# University of Minnesota and Affiliated Hospitals

## Hematology and Medical Oncology Fellowship Program Curriculum

[www.med.umn.edu/hot/trainingprograms/fellowship/fellowscurriculum/home.html](http://www.med.umn.edu/hot/trainingprograms/fellowship/fellowscurriculum/home.html)

### 2014-2015

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I. HISTORY OF THE HEMATOLOGY AND MEDICAL ONCOLOGY FELLOWSHIP TRAINING PROGRAM

The University of Minnesota has been training fellows for careers in Hematology and Oncology for over 30 years. However, prior to 1993, the training programs for Hematology and Medical Oncology were separate and distinct programs.

Harry Jacob, M.D. began the Hematology training program in 1970 as Head of the Division of Hematology from 1968 to 1997. In 1974, the program was a recipient of a National Institute of Health Training Grant that continues to this day. This the longest existing training grant in Hematology in the United States. Dr. Jacob served as the President of the American Society of Hematology in 1999, and continues to be involved in teaching activities of the fellowship program.

B.J. Kennedy, M.D. founded the Division of Oncology at the University of Minnesota in 1968 and the Oncology training program. Known internationally as the “Father of Medical Oncology,” Dr. Kennedy served as President of the American Association of Cancer Education in 1982, President of the American Society of Clinical Oncology in 1988, and was instrumental in defining both the subspecialty and training requirements for oncology fellowship programs until his death in 2003 from multiple myeloma.

In July 1994, the fellowship programs of the respective divisions were combined into a single training program; four years later the respective divisions combined. Since 1998, the fellowship program director has been Linda Burns, M.D., with Philip McGlave, M.D. as the Head of the Division of Hematology, Oncology and Transplantation. On July 1, 2013, Daniel Weisdorf, M.D. became the interim Head of the Division of Hematology, Oncology and Transplantation and Brian McClune, D.O. has become the new fellowship program director beginning academic year 2014. The strong record of training excellence has continued. To date, over 290 fellows have completed fellowship training at the University of Minnesota, with over 80% continuing in academic careers. Approximately 15 graduates of our program lead hematology/oncology programs at other institutions.
II. TRAINING Requirements

A. American Board of Internal Medicine Training Requirements for Subspecialty Board Certification

The fellowship program adheres to the policies of the American Board of Internal Medicine in order to meeting training requirements:

AMERICAN BOARD OF INTERNAL MEDICINE (ABIM)
510 Walnut Street, Suite 1700
Philadelphia, PA 19106-3699
(215) 446-3500 or (800) 441-2246
FAX (215) 446-3470

Training requirements can be found on their website by logging on to www.abim.org. Fellows are encouraged to read and become familiar with the requirements. Please note that successful completion of the program includes one month of annual leave, as detailed below.

Combined Training Leading to Dual Certification

Dual certification in Hematology and Medical Oncology requires three years of full-time combined fellowship training which must include (a) a minimum of 18 months of prospectively designed full-time clinical training with patient care responsibility, (b) a minimum of 12 months in the diagnosis and management of a broad spectrum of neoplastic diseases including hematological malignancies, and (c) a minimum of six months of training in the diagnosis and management of a broad spectrum of non-neoplastic hematological disorders. The outpatient clinic assignment may change every six months throughout the training period.

Full-time clinical training is defined as at least 80% of the trainee's professional time during a working week dedicated to clinical (patient care or educational) activities. During the entire three years the candidate must attend at least one outpatient clinic for a minimum of one half-day per week and have responsibility for providing continuous care to a defined cohort of patients being managed for neoplastic and hematological disorders.

The ABIM recommends that combined training be taken in programs in the same institution which is accredited in hematology and medical oncology by the ACGME, The Royal College of Physicians and Surgeons of Canada, or the Professional Corporation of Physicians of Quebec. If circumstances dictate that this training be taken in two different programs, 24 continuous months must be in one institution, and both institutions must be accredited in hematology and medical oncology.

Candidates must complete all three years of required combined training before being admitted to an examination in either subspecialty. Candidates who have completed all three years of required combined training may take the Hematology Examination and the Medical Oncology Examination in the same or different years. We encourage our trainees to take both subspecialty board examinations.
B. Accreditation Council for Graduate Medical Education (ACGME)

The fellowship program adheres to the policies of the ACGME in order to meet training requirements effective July 1, 2013 that can be found at: http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/155_hematology_oncology_int_med_2016.pdf

A minimum of 18 months must be devoted to clinical experience, of which nine months must be in hematology and nine months in medical oncology. At least 50% of the medical oncology clinical experience must occur in the outpatient setting. The program must provide at least one month of clinical experience in autologous and allogeneic transplantation.

Patients must be responsible for four to eight patients during each half-day continuity clinic session.

III. Overall Goals and Educational Objectives

Goals: To master the basic pathophysiologic principles of hematology and/or medical oncology, be clinically competent in the care of patients with benign and malignant hematologic disorders and/or neoplastic disorders, be competent in the procedural and technical skills required in the evaluation and care of these patients, and to acquire skills necessary for the critical evaluation and interpretation of basic and/or clinical research in the field.

Educational Objectives:

A. Medical Knowledge - demonstrate understanding of:

Hematology and Medical Oncology

1. The scientific method of problem solving and evidence-based decision making
2. Relevant chemotherapeutic drugs, biologic products, and growth factors and their mechanisms of action, pharmacology, pharmacokinetics, clinical indications and limitations, including their effects, toxicity, interactions, and limitations
3. Multiagent chemotherapy protocols and combined modality therapy for hematopoietic and lymphopoietic malignancies and/or neoplastic disorders
4. Principles and application of radiation medicine to hematopoietic and lymphopoietic malignancies and/or neoplastic disorders
5. Management of the neutropenic and/or immunocompromised patient including management of infections and nutrition support
6. Allogeneic and autologous hematopoietic cell transplantation and the nature and management of post-transplant complications
7. Principles, indications for, and complications of peripheral stem cell harvests
8. Pain management in patients with blood disorders and/or neoplastic disorders
9. Concepts and application of hospice, palliative and home care to include management of pain, anxiety and depression; rehabilitation and psychosocial care
10. Diagnosis and management of paraneoplastic disorders
11. Human immunodeficiency virus-related malignancies
12. Demonstrate understanding of clinical epidemiology and medical statistics, including clinical study and experimental protocol design, data collection, and analysis
13. The function of a tumor board, and participate in one
14. Relevant hematologic and oncologic emergencies and management
15. Care of the geriatric patient with malignant and hematologic disorders
16. Use of hematologic, infection and nutrition support
17. Basic principles of laboratory and clinical testing, quality control, quality assurance, and proficiency standards
18. Malignant and hematologic complications of organ transplantation
19. Gene therapy

Hematology
1. Morphology, physiology, and biochemistry of blood, marrow, lymphatic tissue, and the spleen
2. Related basic fields, including immunology, basic and clinical pharmacology and pharmacokinetics, cell and molecular biology, tumor immunology, molecular genetics, and prenatal diagnosis
3. Molecular and pathophysiologic mechanisms, diagnosis, and therapy of diseases of the blood, including anemias, diseases of white blood cells, and disorders of hemostasis and thrombosis
4. Etiology, epidemiology, natural history, diagnosis, pathology, staging, and management of neoplastic diseases of the blood, blood-forming organs, and lymphatic tissues
5. Immunophenotyping, cytochemical studies, and cytogenetic and DNA analysis of neoplastic disorders of blood, blood-forming organs, and lymphatic tissues
6. Molecular mechanisms of hematopoietic and lymphopoietic malignancies, including the nature of oncogenes and their products and cytogenetics
7. Hemostasis and thrombosis for both congenital and acquired disorders and regulation of antithrombotic therapy
8. Treatment of patients with disorders of hemostasis and the biochemistry and pharmacology of coagulation factor replacement therapy
9. Transfusion medicine, including the evaluation of antibodies, blood compatibility, and the use of blood-component therapy and apheresis
10. Indications and application of imaging techniques in patients with blood disorders
11. Effects of systemic disorders and drugs on the blood, blood-forming organs, and lymphatic tissues

Oncology
1. Etiology of cancer, including predisposing causal factors leading to neoplasm
2. Fundamental concepts of the related fields of cellular and molecular biology, cytogenetics, immunology, basic and clinical pharmacology, pharmacokinetics, toxicity, and tumor immunology
3. Etiology, epidemiology, and natural history of cancer
4. Diagnosis, pathology, staging, and management of neoplastic disorders
5. Immune markers, immunophenotyping, cytochemical studies, and cytogenetic and DNA analysis of neoplastic disorders
6. Molecular mechanisms of neoplasia, including the nature of oncogenes and their products
7. Principles of gynecologic oncology
8. Pathophysiology and patterns of tumor metastases
9. Indications and application of imaging techniques in patients with neoplastic disorders
10. Demonstrate understanding of the principles, indications, and limitations of surgery and radiation therapy in the treatment of cancer
11. Rehabilitation and psychosocial aspects of the clinical management of the cancer patient
12. Prevention, evaluation, diagnosis, and cancer staging (including neoplastic disorders of the lung, gastrointestinal tract, breast, pancreas, liver, testes, central nervous system, head and neck, endocrine organs, skin, genitourinary track, cancer family syndromes and gynecologic malignancies).
13. Cancer Prevention and Screening, including periodic health examination and cancer prevention; counseling to promote healthy behaviors/modification of risk factors and increase patient compliance with preventive health behavior and treatment regimens; genetic testing counseling

B. Patient Care: Provide care to patients with hematologic and/or oncologic disorders in the ambulatory care setting and in-hospital setting that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health. 

