on call fellow.
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*On Call

Call is from home, very 2-3 weekends, and 1-2 weeknights/week

Conferences

Thursday, 2:00-3:30	Weekly Critical Care conference.
Wednesday, 12:00-1:00	Pulmonary/ID conference (1st and 3 rd Wednesday each month).
Wednesday, 7:30-9:00	Weekly Pulmonary/Critical Care conference (with FUMC Pulmonary/Critical Care fellows)

Meetings

Monday, 1:30-2:30	Weekly MICU policies meeting/MICU quality assurance
Wednesday, 1:00-2:00	Weekly MICU interdisciplinary rounds

LEARNING OBJECTIVES

- a. Evaluate patients in shock and other circulatory disorders and use both clinical assessment and data obtained from pressure monitoring systems: to correctly diagnose the underlying hemodynamic disturbance and apply physiologically sound therapy.
- b. Become familiar with the legal and ethical principles involved in decisions to withhold or withdraw life-sustaining treatments.
- c. Identify and treat simple and mixed acid-base disorders commonly seen in the ICU.
- d. Demonstrate an understanding of how to assess nutritional requirements and how to provide and monitor both enteral and parenteral nutritional support.
- e. Interpret hemodynamic waveforms obtained with a pulmonary artery catheter and recognize common pitfalls in hemodynamic monitoring.

- f. Use mechanical ventilation to support patients with acute respiratory failure due to a diversity of etiologies, recognizing the fundamental principles involved in the safe and effective use of this modality and its associated complications.
- g. Understand how to approach the diagnosis and therapy of common nosocomial infections in the ICU.
- h. Demonstrate appropriate use of sedative, analgesic and neuromuscular blocking agents.
- i. Evaluate and manage oliguria and electrolyte disorders in the critically ill patient.
- j. Become familiar with issues pertaining to ICU management, particularly patient triage, quality assurance, and protocol development.
- k. Demonstrate effective and appropriate communication skills with interdisciplinary personnel, patients and family members.
- l. Evaluate and manage sepsis including appropriate antibiotic choices and adjunctive therapies.
- m. Evaluate and manage overdoses and acute intoxication syndromes.
- n. Identify and manage common hematological and coagulation disorders in critical illness.

LOCATION

The principal setting for teaching will be the MICU, where teaching and patient care is integrally combined. Settings also include daily didactic sessions, scheduled conferences, and interaction with medical and non-medical specialty/subspecialty consultants.

PROCEDURES AND INTERPRETATIVE SKILLS.

The training program will provide opportunities for fellows to learn the performance, indications, contraindications, complications and limitations of the following critical care procedures:

a. Airway.

1. Maintenance of open airway in non-intubated, unconscious, paralyzed patients.
2. Intubation (oral, nasotracheal, fiberoptic).

b. Ventilation

1. Ventilation by bag and mask.
2. Initiation, maintenance and weaning of mechanical ventilation (invasive and noninvasive) using the common volume, time and flow-cycled ventilatory modes.
3. Use of reservoir masks and positive end-expiratory masks for delivery of supplemental oxygen, humidifiers, nebulizers, and incentive spirometry.
4. Management of pneumothorax (needle insertion and drainage systems)

5. Insertion of chest tubes and drainage systems.

c. Circulation

1. Basic and advanced cardiopulmonary resuscitation.
2. Arterial puncture and blood sampling.
3. Insertion of central venous, arterial, and pulmonary artery catheters.
4. Emergency cardioversion.
5. Use of portable bedside echocardiography to assess cardiac function.

d. Monitoring/bioengineering.

1. Utilization, zeroing, calibration of transducers.
2. Use of amplifiers and recorders.
3. Operation of bedside hemodynamic monitors.

e. Enteral and parenteral nutritional support.

f. Paracentesis/percutaneous needle aspiration.

g. Fiberoptic bronchoscopy and lavage in intubated patients.

h. Initiation and management of renal replacement therapy.

Additional key program content is provided by formal instruction (and clinical experience when possible – depending on patient mix) in the following areas:

Pharmacokinetics, pharmacodynamics, drug metabolism/excretion, and interpretation of antibiotic levels and sensitivities.

Management of critical illness during pregnancy.

Recognition/management of the critically ill victim of disaster, emphasizing those caused by chemical and biologic agents.

Pericardiocentesis.

Emergent transvenous pacemaker insertion.

EDUCATIONAL RESOURCES

A comprehensive textbook of Critical Care Medicine entitled Principles of Critical Care by Hall, Schmidt, and Wood will be the primary text that the fellow will use. On-line access to Chest, Intensive Care Medicine, the American Review of Respiratory and Critical Care Medicine, are available in the Pulmonary Offices. The hospital maintains a Medical Library in addition to readily available terminal access within the MICU for Up-To-Date and Ovid Medline Search, MicroMedics and other web-based medical search engines. Slides

presentations from the core lecture series and teaching videos on bedside echocardiographic interpretation are available on the computer for review. Trainees will review pertinent pathologic specimens from patients and the autopsy findings of patients who die in the ICU; in selected cases will attend the autopsy. Computerized virtual bronchoscopy will be used to teach basic bronchoscopic technique and airway anatomy. The fellowship uses simulation in the Interdisciplinary Simulation Center as an educational tool.

HENNEPIN COUNTY MEDICAL CENTER, ANESTHESIA ROTATION

The principal goal of the rotation in Anesthesia is to gain experience and competence in airway management. This will involve the use of bag and mask systems for ventilating patients, as well as use of basic techniques for intubation. Secondary goals include acquiring knowledge of common anesthetic drugs actions and side-effects.

Fellows see patients and participate in the anesthetic care of patients in the operating room under the supervision of anesthesiologists or nurse anesthetists, with a focus on acquiring airway management/intubation skills.

The types of disorders and patient characteristics are be those of the general surgical population at HCMC and would reflect the varied mix of patient backgrounds seen in the hospital at large. These have been included in more detail in the description of the MICU rotation. Of importance, the fellow will not be performing intubations in high-risk patients such as those with a very difficult airway. However, they will gain a better understanding of identification and management of difficult airways by the anesthetist.

LOCATION

Purple building, level 4 - HCMC

The principal setting will be the operating room and the teaching method will be direct supervision by a nurse anesthetist or anesthesiologist.

CONTACTS

Jackie Erickson, CRNA – 530-0156, Email: Jackie.erickson@hcmcd.org

HOURS

The rotation daily schedule Monday through Friday is 7:00 a.m. to 12:00 noon.

LEARNING OBJECTIVES

At the end of the rotation the fellow will be able to:

1. Adequately and safely ventilate and oxygenate a patient using an Ambu bag and facemask.
2. Be able to skillfully perform laryngoscopic intubation using both a curved Macintosh blade and a straight Miller blade.
3. Gain some exposure to alternative methods of airway management including the laryngeal mask airway and fiber optic intubation techniques. However, the fellow will not gain proficiency in these other methods.
4. To become more knowledgeable about the effects of common drugs used for induction in maintenance anesthesia and in particular their effects on the cardio respiratory system.

5. Learn how to better identify the patient with a difficult airway and to learn various methods to approach safe intubation in this setting.

EVALUATION

Fellow clinical performance focus

Faculty feedback

Interdisciplinary faculty meetings

Fellow evaluation of rotation

MEDICAL-SURGICAL INTENSIVE CARE UNIT ABBOTT NORTHWESTERN HOSPITAL

The rotations at the ANW Med-Surg ICU offer the Critical Care fellow an opportunity to see a wide spectrum of critically ill medical and surgical patients. Particular focus during the Neuro-ICU rotation in the FY-1 year will be on intensive care of the critically ill neurological patient. Fellows will have exposure and experience managing a wide variety of neurological problems including stroke, intracerebral hemorrhage and subarachnoid hemorrhage. The CCU rotation during the FY-2 year will focus on care of the critically ill cardiac patient including extensive exposure and management of post-op cardiac and vascular surgery and severe heart failure patients. In addition to the above mentioned emphasis, during both rotations the fellow will also have the exposure to other interesting critical care problems, both surgical and medical. Each of the Critical care faculty is dedicated to teaching this discipline, has passed the certifying examination in Critical Care given by the American Board of Internal Medicine, and conducts clinical research in this area.

We are fortunate to have an excellent array of support services in the ICU and all medical subspecialties are actively involved. Because of the multidisciplinary nature of critical illness, liberal subspecialty consultation is encouraged, and there is ample opportunity for the Critical Care fellow to interact with staff from the surgical subspecialties (general, orthopedic, cardiovascular, hepatobiliary, transplant, bariatric, neurosurgery, general and neurologic interventional radiology, urology). In addition, all medical subspecialties (i.e. cardiology, nephrology, pulmonary, infectious disease, gastroenterology, endocrine and oncology) and non medical specialty staff are immediately available for consultation.

CONTACTS

Station 20 main phone 612-863-4020

Sarah Pangarakis is our Clinical Nurse Specialist who assists us with our clinical issues.

Ramiro Saavedra Romero, MD, Staff Intensivist, Fellowship Director, ANW

Roman Melamed, MD, Staff Intensivist, Fellowship Director, email roman.melamed@allina.com

LOCATIONS

Stations 20, H4100 and H4200 Medical/Surgical ICU1

The principal setting for teaching will be the Medical-Surgical-Neurologic Intensive care Unit (Station 20). In addition, some patients will be located in the CCU (Station H4200) and Cardiovascular Surgical ICU (Station H4100). The teaching and patient care is integrally

Wednesday 12:00-1:00	Chest ID Conference, 1 st , 3 rd and 5 th Wednesday of the month- HCMC
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LEARNING OBJECTIVES

The overall educational goals of this rotation are to develop a current and in depth understanding of the care of medical and surgical critically ill adults with an emphasis on neurological and cardiac critical illness, and to provide clinical experience and foster proficiency in all aspects of medical and surgical post-operative critical care – cognitive, procedural, ethical and interpersonal. The skillful practice of Critical Care Medicine requires that the trainee acquire a broad knowledge base involving all of the traditional areas of Internal Medicine, as well as related disciplines such as Neurology, Anesthesiology, Nutrition, and Biomedical Ethics. The trainee should also acquire knowledge about, and clinical competence in, performing certain procedures that are essential to the skillful practice of Critical Care. These include, but are not limited to: arterial and central venous catheterization, placement and use of pulmonary artery catheters, chest tube placement and management, airway management including endotracheal intubation, and provision of mechanical ventilator support.

The ICU team consists of the Critical Care fellow and ICU attending.

As you become a part of the critical care team during your rotation at Abbott Northwestern Hospital, the critical care nursing leadership team/ICU attending would like to acquaint you with some of the routines of the units that may or may not be the same as you have encountered in other ICUs. Feel free to ask us questions or give us feedback as to how you feel things are going from your perspective as well. The primary goal of the Critical Care rotation is to provide a surgical critical care experience in a community based hospital. The fellow will care for a variety of patients with surgical critical illness under the direct supervision of the Abbott Northwestern Critical Care staff. Some patients are the primary responsibility of the fellow and staff; some are cared for on a consultative basis. When co-managing a case, discussion with the primary attending will determine the division of responsibility.