1. Interpersonal skills with patients and health providers
   a) Establish a personal relationship
   b) Ascertain patient goals
   c) Ascertain patient compliance
   d) Effectively communicate plan of treatment
2. Function effectively as a member of an interdisciplinary health care team - this includes knowing when a team approach is particularly necessary, participating in constructing a treatment and intervention strategy for patients, facilitating effective consultations, demonstrating knowledge of teaming behavior and knowledge of role and function of each discipline in the care of patients
3. Gather pertinent information
   a) Medical interview skills
   b) Selective and efficient use of physical examination skills
   c) Selective and efficient use of laboratory and radiologic tests
   d) Use of patient’s records and other clinical information sources
   e) Time management skills
4. Documentation of patient encounter in a timely manner
   a) Patient history and physical data
   b) Laboratory/radiologic data
   c) Formulation of treatment plans
5. Documentation and clarity of medications, including chemotherapy, antibiotics, blood products, growth factors prescribed and/or administered
6. Planning and coordinating follow-up care
   a) Knowledge of referral mechanisms
   b) Knowledge of extended care systems including home based care
7. Demonstrate ability to act as a patient advocate
8. Demonstrate competence in the practice of health promotion, disease prevention, diagnosis, care and treatment of patients of each gender from adolescence to old age, during health and all stages of illness
9. Care of patients with HIV-related malignancies
C. 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. Identify strengths, deficiencies and limits in one’s knowledge and expertise
2. Set learning and improvement goals
3. Identify and perform appropriate learning activities
4. Systematically analyze practice experience using quality improvement methods, and implement changes with the goal of practice improvement
5. Incorporate formative evaluation feedback into daily practice
6. Locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems.
7. Obtain and use information about their own population of patients and the larger population from which their patients are drawn.
8. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
9. Use information technology to manage information, access on-line medical information, and support their education
10. Participate in the education of patients, families, students, fellows and other health professionals
11. Obtain procedure-specific informed consent by competently educating patients about rational, technique, and complications of procedures

D. Interpersonal and Communication Skills

Fellows must demonstrate interpersonal and communication skills that result in effective information exchange and collaboration with patients, their patients families, and health professionals.

Fellows are expected to:
1. Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds
2. Communicate effectively with physicians, other health professionals, and health related agencies
3. Work effectively as a member or leader of a health care team or other professional group
4. Act in a consultative role to other physicians and health professionals
5. Maintain comprehensive, timely and legible medical records
6. Demonstrate team leadership skills and ability to work with an interdisciplinary team
7. Create and sustain a therapeutic and ethically sound relationship with patients
8. Consultative skills:
   - Request effective consultation: Differentiate consultative opinion and consultative management; identify clear and specific question(s) for the consultant; provide necessary clinical information to the consultant; set specific timetable for completion of the consultation; communicate results to the patient
• Deliver effective consultation: Communicate directly and effectively with person requesting consultation; review patient’s total database; provide prompt response including recommendations; identify responsibility for execution of plan/follow-up

E. Professionalism and Humanistic Behaviors – demonstrate:

1. Compassion, integrity and respect for others
2. Be responsive to patient needs that supersedes self-interest
3. Respect for patient privacy and autonomy
4. Committed relationships as basis of practice
5. Availability and accessibility
6. Cooperation with nursing and other health professionals
7. Need to resist demands for inappropriate care
8. Care/comfort in addition to other treatments
9. Communication with patient and other health care providers.
10. Include social/spiritual setting in care plan
11. Understanding of need for personal development, attitudes, and coping skills of physicians and other health-care professionals who care for critically ill patients.
12. Demonstrate sensitivity and responsiveness to patients’ culture, age, gender and disabilities.

F. Medical Ethics

1. High standards of ethical behavior, including maintaining appropriate professional boundaries and relationships with other physicians and other health care team members, and avoiding conflicts of interests
2. Personal development, attitudes, and coping skills of physicians who care for critically-ill patients
3. Promote patient autonomy in decision making
4. Preserve confidentiality of information
5. Help patients consider/select advance directives
6. Principles of informed consent
7. Malpractice and other grievance procedures
8. Facilitate appropriate termination of doctor-patient relationship and transfer of care
9. Define death, persistent vegetative state
10. Reproductive issues as they pertain to the management of patients with hematologic and oncologic disorders and the side effects of therapies
11. Demonstrate skill in delivery of prognostic information, as well as understand the principles of medical futility

G. Systems-Based Practice

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to call effectively on other resources in the system to provide optimal patient care.
Fellows are expected to:
1. Work effectively in various health care delivery settings and systems relevant to their clinical specialty
2. Coordinate patient care within the health care system relevant to their clinical specialty
3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population based care as appropriate
4. Advocate for quality patient care and optimal patient care systems
5. Work in interprofessional teams to enhance patient safety and improve patient care quality
6. Participate in identifying system errors and implementing potential systems solutions

H. Technical and Other Skills – Fellows must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the practice.

Hematology -Oncology
1. Assessment and interpretation of a complete blood count, including platelets and white cell differential, by means of automated or manual techniques, with appropriate quality control
2. Bone marrow aspiration and biopsy, including examination and interpretation of peripheral blood smears, bone marrow aspirates, and touch preparations and interpretations of bone marrow biopsies
3. Performance of lumbar puncture and access and care of Ommaya reservoir with interpretation of cerebrospinal fluid evaluation
4. Use of chemotherapeutic drugs, biologic products, and growth factors; their mechanisms of action, pharmacokinetics, clinical indications and limitations, including their effects, toxicity and interaction
5. Use of hematologic, infection and nutrition support
6. Administration of chemotherapeutic agents and biological products through all therapeutic routes
7. Management and care of indwelling venous access catheters
8. Correlation of clinical information with the findings of cytology, histology, immunophenotyping, genetics and immunodiagnostics and diagnostic imaging
9. Indications for and application of imaging techniques in patients with neoplastic and blood disorders
10. Performance of lumbar puncture and interpretation of cerebrospinal fluid evaluation
11. Knowledge of the indications, complications and risks and limitation associated with thoracentesis, paracentesis, skin biopsies and lesion biopsies.

Hematology
1. Understand indications for the performance of therapeutic phlebotomy
2. Experience or observation in apheresis techniques
3. Interpretation of tests of hemostasis and thrombosis for both congenital and acquired disorders and regulation of antithrombotic therapy, including partial thromboplastin time, prothrombin time, platelet aggregation, and bleeding time as well as other standard and specialized coagulation assays Experience/observation of bone marrow or peripheral stem cell harvest for transplantation
4. Assessment of hematologic disorders by CT, MRI, PET scans and nuclear imaging techniques
**Oncology**

1. Serial measurement of palpable tumor masses by physical examination and tumor marker assays with correlation with diagnostic radiology findings and tumor markers in order to assess tumor burden and response to therapy

**IV. Specific Goals for Each Year of Training**

The Division offers a 3-year training program in hematology and medical oncology leading to eligibility for board certification in either subspecialty or both. The primary purpose of the fellowship is to provide training so that graduates of the program are qualified for highly productive careers in academic or academic-affiliated institutions or practice.

**A. Year 1:**

The goal of the first year of the training program is to provide a clinical environment for the fellow to develop skills and experience in the comprehensive care of cancer patients and in the diagnosis and management of hematologic diseases. The fellow will rotate on a monthly basis to clinical services at the University of Minnesota Medical Center (UMMC), Hennepin County Medical Center (HCMC), Regions Hospital, and the Veterans Administration Medical Center (VAMC). Each fellow is assigned a longitudinal clinic, typically at the VAMC. Longitudinal clinics are a minimum of 6 months in duration.

**Specific Goals for Year 1 are:**

- Learn the pathophysiologic principles and manifestations and complications of blood diseases and cancer
- Assess and manage patients with hematologic and/or oncologic disorders in the ambulatory care setting and in-hospital setting
- Learn how to request and deliver effective consultation
- Acquire a group of patients with whom the trainee can develop experience in the longitudinal care of patients with cancer and blood diseases
- Develop effective interpersonal and communication skills with patients and health care providers
- Understand the need for development of humanistic behaviors in the practice of medicine
- Learn the concepts of medical ethics, including an understanding of the psychological and social aspects of cancer and blood diseases
- Learn the epidemiology of cancer and blood diseases and the value and role of screening and detection in populations
- Develop competence in the performance of and interpretation of bone marrow aspiration and biopsy and other procedures required for the practice of hematology and medical oncology
- Develop the discipline and habits that will provide for a lifetime of self-education and clinical improvement
- Develop presentation and teaching skills
- Learn to interpret scientific literature through journal clubs, clinical seminar presentation, and case presentations on attending rounds
- Become competent in procedural skills, to include bone marrows, lumbar punctures, and administration of chemotherapy through all therapeutic routes.
• Work with the assigned first year advisor to identify a career path, complete a career development training plan, identify an area of research interest or scholarly activity, and select a mentor and career development committee.

B. Years 2 and 3:
Training during the second and third years will be individualized according to career goals. Each fellow will be required to prepare a Career Development Plan for review and approval by the Fellowship Committee in the spring by April 1. First year (01) fellows may request either the Academic Research Track or the Clinical Track for their second (02) and third (03) years of training. The tracks differ by career goals and emphasis on research and clinical training. All fellows will identify a Career Development Committee to assist them in developing a Career Development Plan to support their goals.

The Career Development Plan will be reviewed by the Fellowship Committee meeting. For the first year fellow entering training year 02, a final decision on training pathway assignment will be made by the Committee with mentors and fellow input. For the second year fellow entering training year 03, assignments will be based on the fellow’s progress in reaching required milestones.

Training Tracks
1. Academic Research Track: For fellows planning an academic research career (majority of time spent in research), this track focuses on research training in clinical/population science research or laboratory/translational research. Fellows considering this track will typically have prior research experience.
   • 18 months of dedicated research training (9 in fellowship year 02; 9 in year 03)
   • 18 months of clinical training (12 in fellowship year 01; 3 in year 02; 3 in year 03)
   • For those planning a career in clinical/population outcomes research, learning applicable basic research techniques is encouraged. Likewise, for a trainee planning a laboratory/translational research based career, exposure to early clinical trial design is recommended.
   • Graduate coursework may be incorporated depending on funding
   • Trainees are expected to present their work at division conferences and national meetings, publish their results, and seek independent research funding.
   • A fourth training year composed of 12 months of research training is strongly encouraged but is contingent upon performance and obtaining funding.

Required Milestones:
By the end of fellowship year 02:
• Submit one abstract to and attend a national scientific meeting
• Present a poster at the annual Department of Medicine Research Day
• Complete 3 months of clinical training in areas related to research interests

By the end of fellowship year 03:
• Submit one abstract to and attend a national scientific meeting
• Present a poster at the annual Department of Medicine Research Day
• Write and submit two manuscripts for publication.
• Write and submit a career development grant. Depending on circumstances this may be an application for a K award, an NRSA, or a Foundation Grant. Mentors will help guide these efforts. The final versions will be read and critiqued by the trainee’s Scholarship Oversight Committee as well as the Steering Committee. As stated previously, a fourth training year composed of 12 months of research training is strongly encouraged but is contingent upon performance and obtaining funding.
• Complete 3 months of clinical training in areas related to research interests

2. **Clinical Track:** For trainees planning a career with the majority of time spent in clinical care of patients, either in an academic/academic-affiliated setting or in private practice, this track focuses on developing the clinical skills of the trainee through a broad exposure to non-malignant hematology, hematologic malignancies and medical oncology and its related fields. This training will also include training on enrolling and caring for patients on clinical trials and the completion of a scholarly activity or research project.
• Clinical training will be individualized to each trainee’s goals and interests
• In addition to the 12 months of clinical training in year 01, clinical training will encompass the majority of training time in years 02 and 03 with a choice of multiple elective rotations and ambulatory experiences.
• Each trainee must complete a scholarly/research project. Up to 3 months may be spent on the project in year 02 (an additional 3 months may be requested in year 03 depending upon progress and career plans). Examples include case reports, reviews, quality improvement projects, curriculum development, enhancing skills through workshops and clinical/outcomes research projects that are feasible for the allotted time.
• Trainees are expected to present their project/research at division conferences. Presentations at national meetings and publishing project/research results are desirable but not required.

**Required Milestones:**

By the end of fellowship year 02:
• Complete 9-12 months of clinical training in the inpatient and outpatient settings in non-malignant hematology, hematologic malignancies and medical oncology and its related fields
• Attend an annual meeting (regional or national) in an area of interest to meet career goals
• Present scholarly project/research project at a Division conference

By the end of fellowship year 03:
• Complete 9-12 months of clinical training in the inpatient and outpatient settings in non-malignant hematology, hematologic malignancies and medical oncology and its related fields
• Attend an annual meeting (regional or national) in an area of interest to meet career goals
• If additional time has been spent in the conduct of a scholarly project/research project, the results will be presented at a Division conference and at Department of Medicine Research Day; submitting an abstract and presenting at a national meeting and publishing project/research results is desirable but not required.
**Career Development Committee:** Each fellow will identify a primary mentor from the senior faculty (the mentor may be from the Division of HOT or any Department on campus) as well as two additional faculty members to serve as secondary mentors on his/her Career Development Committee. If the primary mentor is not a member of the fellowship program faculty, then at least one of the additional faculty members must be part of the fellowship program. **The fellow is responsible for arranging Committee meetings on a quarterly basis to review progress and obtain feedback on career plans, research and scholarly projects.**

**Clinical training** will include additional inpatient and consultative months, plus elective rotations in molecular diagnostics, therapeutic radiation oncology, transfusion medicine, pain management/palliative care, coagulation/immunophenotyping, gynecologic oncology, ambulatory hematology and/or oncology, outpatient bone marrow transplantation, GU oncology, head and neck cancer, cell processing, and transfusion medicine. Other electives can be designed according to individual needs and interest.

**All fellows will be required to do a minimum of one rotation in hematology-pathology during their fellowship training.**

**Longitudinal continuity clinics** continue in years 2 and 3 with a minimum of 6 months in duration. Fellows may participate in more than one clinic/6 months during the second and third years of training, depending on their career goals and training needs.

**Specific Goals for Year 2:**
- Continue to learn the scientific basis of cancer and blood diseases, including pathogenesis, diagnosis, and management
- Have more exposure to a variety of longitudinal care clinics
- Begin a research or scholarly project with a designated mentor
- Learn academic writing skills

**Specific Goals for Year 3:**
- Develop a more mature understanding of cancer and blood diseases and clinical management
- Move toward independent clinical decision making in patient care
- Further develop research skills, if applicable according to training track
- Focus career plans and research goals
- Begin to write applications for career development awards if planning a research career

**Educational Materials:**

**American Society of Hematology (ASH)** – variety of educational materials are available on the ASH website, including the Image Bank, Teaching Cases, Timelines for MD trainees, Case Studies for Fellows, and PowerPoint Blood Smears. There is also information on grants and funding, the NHLBI eMentoring Initiative, Treatment Guidelines, and Career Development Programs.

[http://www.hematology.org/Training/](http://www.hematology.org/Training/)

**ASH-SAP**
Provided on-line by ASH to all first year fellows, and when new editions are published an on-line link is provided to all senior fellows. This is excellent review material as well as a source for an annotated bibliography in hematology.
American Society of Clinical Oncology (ASCO) – offers a variety of resources for fellows, including oncology references, grant opportunities, and a career center.

http://www.asco.org/professional-development/resources-fellows

ASCO- SEP
The Division will purchase the ASCO-SEP for each fellow as part of the ASCO Education Essential’s Program (also includes access to ASCO’s virtual meetings, the Geriatric Oncology Curriculum, Communicating Prognosis, and learning modules). All fellows must be members of ASCO as a requirement for purchase, so we will complete the arrangements for purchase after the first of July of the academic year.