1. Procedures: Bronchoscopies and chest tubes require the personal attendance of the supervising ICU MD. To schedule a bronchoscopy in the ICU call the endoscopy line 33010 to coordinate time of the procedure. There is an emergency bronchoscope kept ready on Station 20. A portable ultrasound is available for vascular access. Interventional Radiology is available to assist if needed. We utilize full barrier technique for line insertions to minimize line infections.
2. Intubations: The fellow is allowed to perform intubations with supervision. Unless emergent, Anesthesia or Critical Care staff **should be present at the initiation of the intubation** to function as backup. If emergent, the intubation may be started with Anesthesia or Critical Care staff en route.
3. Evaluate patients in shock and other circulatory disorders and use both clinical assessment and data obtained from pressure monitoring systems: to correctly diagnose the underlying hemodynamic disturbance and apply physiologically sound therapy.
4. Become familiar with the legal and ethical principles involved in decisions to withhold or withdraw life-sustaining treatments.
5. Identify and treat simple and mixed acid-base disorders commonly seen in the surgical ICU patients.
6. Demonstrate an understanding of how to assess nutritional requirements and how to provide and monitor both enteral and parenteral nutritional support.
7. Interpret hemodynamic waveforms obtained with a central venous catheter and pulmonary artery catheter and recognize common pitfalls in hemodynamic monitoring.
8. Use mechanical ventilation to support patients with acute respiratory failure due to a diversity of etiologies, recognizing the fundamental principles involved in the safe and effective use of this modality and its associated complications.

9. Understand how to approach the diagnosis and therapy of common nosocomial infections in the SICU.
10. Demonstrate appropriate use of sedative, analgesic and neuromuscular blocking agents.
11. Evaluate and manage oliguria and electrolyte disorders in the critically ill patient.
12. Become familiar with issues pertaining to ICU management, particularly patient triage, quality assurance, and protocol development.
13. Demonstrate effective and appropriate communication skills with interdisciplinary personnel, patients and family members.
14. Evaluate and manage sepsis including appropriate antibiotic choices and adjunctive therapies.
15. Evaluate and manage critically ill patients with acute conditions requiring surgical management including but not limited to neurosurgery, general, hepatobiliary, bariatric and cardiovascular surgery.
16. Identify and manage acute neurologic disorders including cerebrovascular accidents, intracranial hemorrhages, seizures, neuromuscular conditions and head trauma.
17. Hemodynamic and ventilator management of the post operative patient
18. Evaluate and manage post-operative critically ill surgical patient.

PROCEDURES AND INTERPRETATIVE SKILLS.

The training program will provide opportunities for fellows to learn the performance, indications, contraindications, complications and limitations of the following critical care procedures:

A. Airway.

1. Maintenance of open airway in non-intubated, unconscious, paralyzed patients.
2. Intubation (oral, nasotracheal, fiberoptic).

B. Ventilation

1. Ventilation by bag and mask.
2. Initiation, maintenance and weaning of mechanical ventilation (invasive and noninvasive) using the common volume, time and flow-cycled ventilatory modes.
3. Use of reservoir masks and positive end-expiratory masks for delivery of supplemental oxygen, humidifiers, nebulizers, and incentive spirometry.
4. Management of pneumothorax (needle insertion and drainage systems).
5. Insertion of chest tubes and drainage systems.

C. Circulation

1. Basic and advanced cardiopulmonary resuscitation.
2. Arterial puncture and blood sampling.
3. Insertion of central venous, arterial, and pulmonary artery catheters.
4. Emergency cardioversion.

5. Use of portable bedside echocardiography to assess cardiac function.

D. Monitoring/bioengineering.

1. Utilization, zeroing, calibration of transducers.
2. Use of amplifiers and recorders.
3. Operation of bedside hemodynamic monitors.

E. Enteral and parenteral nutritional support.

F. Paracentesis/percutaneous needle aspiration.

G. Fiberoptic bronchoscopy and lavage in intubated patients.

Additional key program content is provided by formal instruction (and clinical experience when possible – depending on patient mix) in the following areas:

- A. Pharmacokinetics, pharmacodynamics, drug metabolism/excretion, and interpretation of antibiotic levels and sensitivities.
- B. Management of critical illness during pregnancy.
- C. Recognition/management of the critically ill victim of disaster, emphasizing those caused by chemical and biologic agents.
- D. Pericardiocentesis.
- E. Emergent transvenous pacemaker insertion.

EDUCATIONAL RESOURCES

A comprehensive textbook of Critical Care Medicine entitled Principles of Critical Care by Hall, Schmidt, and Wood will be the primary text that the fellow will use. Current issues of Chest, Intensive Care Medicine, the American Journal of Respiratory and Critical Care Medicine, and Critical Care Medicine are available on-line. The hospital has a Medical Library in addition to readily-available terminal access within the ICU for MD Consult, MicroMedics and other web-based medical search engines.

EVALUATION METHODS FOR FELLOW PERFORMANCE

Evaluation of fellow by faculty will occur through use of standardized residency evaluation forms. **The attending staff will discuss the end of rotation evaluation with the fellow on the last day of the rotation.** Informal assessment of the fellow by staff will also be done during rounds and during lecture presentations.

EVALUATION METHODS FOR ROTATION EFFECTIVENESS

The rotation is assessed in several ways. These include board scores in the subspecialty, fellow evaluations of the rotation, and by discussions and assessments of fellowship policy committee. We also use the results of the institutional internal review conducted by the GMEC (Graduate Medical Education Committee of HCMC). Finally, we utilize the results of the GMEC institutional survey of educational programs to modify curriculum and educational methods

This rotation offers to the Critical Care fellow an opportunity to see a wide spectrum of critically ill medical and surgical patients. Each of the Critical Care faculty is dedicated to teaching this discipline, has passed the certifying examination in Critical Care given by the American Board of Internal Medicine, and conducts and publishes clinical research in this area.

We are fortunate to have an excellent array of support services in the ICU and all medical subspecialties are actively involved. Because of the multidisciplinary nature of critical illness, liberal subspecialty consultation is encouraged, and there is ample opportunity for the Critical Care fellow to interact with staff from other medical subspecialties (cardiology, nephrology, pulmonary, infectious disease, gastroenterology and oncology) as well as with staff the non-medical specialty and subspecialty services. A strength of the rotation is the close interaction with General and Thoracic Surgery- we usually become involved with the complicated post-operative patients as they return to the ICU.

Common conditions encountered: acute lung injury, circulatory shock, life-threatening infections, toxicological overdose, acute renal failure, acute and chronic liver failure, uncontrolled diabetes, life-threatening gastrointestinal bleeding, community acquired and nosocomial pneumonia, respiratory failure due to asthma and chronic obstructive lung disease, severe electrolyte disturbances, critical illness following surgery including shock, ARDS, hemorrhage and multiorgan system failure. Less frequently encountered conditions encountered: transplant related complications, hematologic malignancies.

CONTACTS

Section Office Telephone Numbers: phone (952)993-3242 FAX (952)993-2828

Bronchoscopy: (952)993-5366

Sue Ravenscraft, MD- Medical Director Intensive Care

Niki Myers, MD – Fellowship Director

HOURS

Patient Rounds

Monday -Friday	
7:30 – 10:00	Pre-rounding on new admissions and select old patients
10:00 – 2:00	Formal rounds with the ICU staff and teams.
2:00 - 5:00	Help in ICU, e.g. procedures, new patients

*On Call Every 2-3 weekends, and 1-2 weeknights/week

Conferences

Thursday	Weekly Critical Care conference HCMC
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1:30 - 3:30	
Wednesday 8:00-9:00	Chest conference/Journal Club (Methodist-optional)
Wednesday 7:30 – 9:00	Weekly Pulmonary/Critical Care conference (with FUMC Pulmonary/Critical Care fellows)

Daily Activities

Intensive Care Rounds. The fellow will pre-round to see new admissions and old patients that are the most severely ill or that have active problems needing urgent attention. The fellow will then round with the ICU attending, ICU Pharm D, Respiratory Care and nursing will join on their patients. Afternoons should be spent attending to urgent patient issues, performing procedures, and seeing new admissions and discussing them with the attending. This time is also used to teach.

Night and Weekend Call. Night call is from home. Although whether or not the fellow needs to come into the hospital when called will depend on the specifics of the problem, often the fellow (and at times the staff) will need to come in. The fellow is encouraged to contact the on call staff to discuss difficult problems and new patients and/or request their presence. The fellow will be on home call for the ICU approximately 10 days during the month. These 10 days will include 2 weekends (Saturday and Sunday). There is staff backup at all times. The staff will field general ward calls, and new ward, ER, or Urgent Care consultations. Ward and outpatient phone calls are sent directly to the attending on call. The fellow is responsible for ICU coverage and will be notified by a consulting MD or the attending staff of a new after-hours consultation.

ACADEMIC RESOURCES

The fellow is provided with access to the web-based text UpToDate and on line journal provided through the library in the intensive care unit as a resource for the rotation.

2 NORTH/2 SOUTH—MEDICAL/SURGICAL ICU

As you become a part of the critical care team on 2 North during your rotation at Methodist Hospital, the critical care nursing leadership team/ICU attendings would like to acquaint you with some of the routines of the unit that may or may not be the same as you have encountered in other ICUs. Feel free to ask us questions or give us feedback as to how you feel things are going from your perspective as well. The primary goal of the Critical Care rotation is to provide a medical/surgical critical care experience in a community based hospital. The fellow will care for a variety of patients with critical illness under the direct supervision of the Park Nicollet Critical Care Medical staff. Some patients are the primary responsibility of the fellow and staff; some are cared for on a consultative basis. When co-managing a case, discussion with the primary attending will determine the division of responsibility.

1. *Procedures:* Bronchoscopies and chest tubes require the personal attendance of the supervising ICU MD. To schedule a bronchoscopy in the ICU page RT and if it is during the working day call endoscopy to determine the time and availability (3-5366). There is an emergency bronchoscope kept ready in the ICU storage. A portable ultrasound is available for vascular access. Interventional Radiology is available to assist if needed. We utilize full barrier technique for line insertions (hospital wide) to minimize line infections (attached)

2. *Intubations*: The fellow is allowed to perform intubations with supervision. Unless emergent, Anesthesia should be present at the initiation of the intubation to function as backup. If emergent, the intubation may be started with Anesthesia en route.
3. You will be encouraged to present an interesting case to the ICU staff (nurses, RT, Pharmacist, and MDs) sometime during your month with us. The presentation is informal (overheads are fine) and is meant to generate discussion and educate staff.
4. We have a dietician, chaplain, and a social worker who see patients either by referral or review charts with the nursing staff on a regular basis to find out what needs the patients have or whether the patient can move to the next level of care. Feel free to interact with them when they are on the unit.
5. *Call*: The fellow will be on home call for the ICU approximately 10 days during the month. These 10 days will include 2 weekends (Saturday and Sunday). There is staff backup at all times. The staff will field general ward calls, and new ward, ER, or Urgent Care consultations. Ward and outpatient phone calls are sent directly to the attending on call. The fellow is responsible for ICU coverage and will be notified by a consulting MD or the attending staff of a new after-hours consultation.