We also participate in the ASCO Quality Oncology Practice Initiative (QOPI) for Fellows. This is an oncologist-led, practice-based quality improvement program whose goal is to promote excellence in cancer care by helping practices create a culture of self-examination and improvement.

V. Career Development Timeline

It is important for you to work closely with faculty members to identify your career goals as soon as possible during your fellowship training. A suggested timeline is given below.

**During year 01, based on stated interests in your fellowship application, an advisor will be assigned to you. You should contact your advisor and arrange to meet soon after the start of the academic year to discuss career goals and begin work on developing a plan to optimize your training experience. You should then meet with your advisor on a minimum of an every 3-month basis (and correspond monthly if at all possible). During these meetings your advisor will review your evaluations (every 6 months) and assist in career planning.** The duties of the advisor include: 1) Serve as an advocate for the fellow; 2) Advise about selection of career path and work with the fellow to select second/third year mentor; 3) Review fellow's personal training goals and strategies; 4) Review fellow's personal and professional progress during the first year of training; 5) Encourage self-reflection and a healthy lifestyle - and monitor fellow's stress on a continuing basis.

As soon as possible during the year, but no later than January 2014, you should work with your advisor to set up meetings with potential mentors for one of the two career pathways (Academic Research Track or the Clinical Track) for the second/third years of fellowship. You will need to identify a primary mentor and a minimum of two additional faculty members (Career Development Committee) to monitor the progress of your research and assist you in career planning during years 02 and 03. Mentors may have their academic appointments in any Division/Department on campus, but at least one of the three faculty members should hold their primary academic appointment in the Division of H.O.T. If you are planning on entering private practice, you may include a mentor in practice in the metro area (see Dr. McClune for details). You must submit to the Fellowship Committee your Career Development Plan by April 15. The Development Plan should include both an overall as well as detailed plan for your training in the context of your career goals.
In addition, Dr. McClune, Dr. Weisdorf, Dr. Vercellotti and all senior faculty members strongly encourage you to meet with them to discuss career goals during year 01 and throughout your training with us.

A. Year 01

- Become an associate member of ASH and ASCO. Visit the trainee section of the web sites frequently for training updates and notices about conferences and research award opportunities.
- Attend conferences within the division, department, cancer center, and undergraduate/graduate departments to gain exposure to research interests of faculty members.
- By January develop a vision of one’s clinical and scholarly life. Begin meeting and gathering information on potential mentors. Try to have your mentor identified by February of your first year so that you may begin to work with your mentor on outlining a specific research (research track) or scholarly (clinical track) project.
- Before you meet with a potential research mentor, do your homework. Know what the faculty member's research focus is, review at least one of their recent publications, and research the publication track record of other fellows who have worked with this mentor. Talk to other fellows who have worked with this faculty member to determine how supportive the mentor was and the degree of guidance offered to trainees.
- Trainees seeking an academic research career frequently benefit from an extra year of research training. Discuss this with your proposed research mentor, division and program directors.
- Consider applying for training in clinical/translational research workshops (i.e. explore ASH CRTI, ASCO/AACR, ASBMT research workshops). Information is available on the respective websites.
- Maintain a portfolio of your presentations

Suggested Questions for Potential Mentors:

- Who would provide me with direct supervision and teaching in the laboratory or clinical research setting?
- How often would I meet with you and in what setting?
- How many other members are in the research group? What are their various roles?
- How would my research or scholarly project be chosen? Would I be able to have input and/or choose between a number of possible projects? Or would I be expected or allowed to come up with a proposed project independently?
- Have any fellows who have worked with you gone on to independent research careers?
- How long do most trainees stay in your research group, and where do they go when they leave your research group? Into academic positions, industry or practice settings?

B. Year 02

- Work with your mentor and committee members closely - they are interested in helping you to achieve your career goals.
- Attend national research meetings (ASH/ASCO/AACR/ISEH/Gordon Conferences/Keystone Conferences/CIBMTR/ASBMT tandem BMT meetings). Ask
your mentor to recommend meetings that will expose you to the research in your field, and to assist you in networking when attending the meetings.

- Maintain a portfolio of your presentations
- Have explicit conversations with your mentor regarding eventual grant applications to fund your research (this will help you focus your thinking and will clarify expectations for both you and your mentor).
- Identify grant opportunities to apply for to fund your research. Nine months into year 02 is a reasonable time to start applying for grants.

- **ASH link to Grant Opportunities:** [http://www.hematology.org/Training/4056.aspx](http://www.hematology.org/Training/4056.aspx)
- **ASCO link to Grant Opportunities:** [http://www.conquercancerfoundation.org/](http://www.conquercancerfoundation.org/)
- Meet with your program director at least every 6 months regarding the quality of your mentoring and research experience.
- Begin to research job opportunities by the end of your second year of training. (Remember, if you are seeking an academic career, an extra year of training may be advised.)

- **ASH Job Bank (LINK: [http://jobcenter.hematology.org/](http://jobcenter.hematology.org/))**
- **ASCO Job Bank (LINK: [http://careercenter.jco.org/](http://careercenter.jco.org/))**
- **ASBMTCareer Center (LINK [http://www.jobtarget.com/home/index.cfm?site_id=327](http://www.jobtarget.com/home/index.cfm?site_id=327))**
- **American College of Physicians “How to write a CV and cover letter” (LINK: [http://www.acponline.org/counseling/timeline.htm#time2](http://www.acponline.org/counseling/timeline.htm#time2))**
- Take advantage of presentations at meetings that discuss job searching/interviews; they are very helpful in terms of knowing how to negotiate incentives, fringe benefits etc.
- Begin exploring job opportunities by the end of year 02
- Explore your eligibility for the NIH Loan Repayment Program that is available for fellows planning academic careers.

C. Year 03

- Update the portfolio of your academic or research talks that can be used on the interview trail.
- Decide what you will do after year 03 - Academics? Additional training? Industry? Private practice?
- Even if your preference is to stay at your own institution, seriously consider looking elsewhere. A potential drawback of staying at your own institution is that it is sometimes hard to establish yourself as independent from your previous mentor.
- Strive to give talks at other institutions and present abstracts at meetings. Use discussions about your work to explore the potential for a position at other institutions.
- Request a recruitment package from potential employers.

1. Are you seeking an Academic Career?

   a. **Questions to ask yourself:**
      - What do I want and need from my job?
      - Do I need to be working at a top-rated institution or would a less intense be acceptable or preferable?
• Do I want to devote myself exclusively to research or would I prefer some combination of research, teaching and clinical practice?
• Do I want or need to be in a particular area of the country?
• Will my personal responsibilities or my spouse’s professional needs set limits to my search?

b. Finding out about available positions:
• Job announcement letters sent to your department and program director
• Announcements (print and online) in major scientific journal (e.g. Cell, Science, Nature) and in publications devoted to Hematology (e.g. Blood)
• Web sites of academic institutions
• Employment bulletins, on-line job banks (ASH/ASCO/NEJM/Blood/JCO/BMT/research journals)
• Informal sources (supervisors, scientists, collaborators, former fellows)
• Narrow your search by finding out about: The institution’s mission, values, political/social climate, and quality (national, regional ranking); Department research activity, curriculum and collegiate atmosphere;
• Parameters and expectations of the position (e.g. whether it is a tenure track)

c. The job application:
• Prepare a cover letter; Update your curriculum vitae
• Obtain letters of recommendations;
• Prepare a talk describing your research activities in prevision of interviews

d. Negotiate your position:
• Obtain the details of the appointment (job title, length of the initial contract, terms under which contract will be renewed)
• The salary (is your salary paid by the institution or derived from your research grant)
• Other forms of compensation (e.g. health coverage, life insurance, moving expenses, housing subsidy, continuing education funds)
• Start-up package (lab space, equipment, computer, technician, other support staff)
• Teaching responsibilities
• Protected research time

e. Apply for transitional grants (e.g. K01, K02, K08, R03, R15, R21, K22, K23)
• The NIH career award wizard (LINK: http://grants1.nih.gov/training/kwizard/index.htm)
• Visual Guide to PhD NIH grants(LINK: http://grants1.nih.gov/training/kawardresearch.htm)
• Visual Guide to M.D. NIH grants (LINK: http://grants1.nih.gov/training/kawardhp.htm)

f. Determine eligibility for the NIH Load Repayment Program
• http://www.lrp.nih.gov/
2. **Are you seeking a career in industry/government/or private practice?**

   a. **Questions to Ask yourself:**
      - Do I prefer to work solo, in a small group, in a large group?
      - Do I want to practice at a single site, or am I willing to travel to satellite sites?
      - Do I only want to practice Hematology, Hematology and Oncology?
      - Do I want to participate in research?
      - How much Internal Medicine do I wish to do?
      - How much night/weekend call am I willing to take?
      - Do I want or need to be in a particular area of the country?
      - Will my personal responsibilities or my spouse’s professional needs set limits to my search?