LEARNING OBJECTIVES

1. Evaluate patients in shock and other circulatory disorders and use both clinical assessment and data obtained from pressure monitoring systems: to correctly diagnose the underlying hemodynamic disturbance and apply physiologically sound therapy.
2. Become familiar with the legal and ethical principles involved in decisions to withhold or withdraw life-sustaining treatments.
3. Identify and treat simple and mixed acid-base disorders commonly seen in the ICU .
4. Demonstrate an understanding of how to assess nutritional requirements and how to provide and monitor both enteral and parenteral nutritional support.
5. Interpret hemodynamic waveforms obtained with a pulmonary artery catheter and recognize common pitfalls in hemodynamic monitoring.
6. Use mechanical ventilation to support patients with acute respiratory failure due to a diversity of etiologies, recognizing the fundamental principles involved in the safe and effective use of this modality and its associated complications.
7. Understand how to approach the diagnosis and therapy of common nosocomial infections in the ICU.
8. Demonstrate appropriate use of sedative, analgesic and neuromuscular blocking agents.
9. Evaluate and manage oliguria and electrolyte disorders in the critically ill patient.
10. Become familiar with issues pertaining to ICU management, particularly patient triage, quality assurance, and protocol development.
11. Demonstrate effective and appropriate communication skills with interdisciplinary personnel, patients and family members.
12. Evaluate and manage sepsis including appropriate antibiotic choices and adjunctive therapies.
13. Evaluate and manage overdoses and acute intoxication syndromes.

14. Identify and manage common hematological and coagulation disorders in critical illness.
15. Hemodynamic and ventilator management of the post operative patient
16. Evaluate and manage post-operative critically ill surgical patient.

PROCEDURES AND INTERPRETATIVE SKILLS.

The training program will provide opportunities for fellows to learn the performance, indications, contraindications, complications and limitations of the following critical care procedures:

A. Airway.

- Maintenance of open airway in non-intubated, unconscious, paralyzed patients.
- Intubation (oral, nasotracheal, fiberoptic).

B. Ventilation

- Ventilation by bag and mask.
- Initiation, maintenance and weaning of mechanical ventilation (invasive and noninvasive) using the common volume, time and flow-cycled ventilatory modes.
- Use of reservoir masks and positive end-expiratory masks for delivery of supplemental oxygen, humidifiers, nebulizers, and incentive spirometry.
- Management of pneumothorax (needle insertion and drainage systems).
- Insertion of chest tubes and drainage systems.

C. Circulation

- Basic and advanced cardiopulmonary resuscitation.
- Arterial puncture and blood sampling.
- Insertion of central venous, arterial, and pulmonary artery catheters.
- Emergency cardioversion.
- Use of portable bedside echocardiography to assess cardiac function.

D. Monitoring/bioengineering.

- Utilization, zeroing, calibration of transducers.
- Use of amplifiers and recorders.
- Operation of bedside hemodynamic monitors.

E. Enteral and parenteral nutritional support.

- F. Paracentesis/percutaneous needle aspiration.
- G. Fiberoptic bronchoscopy and lavage in intubated patients.
- H. Initiation and management of renal replacement therapy.
- I. Pharmacokinetics, pharmacodynamics, drug metabolism/excretion, and interpretation of antibiotic levels and sensitivities.
- J. Management of critical illness during pregnancy.
- K. Recognition/management of the critically ill victim of disaster, emphasizing those caused by chemical and biologic agents.
- L. Pericardiocentesis.
- M. Emergent transvenous pacemaker insertion.

EDUCATIONAL RESOURCES

A comprehensive textbook of Critical Care Medicine entitled Principles of Critical Care by Hall, Schmidt, and Wood will be the primary text that the fellow will use. Current issues of Chest, Intensive Care Medicine, the American Review of Respiratory and Critical Care Medicine, and Critical Care Medicine are available in the Pulmonary Offices. The hospital maintains a Medical Library in addition to readily-available terminal access within the MICU for UpToDate, MicroMedics and other web-based medical search engines.

MEDICAL INTENSIVE CARE UNIT (MICU) UNIVERSITY OF MINNESOTA MEDICAL CENTER

The MICU is a closed unit The UMMC MICU is a “closed” unit that consists of: 4th year medical student doing an MICU elective, 1-2 interns, 2 fellows, fellow and attending. All of the patients in the MICU are our primary patients except cardiology and any community patients. The fellow’s role in the MICU is to supervise the HO and students. The fellow will have the added individual responsibilities for: critical care consults, bronchoscopies and intubations. For all other procedures it is desirable for the HO and students to get experience and the fellow should teach and supervise the procedure. In addition, the fellow should assume a role of “teacher and supervisor” for the HO and students, including practical lectures and distributing pertinent articles. Remember, you no longer are the HO and they have to learn as well. You should review patient DDX, assessments and plans with the HO- but not assume the role of the HO.

Trainees are the primary physicians and are responsible for, under the direction of the teaching physician, all aspects of their patients’ medical care. Trainees conduct admission and then daily histories including obtaining histories from referring physicians, family members and nursing staff as patients are often unable to give reliable histories. Admission and interval physicals are directed to the major abnormal organ-systems. Daily review of all chest and abdominal x-rays are conducted with the teaching physician. Fellows are present for the fellow morning rounds presentations to the faculty, other fellows, students and clinical pharmacists who comprise the rounding team. Discussion about diagnostic testing, pathophysiology, medication selection, and patient disposition is facilitated by the teaching physician with the expectation that fellowship trainees can defend their decisions at a scientific level appropriate to their experience. Unanswered questions are researched by trainees with an in-unit textbook library and internet access to MDConsult and Up-To-Date reference sites. Fellows are particularly responsible for ventilator management including mode selection, ventilator adjustment and readiness for extubation. Trainees also learn by modeling faculty behavior at family meetings, care limitation discussions, removal of life support events and interactions with consulting physicians. Procedural skills such as central venous access, chest tube placement, right-heart catheterization and bronchoscopy are performed under the direct supervision of the teaching physician with an emphasis on patient safety and interpretation of post-procedural information. **MICU fellows are also responsible for initial and follow-up consultations for surgical ICU, ventilated cardiology patients and bone marrow transplantation patients with respiratory or critical care problems.** Fellows, depending on their level of training, also learn by teaching fellows and students critical care principles.

The strengths of this rotation derive from the true interdisciplinary nature of the MICU team including physicians, experienced nurses, clinical pharmacists, nutritionists and respiratory care practitioners. All of these people work in a compact area, just steps away from the Fellow's office located within the ICU. There is the opportunity to perform many procedures often in higher-risk patients than would be seen in the out-patient setting. UMMC has recently purchased numerous state-of-the-art mechanical ventilators that were specifically bought from a mix of different manufacturers so as to give maximum diversity of ventilator technologies to trainees. Fellows attend at least one Medical ICU Quality Improvement meeting which occur on a bi-monthly basis.

The Medical ICU admits patients with a wide variety of multi-system illnesses although respiratory failure, sepsis, acute neurological disease and liver failure predominate. Patients will be of all ages over 18 years and of both sexes. UMMC is a tertiary referral center and most patients are admitted from within the hospital, transferred from other medical centers for specialized care or, less frequently, admitted from the Emergency Department. Fellows' interactions with patients and families is broad as patients admitted to UMMC range from sophisticated, high-expectation medical consumers to disadvantaged, non English-speaking immigrants. Fellows are exposed to patients with advanced forms of common diseases such as emphysema and liver cirrhosis as well as patients who require specialized therapies such as lung, heart and blood transplantation, mechanical cardiac support devices and extracorporeal membrane oxygenation. In addition, patients with acute severe illness refractory to standard therapies are seen requiring specialized ventilatory strategies, uncommonly used medications or interventional radiology procedures. Severity of illness is higher than community Intensive Care Units with mortality averaging 12% over the last three years. Fellows gain valuable experience in treatment-limitation decision-making, family conferences and the process of support withdrawal.

LOCATIONS

The principal setting for teaching will be the ICU, where teaching and patient care is integrally combined. A second setting will be in the radiology suite where ICU films will be reviewed on a daily basis. Settings also include daily didactic sessions, scheduled conferences, and interaction with medical and non-medical specialty/subspecialty consultants.

CONTACTS

Phone numbers: (All hospital prefixes are 273)

- 4C 33043
- 4B 33042
- Endoscopy 34007
- Cytology 34179
- Surgery Path 35920
- Micro 33665
- PFT lab 35120
- X-ray file room 35777
- 4C procedure room 36653
- Paul or Bill (4C RT) pager 6971
- Med. Clinic nurses 626-0191

- Pulmonary office 624-0999
- Fellows’ room please contact Joan for the key.

HOURS

Weekday Schedule:

Patient Rounds

Monday -Friday	
6:30-7:45	pre-rounds by HO
7:45 am	X-ray rounds 4 th floor outside MICU
8:00 – 10:00 am	Formal rounds with the ICU staff and teams.
12:00 -1:00	Departmental conferences.
1:00 – 2:00 (M, F)	Teaching rounds
4:30 -5:30	Late afternoon ICU rounds, sign out to on call fellow.

*On Call Every 2 weekends, and 2 weeknights/week

Conferences

Wednesday 7:30-9:15 am	UMMC Pulmonary/Critical Care Fellow’s Case Conference and Core Curriculum Conference (venue changes every 3 months – VAMC, HCMC, UMMC, Regions).
Thursday 8:00-9:00	UMMC Dept. of Medicine Grand Rounds.
Thursday 2:00 – 3:30	Weekly Critical Care conference HCMC :
Friday 12 noon	UMMC Dept. of Medicine Morbidity and Mortality

LINES OF RESPONSIBILITY

We are responsible for all procedures: central lines, swan-ganz catheters, bronchoscopies, arterial lines, LP, paracentesis, thoracentesis. **The fellow coordinates all procedures. The attending must be present for the “critical portion” of the procedure. Please DO NOT perform procedures without proper supervision!!**

Supervision. All activities of the fellow are supervised by the Critical Care Staff Physician.

The fellow is responsible for supervision of patient care/procedures performed by fellows rotating on the MICU and teaching fellows regarding issues pertaining to intensive care medicine

Interactions with other services. Critical Care is multidisciplinary field and it is the responsibility of the fellows to directly communicate with consulting and referring services from the emergency services, surgery, and medical specialties.