   b. **Learning what is out there:**
      - Job announcement letters sent to your department and program director
      - Announcements (print and online) in journals and on-line (Blood, JCO)
      - Employment bulletins, job bank published by ASH/ASCO
      - Informal sources (former fellows)
      - Contact major practice groups in your region to see if they are planning to enlarge their practice group

   c. **Narrow your search by finding out about:**
      - The group’s mission, values, political and social climate, and reputation
      - Research activity, participation in cooperative groups
      - Parameters and expectations of the position

   d. **The job application:**
      - Prepare a cover letter
      - Update your curriculum vitae
      - Obtain letters of recommendations

   e. **Negotiate your position:**
      - Obtain the details of the appointment (job title, length of the initial contract, terms under which contract will be renewed)
      - Salary
      - Potential and details of partnership, ownership of practice
      - Other forms of compensation (e.g. health coverage, life insurance, moving expenses, housing subsidy, continuing education funds)
VI. Program Content

Description of Year 1

Fellows rotate on a monthly basis on clinical services at the University of Minnesota and each affiliate hospital. Rotations at the University include the inpatient hematology and oncology service, inpatient hematologic malignancy service, inpatient hematology and oncology consultation service and the inpatient Bone Marrow Transplant (BMT) service. The affiliated hospitals do not have any inpatient services (with the exception of the Red Service at the VAMC, primarily staffed by faculty and mid/level providers during weekdays with fellow coverage on weekends); rotations at each site are described in detail below. Each fellow is assigned a half-day continuity clinic at one of the training sites. Most first year fellows will be assigned to the VAMC for their continuity clinic.

UMMC:
The inpatient oncology and benign hematology service and the inpatient hematology malignancy service provide an opportunity for faculty and fellows to conduct clinical investigation in an inpatient setting with a highly professional nursing staff dedicated to optimizing patient support. The majority of patients will be admitted to this service from the Masonic Cancer Clinic. Some patients will be referred from other Fairview specialty clinics such as the Sickle Cell Clinic and Breast Center. In addition, other satellite Fairview clinics providing general hematology/oncology care, as well as community practice physicians in and outside of the metro area, will refer patients for admission when tertiary level care is needed. The medical teams meet with support personnel to review patient care management in a multidisciplinary fashion. The meeting includes pharmacy, registered dieticians, social services, physical/occupational therapy, chaplain, the unit charge nurse, care coordinator, and the patient navigator. In addition, consultation is available by various consultative services, including the separate Palliative Care and Pain Services, so that the fellow is exposed to aspects of pain management in patients with cancer and blood diseases.

The combined inpatient hematology and oncology consultative service is responsible for all inpatient consults on the UMMC and Riverside campuses. One HOT faculty staffs the hematology consult service, and another staffs the oncology consult service. The fellow will report to their respective staff. Oncology consults are to be staffed by the patient's outpatient medical oncologist when a consult is requested for an established clinic patient.

In addition, the consult fellow is responsible for any benign hematology consults from the UMMC inpatient heme malignancy or oncology and benign hematology services. These will be staffed with the benign hematology consult staff.

The benign hematology consults provide training in coagulation and hereditary and acquired bleeding disorders. The oncology consults cover all non-hematologic malignancies, and while on this rotation as time permits, the fellow is strongly encouraged to attend all of the weekly multidisciplinary tumor conferences, which include CNS, Gyn oncology, GI, breast, sarcoma, head and neck, and thoracic.
The Blood and Marrow Transplant Program is nationally and internationally recognized for the development of novel protocols that apply autologous bone marrow transplantation to the treatment of patients with lymphoma, leukemia and solid tumors. Allogeneic transplantation includes both sibling-matched transplantation, and unrelated donor transplantation from bone marrow, peripheral blood stem cells, and umbilical cords. Patients undergoing allogeneic transplant may have leukemia, lymphoma, myeloproliferative or myelodysplastic syndromes, Fanconi's anemia, aplastic anemia, or solid tumors. All patients are entered onto protocols to answer both disease specific and support specific questions.

Procedures performed by fellows include marrow aspiration/biopsy, intravenous and intrathecal chemotherapy, and blood and marrow morphology review. Fellows are instructed and observed performing all procedures, and fellows document the performance of procedures in E*Value. Fellows are expected to acquire knowledge of and skill in educating patients about the technique, rationale, and ramification of procedures and in obtaining procedure-specific informed consent. It is expected that by the end of year 1 fellows will have obtained competency in the performance of all procedures.

Affiliated training sites: The rotations at HCMC, Regions Hospital, and the VAMC include inpatient and outpatient diagnosis and management of a wide variety of cancers, malignant and non-malignant blood diseases, and coagulation/thrombotic disorders. HCMC and Regions Hospital are community-based hospitals that serve patient populations which are underrepresented at tertiary care centers.

Patient counseling skills are emphasized on every rotation and in the outpatient setting. Training includes cultural, social, family, behavioral, and economic issues, such as confidentiality of information, indications for life-support systems, and allocation of limited resources. Fellows are expected to understand the social and economic impact of their decision on patients, physicians, and society. The community-based hospitals aid greatly in the teaching of multi-cultural and socio-economic issues as they impact on patient care. On every rotation, training in practice-based learning, systems management, and quality improvement/quality assessment is incorporated in the day-to-day management of patients, as well as in the patient care conferences. On every rotation, patient counseling skills in the context of the process of attaining informed consent for participation in clinical protocols are emphasized.

Description of Years 2 and 3

Clinical Training: Additional clinical training is undertaken within years 02/03 to complete requirements for board eligibility. The fellow may elect to participate in several elective rotations. Trainees in their second and third years are given and should assume increased responsibilities for patient care and are expected to act as “junior attendings.” Fellows selecting the clinical track will have broad exposure to the depth and breadth of practice in hematology and oncology.

Research Training: Trainees choose their research area or scholarly project from among a wide variety of experiences both within and outside the Division. First year fellows start their formal planning process with their assigned first year advisor (assigned according to potential areas of interest at the beginning of year 01. Throughout the year, a research conference is held each Friday morning, where faculty within and outside the Division present their research. This conference provides an additional forum for fellows to be aware of and meet with faculty
performing research of interest to them. In consultation with the program director and members
of the fellowship committee and division, first year fellows are encouraged to talk in greater
depth with potential mentors within and outside the Division. The primary research mentor for
the second and third years of training, in conjunction with selected secondary mentors, is
responsible for ensuring the success of the research or scholarly project, assist and advise in
career planning, and ascertain that the fellow is making adequate progress towards completion
of fellowship training.

Those fellows who are selected to be supported by the division NIH training grant in
hematology (must be a US citizens or permanent residents and have significant potential for an
academic research career in hematology) have tuition support available through that grant
mechanism. 80% of the time must be spent in research while supported by the training grant.

VII. POLICY FOR FELLOW SUPERVISION AND GRADED RESPONSIBILITY

Philosophy on Professional Growth and Development: Fellowship training in our program is
designed to promote the professional growth and development of fellows from highly skilled
internists to highly skilled subspecialists. This occurs, in part, through the care of patients with
a spectrum of benign and malignant hematologic/oncologic disorders. It is our program's
philosophy that fellows learn best when they are as autonomous as their knowledge, skills and
attitude permit. The matrix below details the level of responsibility/autonomy by proficiency
level of the fellow.

Fellow Supervision: Our faculty members are ultimately responsible for the welfare and safety
of all patients, and thus will supervise all patient care encounters by our fellows in the
ambulatory and inpatient settings. Faculty members are on call and available 24 hours a day
and 7 days a week for supervision and consultation.