LEARNING OBJECTIVES

- A. Evaluate patients in shock and other circulatory disorders and use both clinical assessment and data obtained from pressure monitoring systems: to correctly diagnose the underlying hemodynamic disturbance and apply physiologically sound therapy.
- B. Become familiar with the legal and ethical principles involved in decisions to withhold or withdraw life-sustaining treatments.
- C. Identify and treat simple and mixed acid-base disorders commonly seen in the ICU .
- D. Demonstrate an understanding of how to assess nutritional requirements and how to provide and monitor both enteral and parenteral nutritional support.
- E. Interpret hemodynamic waveforms obtained with a pulmonary artery catheter and recognize common pitfalls in hemodynamic monitoring.
- F. Use mechanical ventilation to support patients with acute respiratory failure due to a diversity of etiologies, recognizing the fundamental principles involved in the safe and effective use of this modality and its associated complications.
- G. Understand how to approach the diagnosis and therapy of common nosocomial infections in the ICU.
- H. Demonstrate appropriate use of sedative, analgesic and neuromuscular blocking agents.
- I. Evaluate and manage oliguria and electrolyte disorders in the critically ill patient.
- J. Become familiar with issues pertaining to ICU management, particularly patient triage, quality assurance, and protocol development.
- K. Demonstrate effective and appropriate communication skills with interdisciplinary personnel, patients and family members.
- L. Evaluate and manage sepsis including appropriate antibiotic choices and adjunctive therapies.
- M. Evaluate and manage overdoses and acute intoxication syndromes.
- N. Identify and manage common hematological and coagulation disorders in critical illness.

PROCEDURES AND INTERPRETATIVE SKILLS.

The rotation will provide opportunities for fellows to learn the performance, indications, contraindications, complications and limitations of the following critical care procedures:

Airway

1. Maintenance of open airway in non-intubated, unconscious, paralyzed patients.
2. Intubation (oral, nasotracheal, fiberoptic).

Ventilation

1. Ventilation by bag and mask.
2. Initiation, maintenance and weaning of mechanical ventilation (invasive and noninvasive) using the common volume, time and flow-cycled ventilatory modes.
3. Use of reservoir masks and positive end-expiratory masks for delivery of supplemental oxygen, humidifiers, nebulizers, and incentive spirometry.
4. Management of pneumothorax (needle insertion and drainage systems).
5. Insertion of chest tubes and drainage systems.

Circulation

1. Basic and advanced cardiopulmonary resuscitation.
2. Arterial puncture and blood sampling.
3. Insertion of central venous, arterial, and pulmonary artery catheters.
4. Emergency cardioversion.
5. Use of portable bedside echocardiography to assess cardiac function.

Monitoring/bioengineering.

1. Utilization, zeroing, calibration of transducers.
2. Use of amplifiers and recorders.
3. Operation of bedside hemodynamic monitors.

Enteral and parenteral nutritional support.

Paracentesis/percutaneous needle aspiration.

Fiberoptic bronchoscopy and lavage in intubated patients.

Initiation and management of renal replacement therapy.

Additional key program content is provided by formal instruction (and clinical experience when possible – depending on patient mix) in the following areas:

- Pharmacokinetics, pharmacodynamics, drug metabolism/excretion, and interpretation of antibiotic levels and sensitivities.
- Management of critical illness during pregnancy.
- Recognition/management of the critically ill victim of disaster, emphasizing those caused by chemical and biologic agents.
- Pericardiocentesis.
- Emergent transvenous pacemaker insertion.

EVALUATION METHODS FOR FELLOW PERFORMANCE

Evaluation of fellow by faculty will occur through use of standardized residency evaluation forms. **The attending staff will discuss the end of rotation evaluation with the fellow on the last day of the rotation.** Informal assessment of the fellow by staff will also be done during rounds and presentations. In addition, evaluation of fellow by nursing, RT, and senior MICU residents will occur using standardized forms.

EVALUATION METHODS FOR ROTATION EFFECTIVENESS

The rotation is assessed in several ways. These include fellow's confidential evaluations of the rotation, and by discussions and assessments of fellowship policy committee. We also use the results of the institutional internal review conducted by the GMEC (Graduate Medical Education Committee of HCMC). Finally, we utilize the results of the GMEC institutional survey of educational programs to modify curriculum and educational methods

RESEARCH

Consistent with ABIM requirements, each fellow is expected to complete a scholarly project over the course of their training and demonstrate productivity in research as defined by one or more of the following:

1. Published manuscript
2. Published abstract
3. Abstracts presented at national specialty meetings
4. Textbook chapters

Each fellow is assigned a project, a mentor, and a minimum of 6 months of protected, dedicated clinical research time to complete the project. Due to criteria for Medicare reimbursement, projects must be clinical research and be clearly linked to the patient care experiences of the fellow. Examples of work that meet this requirement include but are not limited to clinical patient studies in the ICU, chart reviews, and data analysis of existing information. Fellows will meet with their mentor monthly to assess progress, address problems, and help with analysis and writing. However, fellows will be expected to be the primary driver of the projects. Fellows will also periodically present their research project progress at core conferences dedicated to fellow research.

Fellows are encouraged to link with faculty mentors early to identify and discuss areas/topics of research. Most clinical projects require IRB approval, and enrolling critically-ill patients can be challenging, so consideration of projects should begin in the F1 year, and a project and mentor identified prior to early in the second half of the F1 year.

Financial support up to amount of \$1200 is available for travel and presentation of fellow's original research at an appropriate national sub-specialty meeting. Please notify the Program Coordinator of all presentations and publications so they may be placed in your file and be acknowledged in the IM Newsletter and the Department of Medicine Annual Report.

EVALUATIONS

EVALUATION OF FELLOW PERFORMANCE

The program is committed to the effective assessment of fellow performance throughout the program, and to the use of this assessment to provide meaningful guidance and timely feedback to the fellows.

While there are several mechanisms through which we assess fellow performance, the core assessment occurs through the following ways:

FACULTY EVALUATIONS:

Inpatient rotations: At the end of each fellow week rotation, faculty supervisors are required to provide written feedback to the fellows with specific questions about their competence in each of the six core competencies. They also are expected to provide face-to-face feedback.

NURSING, RCP AND RESIDENT EVALUATIONS (360 DEGREES EVALUATIONS)

HCMC Medical Intensive Care Unit (MICU): At the end of each MICU rotation, RCPs, residents, and MICU nurses evaluate fellows on their professionalism, interpersonal communication skills, and patient care.

The faculty inpatient evaluations are available for fellow review on-line upon completion of the evaluation. The MICU nursing evaluations are available for fellow review in their fellow folders.

The faculty and nursing continuity clinic evaluations are reviewed by the fellows upon completion.

All of these evaluations are reviewed by the Program Director with the fellow at the Semi-Annual Review.

SEMI-ANNUAL REVIEW:

Semi-annual meeting with the Fellow and Program Director which includes review of all evaluations, formal evaluations of knowledge, skills, and professional growth of fellow and required counseling by the program director.

PROCEDURE FOR APPEAL OF A NEGATIVE EVALUATION:

Each fellow has the right to appeal any negative faculty or nursing evaluation. They may make an appointment with the Program Director to discuss the evaluation. This appeal will be formally noted in the fellow file.

At the discretion of the Program Director and the fellow, the fellow can meet individually or in the Program Director's presence with the evaluating faculty member to discuss the evaluation.

GRIEVANCE PROCEDURE FOR ADVERSE ACTION

In accordance with HCMC institutional policy described in HCMC Fellow Reference Guide, fellows have the right to appeal an adverse action recommended by the Fellowship Monitoring Committee. Attempts shall be made to resolve any grievance with those directly involved. Fellows are encouraged to work out grievances with their program director or chief of service. If the outcome is unsatisfactory to the fellow, the fellow can refer the grievance to the Office of the Medical Director. Some items must be reported to the program director or medical director such as alleged harassment, suspected impairment or potential risk to patients or staff.

EVALUATION OF EDUCATIONAL EXPERIENCES

Fellows have the opportunity to evaluate the quality of their educational experiences. They are encouraged to provide informal feedback to the Program Director and are also regularly asked to provide such feedback in the following formal ways:

FELLOW EVALUATION OF FACULTY AND TRAINING EXPERIENCE:

At the end of each 1 month rotation, fellows complete an on-line evaluation of the effectiveness of their faculty supervisors and of the educational value of the rotation as a whole. These evaluations are released to evaluated faculty and site directors every 6 months. They are also reviewed by the Program Director. They are used for departmental performance evaluations and academic promotions, and for recommendations for attending assignments.

Fellow Surveys: The HCMC Graduate Medical Education Committee and the ACGME both administer yearly confidential surveys to all HCMC Critical Care Medicine Fellows. This information is presented to the Program Director and Fellowship Committee in aggregate and is used to design curricular change.

Semi-Annual Review an explicit purpose of the semi-annual review with the Program Director to provide a forum for direct feedback to the program leadership about any concern a fellow has with the Fellowship program.

SICK CALL AND BACK UP COVERAGE

A back-up policy is necessary to cover services in the case of an unplanned absence due to illness, emergency, etc. The small size of the program precludes a formal back-up schedule. Therefore, all fellows are **required to attempt to obtain coverage from a fellow on a non-call rotation in the event of an unanticipated absence. If this is not possible, the Admitting MICU Staff and the Program Director should be notified, and coverage will be arranged.** After more than three consecutive missed days, a fellow will require a physician's note and approval from the fellowship program director. Fellows may be expected to pay back coverage for sick days.

Providing back-up is not reimbursed as a moonlighting night. The absent fellow will be responsible for arranging pay-back with the covering fellow.

Back-up is designed for short-term absences. Coverage for absences for longer than 2-3 days will be at the discretion of the Program Director.

VACATION POLICY

Time away from the hospital is necessary for vacation, fellowship/employment interviewing and academic conferences. Prolonged periods of leave however, compromise the educational experience of the fellow taking leave, and burden the remaining fellows and services. This policy is an attempt to create a balance between necessary leave and educational goals, requirements for board certification, service responsibilities, and patient care.

On any given clinical rotation the total amount of leave taken (vacation + academic leave + interview days) may not exceed 25% of the entire days of that rotation. If >25% of a clinical rotation is missed **BECAUSE OF LEAVE TIME, THAT**

CLINICAL ROTATION MUST BE REPEATED PRIOR TO GRADUATION FROM THE PROGRAM.

VACATION

Three weeks of vacation are allotted for all Fellows. Back-to-back vacations affecting two consecutive rotations may be approved only under exceptional circumstances, pending review by the Program Director. Two weeks vacation from a single rotation would (in most cases) exceed 25% of the time devoted to that rotation, and therefore is not allowed. (Except on non-required rotations, e.g. Electives.)

Requests for vacation must be made IN WRITING to the Program Coordinator in the Pulmonary Critical Care Service Office at least SIX WEEKS in advance of the proposed leave. Conflicts among requests will be resolved on a first-come first-served basis.

Vacation requests must be approved by the Program Director and (if relevant) the Site Director.

Note

It is expected that the fellow arrange coverage for all vacations. This includes coverage for service rotations (all non-elective, non-research rotations) as well as any night and weekend call that would occur during that time. Fellows will be expected to re-pay the fellows who provide coverage.

It is preferable if vacations be taken during elective or research time, or during rotations at HCMC or ANWH, as it is easiest to find coverage in those situations. Vacations during rotations at Methodist and University hospitals are discouraged because of difficulties arranging/coordinating coverage and pay-back. If a vacation is desired during one of these rotations, it is best to plan early, and contact the Site Directors as soon as possible.