GRADED RESPONSIBILITY MATRIX:

<table>
<thead>
<tr>
<th>Clinical Activity</th>
<th>Level of responsibility/autonomy by proficiency level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beginning</td>
</tr>
<tr>
<td>Clinical data collection</td>
<td>Independent, with staff supplementation</td>
</tr>
<tr>
<td>Formulation of clinical assessments/plans</td>
<td>Jointly with staff</td>
</tr>
</tbody>
</table>
incorporates evidence based medicine and system based practices into improving self-practice of medicine

<table>
<thead>
<tr>
<th>Consultant: Communication of recommendations to primary care team/referring physician</th>
<th>Jointly with staff</th>
<th>Independent, with staff confirmation; independent utilization of evidence based medicine resources and sharing of information with primary team</th>
<th>Independent, with staff confirmation of selected issues; consistently incorporates evidence based medicine and system based practices into improving effectiveness of consultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor of care team</td>
<td>Jointly with staff; begins efforts at teaching other team members in subspecialty issues</td>
<td>Independent, with staff confirmation of patient care issues; increasing responsibility for teaching of team members</td>
<td>Independent, with staff confirmation of selected patient care issues; shared responsibility with staff for teaching of team members</td>
</tr>
</tbody>
</table>

**NON TEACHING PATIENTS POLICY:** The admission of and continued care of patients by fellows is limited to those on the Internal Medicine teaching services at all sites. The only exceptions are for emergency care of off-service patients in life-threatening situations. Inpatient teams with fellows and mid-level providers (but no residents/interns) are considered teaching services for fellows.
VIII. Required Rotations - General Description, Responsibilities and Educational Objectives

A. University of Minnesota Medical Center, Fairview (UMMC)

1. Hematology and Medical Oncology Inpatient Service (Unit 7D 273-3074)

   **Location:** University of Minnesota Medical Center, Fairview
   **Duration:** 1 month

   **Staff:** There is one benign hematology/medical oncology attending physician and one fellow directly supervising one or more mid-level providers. Each team oversees the care of patients with both hematologic and oncologic diseases. Any patients admitted in excess of the number of patients capably cared for by mid-level providers will be admitted by the fellow and faculty member with the assistance of the fellow. This is an elective rotation for residents.

   **Coverage:** The fellow is expected to arrive before sit-down rounds that begin at 8:30 am to assist the mid-level providers in any urgent care matters. The fellow should remain until the late afternoon/early evening until all immediate care matters are completed. A hospitalist (pager 6633) covers the patients from 3 – 11 p.m., and from 11 p.m. to 7 a.m. a moonlighter (pager 6633).

   **Call:** The fellow will rotate night and weekend call coverage for the inpatient and consult services with the UMMC Heme Malignancy, UMMC Hematology/Oncology consult and BMT fellow. The fellow will be on call for 2-3 weekend days/month. The attending physician is required, along with the fellowship director, to closely monitor duty hours, as well as for any evidence of fellow fatigue or stress. The back-up fellow or the attending physicians may need to take additional call to prevent fellow fatigue.

   **NOTE:** Patients cared for by practitioners at the Fairview Maple Grove Clinic are instructed to call here at night/weekends for medical assistance. You should handle their calls in the same manner as any other clinic patient. Their clinic notes/labs/x-ray reports are in EPIC and iSite as for any other Fairview patient. Dr. Elimelakh carries her pager and tells me that you may contact her with questions Monday-Friday 8 am – 5 p.m.; her pager is 1286; clinic phone is 763-898-1000. Otherwise, discuss the case with your on-call faculty attending and, if necessary, instruct the patient to come here to the ER for evaluation or admission. Please also put a note into EPIC regarding the patient encounter and route it to the patient’s clinic hematologist or oncologist.

   **General Description:**

   This monthly rotation includes the inpatient Benign Hematology and Medical Oncology service at UMMC. Patients are admitted to this service with a broad variety of hematologic and oncologic diseases, including non-malignant hematology (sickle cell anemia, hemophilia, etc.) and solid tumor oncology.

   **Fellow Responsibilities and Lines of Responsibilities within the Team:**

   **Note:** Also Refer to Faculty Supervision and Graded Responsibility, page 25, Fellowship Curriculum
Patient care: The fellow is responsible for assisting the attending in the overall clinical supervision and management of all patients. Patients admitted overnight by the hospitalist or moonlighter will be picked up by the mid-level provider in the morning on weekdays. On weekends, the fellow is expected to call the overnight moonlighter at pager 6633 and obtain signouts on current patients and holdovers. The fellow is expected to make rounds with the midlevel team and attending on a daily basis, and assist the mid-level providers throughout the day as needed. After sit-down rounds, the fellow and faculty will do “walk-rounds.” Following walk-rounds, the fellow is responsible for updating the mid-level providers on any new issues pertaining to their patients. The mid-level provider and/or fellow is responsible for communicating any multi-disciplinary issues to the multi-disciplinary team members and charge nurse.

Fellow level knowledge is crucial for optimizing patient care, and as the fellow progresses through his/her training, the fellow should take an increasing role for making care decisions – at first with faculty input, then less, and then as a third year fellow with minimal faculty input. The fellow should write chemotherapy orders with faculty supervision, perform (with faculty supervision until certified) all heme/onc procedures, and have ongoing knowledge of the patient's hematologic/oncologic status and care plans. The fellow should call the referring physician at any time there is an abrupt change in a patient’s condition, such as transfer to the MICU. (Note: the MICU assumes primary care of such patients, with the consult service assuming a consultative role.

An essential role of the fellow is the responsibility for ensuring that the discharge orders and plans are communicated to the primary physician and/or referring physician, and any follow-up orders conveyed to the outpatient Hematology/Oncology Clinic. The patient navigator on 7D will assist in this process.

The fellow should briefly review progress of the inpatients during "sign out" at the end of each day with the mid-level providers. The fellow should contact the attending physician at the end of the day and discuss any new issues. The mid-level providers will sign out their patients to the hospitalist or moonlighter. Any patients being cared for by the fellow/attending will be signed out to the hospitalist or moonlighter by the fellow.

Patients admitted in excess of the number able to be cared for by the mid-level(s) will be admitted and cared for by the fellow (up to 5-6 patients depending on level of acuity) with the assistance of the attending. Any patients in excess of this number will be admitted and cared for by the faculty attending physician. When the mid-level patient numbers decline, patients can be transferred to a mid-level provider’s care. The fellow is responsible for the primary care of up to 5-6 patients on the weekends with faculty oversight – these may be the fellow’s patients or the mid-level provider’s patients. However, it must be emphasized that the fellow is expected to know about all patients on the service.

Clinic triage: The fellow is responsible for assisting the clinic triage nurses in management of any patient issues for which the patient’s primary physician or mid-level provider is unavailable.

Teaching: The fellow is responsible for searching the medical literature and providing relevant references to the service, both for educational purposes and to facilitate care of patients with unusual problems. The fellow is responsible for teaching relevant procedures
and in assisting in procedures when necessary. The fellow is responsible for a minimum of one presentation/week during the rotation. The fellow should present interesting and/or difficult cases at the University Patient Conference (Wednesday noon conference) and any of the other relevant weekly tumor board conferences.

**Educational Objectives**

1. Demonstrate an understanding of allocation of resources that does not compromise quality of care as well as the role of each member of the health care team through active participation in at least 6 multidisciplinary health team rounds.

   **Evaluation:** Global rating by the attending staff

2. Critically review at least one article per week with the team (This review should take no longer than 15 minutes.)

   **Evaluation:** Global rating by the attending staff of teaching effectiveness; Review of the articles by the fellowship director at the semi-annual review. (The article is to be kept in the fellow's portfolio for review with the director.)

3. Demonstrate ability to lead a team in the effective delivery of health care.
   - By the end of the first rotation month, the fellow should be actively participating in attending rounds.
   - By the end of the second rotation month, the fellow should be leading both attending rounds and the interaction with the patient and family. The attending physician and the fellow will meet on at least one occasion to review the fellow's performance in leading rounds with the housestaff and in interacting/communicating with the patients and their families on team rounds.

   **Evaluation:** Global rating form by attending staff based on direct observation of the fellow’s performance. **One 360 degree evaluation** must be completed on each rotation with evaluation forms to be completed by nursing staff, social worker/discharge planners, residents, and at least 3 patients of the fellow’s choosing.

4. Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice.
   - During the first rotation month, the fellow will keep a log of night and weekend phone calls, and review at least 6 of them in-depth with the staff including patient concern, fellow assessment, and recommendation.
   - During the second rotation month on the rotation, the fellow will keep a log of night and weekend phone calls, and follow-up on at least 6 of them to determine clinical outcome.

   **Evaluation:** Global rating form by the attending staff and Review of the log by the fellowship director. (To maintain privacy, patient names should be removed/blacked out).

5. Maintain comprehensive, timely, legible, and appropriately detailed medical records.

   **Evaluation:** Staff will review 2 progress notes to ensure all relevant diagnostic, staging, and treatment information is properly delineated.
Educational Objectives in Hematology

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis, interpretation of test results, and management of patients with non-malignant hematologic disorders with a focus on:
   - Hemoglobinopathies
   - Bleeding and thrombotic disorders

Evaluation: In-training exam and global assessment by attending.

Conferences:
- HOT Patient Care Conference on Wednesday, noon. Attendance is mandatory. The fellow should be prepared to discuss cases of interest with the attendees.

Reading List:
1. Genetics and physical properties of hemoglobins.

2. Diagnosing sickle cell disease and recognizing clinical sequelae.

3. Role of RBC transfusion therapy & perioperative management

4. Role and use of fetal hemoglobin synthesis stimulators
   - Ware R E. How I use Hydroxyurea to Treat Young Patients with Sickle Cell Anemia. Blood. 2010; 115 (25): 5300-5311

5. Role and use of stem cell transplantation in the management of sickle cell anemia

6. Variant sickle cell syndromes

7. Management of acute and chronic pain (see above).

8. A video-intervention to improve clinician attitudes toward patients with sickle cell disease: the results of a randomized experiment.

Coagulation

Hematology Inpatient Service Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>PGY 4 (First year fellow)</th>
<th>PGY 5/6 (Second/third year fellow)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care</td>
<td>• Actively participate in at least 6 multidisciplinary health team rounds.</td>
<td>• Demonstrate ability to lead a multidisciplinary team in the effective delivery of health care.</td>
</tr>
<tr>
<td></td>
<td>• Write chemotherapy orders with faculty supervision.</td>
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<tr>
<td></td>
<td>• Understand and interpret CBC.</td>
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<tr>
<td></td>
<td>• Understand test results within the context of a patient’s diagnosis and treatment plans.</td>
<td></td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>• Begin to develop understanding of diagnosis and management of patients with hematologic disorders.</td>
<td>• Demonstrate expertise in the diagnosis and management of patients with hematologic disorders</td>
</tr>
<tr>
<td></td>
<td>• Participate in core lectures; critically review at least one article per week that pertains to a current patient problem with the team.</td>
<td></td>
</tr>
<tr>
<td>Practice Based Learning and Improvement</td>
<td>• Present cases at patient care conferences with assistance of faculty attending</td>
<td>• Present cases at patient care conference with minimal assistance by faculty attending</td>
</tr>
<tr>
<td>Interpersonal and Communication Skills</td>
<td>• Triage night and weekend phone calls with faculty assistance on the majority of calls.</td>
<td>• Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.</td>
</tr>
</tbody>
</table>
Professionalism

- Demonstrate ability to interact with all members of health care team, patients, and family members
- Demonstrate competence in all interactions with all members of health care team, patients, and family members

Systems-Based Practice

- Demonstrate understanding of health care resources in the University setting and begin to identify areas for improvement
- Demonstrate expertise in utilization of health care resources in the University setting and identify at least one area for improvement

Educational Objectives in Medical Oncology

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis and management of patients with solid tumor disorders with a focus on
   - Oncologic emergencies
   - Inpatient chemotherapy administration
     - Sarcomas
     - Melanoma (high-dose IL-2)
     - Renal cell carcinoma (high-dose IL-2)
   - Liver-directed therapies (i.e. chemoembolization, ethanol embolization)
   - Cancer and treatment related complications
     - Gastrointestinal malignancies
     - Thoracic malignancies
     - Breast cancer
   - Palliative care and transition to hospice

Evaluation: In-training exam and assessment by attending.

Conference:
- **Tumor Conferences**: The fellow should attend as many of the tumor specific conferences as possible

Reading List:

**HEAD AND NECK**

**Cetuximab**

Adjuvant


Induction


Chemoradiation with cisplatin


Non-Small Cell Lung Cancer

Metastatic


Maintenance

Targeted Therapy


EMERGENCIES


CHEMOTHERAPY DOSING

HIGH DOSE IL-2
Renal cell carcinoma


SUPPORTIVE CARE
NCCN Guidelines for Supportive Care
http://www.nccn.org/professionals/physician_gls/f_guidelines.asp#site

LIVER-DIRECTED THERAPIES
## Oncology Inpatient Service Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>PGY 4 (First year fellow)</th>
<th>PGY 5/6 (Second/third year fellow)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient Care</strong></td>
<td>• Actively participate in at least 6 multidisciplinary health team rounds.</td>
<td>• Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes for patients with solid tumors.</td>
</tr>
<tr>
<td></td>
<td>• Understand indications and side effects of chemotherapeutics for head and neck carcinomas, sarcomas, lung cancer and gastrointestinal malignancies</td>
<td>• Demonstrate ability to lead a multidisciplinary team in the effective delivery of health care.</td>
</tr>
<tr>
<td></td>
<td>• Understand test results within the context of a patient’s diagnosis and treatment plans.</td>
<td>• Maintain comprehensive, timely, legible, and appropriately detailed medical records.</td>
</tr>
<tr>
<td></td>
<td>• Maintain comprehensive, timely, legible, and appropriately detailed medical records.</td>
<td></td>
</tr>
<tr>
<td><strong>Medical Knowledge</strong></td>
<td>• Begin to develop understanding of diagnosis and management of patients with oncologic disorders.</td>
<td>• Demonstrate expertise in the diagnosis and management of patients with oncologic disorders</td>
</tr>
<tr>
<td></td>
<td>• Participate in core lectures; critically review at least one article per week that pertains to a current patient problem with the team.</td>
<td></td>
</tr>
<tr>
<td><strong>Practice Based Learning and Improvement</strong></td>
<td>• Present cases at patient care conferences with assistance of faculty attending</td>
<td>• Present cases at patient care conferences with minimal assistance by faculty attending</td>
</tr>
<tr>
<td><strong>Interpersonal and Communication Skills</strong></td>
<td>• Triage night and weekend phone calls with faculty assistance on the majority of calls.</td>
<td>• Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.</td>
</tr>
<tr>
<td>Professionalism</td>
<td>• Demonstrate ability to interact with all members of health care team, patients, and family members</td>
<td>• Demonstrate competence in all interactions with all members of health care team, patients, and family members</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
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<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Systems-Based Practice</td>
<td>• Demonstrate understanding of health care resources in the University setting and begin to identify areas for improvement</td>
<td>• Demonstrate expertise in utilization of health care resources in the University setting and identify at least one area for improvement</td>
</tr>
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</table>
2. **Malignant Hematology Inpatient Service (7D 273-3074)**

**Location:** University of Minnesota Medical Center, Fairview 7D  
**Duration:** 1 month

**Staff:** There is one malignant hematology attending physician and one fellow directly supervising one or more mid-level providers. Each team oversees the care of patients with both hematologic and oncologic diseases. Any patients admitted in excess of the number of patients capably cared for by my mid-level providers will be admitted by the fellow and faculty member with the assistance of the fellow. This is an elective rotation for residents.

**Coverage:** The fellow is expected to arrive before sit-down rounds that begin at 8:30 am to assist the mid-level providers in any urgent care matters. The fellow should remain until the late afternoon/early evening until all immediate care matters are completed. A hospitalist (pager 6633) covers the patients from 3 – 11 p.m., and from 11 p.m. to 7 a.m. a moonlighter (pager 6633).

**Call:** The fellow will rotate night and weekend call coverage for the inpatient and consult services with the UMMC Heme and Medical Oncology fellow, UMMC Hematology/Oncology consult and BMT fellow. The fellow will be on call for 2-3 weekend days/month. The attending physician is required, along with the fellowship director, to closely monitor duty hours, as well as for any evidence of fellow fatigue or stress. The back-up fellow or the attending physicians may need to take additional call to prevent fellow fatigue.

**NOTE:** Patients cared for by practitioners at the Fairview Maple Grove Clinic are instructed to call here at night/weekends for medical assistance. You should handle their calls in the same manner as any other clinic patient. Their clinic notes/labs/x-ray reports are in EPIC and iSite as for any other Fairview patient. Dr. Elimelakh carries her pager and tells me that you may contact her with questions Monday-Friday 8 a.m. – 5 p.m.; her pager is 1286; clinic phone is 763-898-1000. Otherwise, discuss the case with your on-call faculty attending and, if necessary, instruct the patient to come here to the ER for evaluation or admission. Please also put a note into EPIC regarding the patient encounter and route it to the patient’s clinic hematologist or oncologist.

**General Description:**

This monthly rotation includes the inpatient Malignant Hematology service at UMMC. Patients are admitted to this service with a broad variety of malignant hematologic disorders including leukemia, lymphoma, and myeloma.

**Fellow Responsibilities and Lines of Responsibilities within the Team:**

**Note:** Also Refer to Faculty Supervision and Graded Responsibility, page 25, Fellowship Curriculum
**Patient care:** The fellow is responsible for assisting the attending in the overall clinical supervision and management of all patients. Patients admitted overnight by the moonlighter will be listed on the whiteboard in the physician workroom for pick-up by the midlevel (and fellow/attending if needed). The fellow is expected to make rounds with the midlevel team and attending on a daily basis, and assist the mid-level providers throughout the day as needed. After sit-down rounds, the fellow and faculty will do “walk-rounds.” Following walk-rounds, the fellow is responsible for updating the mid-level providers on any new patient issues. The mid-level provider/fellow is responsible for communicating any multi-disciplinary issues to the multi-disciplinary team members and charge nurse.

Fellow level knowledge is crucial for optimizing patient care, and as the fellow progresses through his/her training, the fellow should take an increasing role for making care decisions – at first with faculty input, then less, and then as a third year fellow with minimal faculty input. The fellow should write chemotherapy orders with faculty supervision, perform (with faculty supervision until certified) all heme/onc procedures, and have ongoing knowledge of the patient's hematologic/oncologic status and care plans. The fellow should call the referring physician at any time there is an abrupt change in a patient’s condition, such as transfer to the MICU.

An essential role of the fellow is the responsibility for ensuring that the discharge orders and plans are communicated to the primary physician and/or referring physician, and any follow-up orders conveyed to the outpatient Hematology/Oncology or BMT Clinic. The nurse coordinator on 7D will assist in this process.

The fellow should briefly review progress of the inpatients during "sign out" at the end of each day with the mid-level providers. The fellow should contact the attending physician at the end of the day and discuss any new issues. The mid-level providers will also sign out their patients with the moonlighter. Any patients being cared for by the fellow/attending will be signed out to the moonlighter by the fellow.

Patients admitted in excess of the number able to be cared for by the mid-level(s) will be admitted and cared for by the fellow (up to 5-6 patients depending on level of acuity) with the assistance of the attending. Any patients in excess of this number will be admitted and cared for by the faculty attending physician. When the mid-level patient numbers decline, patients can be transferred to a mid-level provider’s care. The fellow is responsible for the primary care of up to 5-6 patients on the weekends with faculty oversight – these may be the fellow’s patients or the mid-level provider’s patients.

**Clinic triage:** The fellow is responsible for assisting the clinic triage nurses in management of any patient issues for which the patient’s primary physician or mid-level provider is unavailable.

**Teaching:** The fellow is responsible for searching the medical literature and providing relevant references to the service, both for educational purposes and to facilitate care of patients with unusual problems. The fellow is responsible for teaching relevant procedures and in assisting in procedures when necessary. The fellow is responsible for a minimum of one presentation/week during the rotation. The fellow should present interesting and/or difficult cases at the University Patient Conference (Wednesday noon conference) and any of the other relevant weekly tumor board conferences.
Educational Objectives in Malignant Hematology

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis, interpretation of test results, and management of patients with malignant hematologic disorders with a focus on:
   - Leukemias, acute and chronic
   - Lymphoma of all phenotypes and histology
   - Multiple myeloma

   Evaluation: In-training exam and global assessment by attending.

2. Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates (within the context of peripheral blood CBC and smear examination) incorporating the process of informed consent.
   - The first month on the rotation, the fellow will decide, with the faculty, which tests to order on the bone marrow biopsies and aspirates.
   - On subsequent months of the rotation, the fellow will make the initial decision on which tests to order and review with the faculty.
   - The fellow will also review the slides with the hematopathologist to ensure adequacy of the biopsy and aspirate.

   Evaluation: Staff verification of performed procedures in E*Value.
   One completed bone marrow biopsy competency certification evaluation form.

3. Satisfactorily perform and interpret one lumbar puncture or Ommaya reservoir tap incorporating the process of informed consent.

   Evaluation: Staff verification of performed procedures in E*Value.
   One completed intrathecal chemotherapy competency certification evaluation form.

4. Demonstrate an understanding of allocation of resources that does not compromise quality of care as well as the role of each member of the health care team through active participation in at least 6 multidisciplinary health team rounds.

   Evaluation: Global rating by the attending staff

5. Supervise the daily activities and core lectures for housestaff educational curriculum (available via computer) and critical review of at least one article per week (This review should take no longer than 15 minutes.)

   Evaluation: Global rating by the attending staff of teaching effectiveness; Review of the articles by the fellowship director at the semi-annual review. (The article is to be kept in the fellow's portfolio for review with the director.)

6. Demonstrate ability to lead a team in the effective delivery of health care
   - By the end of the first rotation month, the fellow should be actively participating in attending rounds.
• By the end of the second rotation month, the fellow should be leading both attending rounds and the interaction with the patient and family. The attending physician and the fellow will meet on at least one occasion to review the fellow's performance in leading rounds with the housestaff and in interacting/communicating with the patients and their families on team rounds.

Evaluation: Global rating form by attending staff based on direct observation of the fellow’s performance. One 360 degree evaluation must be completed on each rotation on Ward 1 with evaluation forms to be completed by nursing staff, social worker/discharge planners, residents, and at least 3 patients of the fellow’s choosing.

7. Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.
   • During the first rotation month, the fellow will write at least 2 chemotherapy orders cooperatively with the staff.
   • During the second rotation month, the fellow should write at least 2 chemotherapy orders independently and then review with the staff.

Evaluation: The fellow should maintain copies of the orders (patient name removed/blacked out to maintain patient privacy) in his/her portfolio for review with the fellowship director. Completion of a Chemotherapy Competency Certification Evaluation Form

8. Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice.
   • During the first rotation month, the fellow will keep a log of night and weekend phone calls, and review at least 6 of them in-depth with the staff including patient concern, fellow assessment, and recommendation.
   • During the second rotation month on the rotation, the fellow will keep a log of night and weekend phone calls, and follow-up on at least 6 of them to determine clinical outcome.

Evaluation: Global rating form by the attending staff and Review of the log by the fellowship director. (To maintain privacy, patient names should be removed/blacked out).

Conferences:
• HOT Patient Care Conference on Wednesday, noon, except the first Wednesday of the month (faculty meeting only): Attendance is mandatory. The fellow should be prepared to discuss cases of interest with the attendees.
• Heme Malignancy (hematopathology) Conference: Attendance is mandatory; Room D175 Mayo; 2nd and 4th Mondays, 4:15-5:15 p.m.. Fellows should prepare a case for presentation at each conference.
• BMT/Heme Malignancy patient care conference: Attendance is mandatory; weekly on Mondays, 3:30 – 4:30 p.m., PWB 14-136. Fellows should be prepared to discuss pertinent cases.
Reading List:

**Hematologic Malignancies**


- Richard J Fisher, Ellen R Gaynor, Steve Dahlberg, Martin M Oken, Thomas M Grogan, Evonne M Mize, John H Glick, Charles A Coltman Jr, Thomas P Miller. Comparison of Standard Regimen (CHOP) with three intensive chemotherapy regimens for advanced Non-Hodgkin’s Lymphoma. NEJM 1993 328(14): 1002-1006. **Description:** This study is a prospective randomized phase III trial comparing CHOP with three other regimens in NHL. There was no difference in outcomes re-establishing CHOP as the standard of care for the first line treatment of DLCL. This remained the standard of care until studies with Rituximab. PubMed citation number: 7680764


• Orlowski RZ et al. Randomized phase III study of pegylated liposomal doxorubicin plus bortezomib compared with bortezomib alone in relapsed or refractory multiple myeloma: Combination therapy improves time to progression. J Clin Oncol. 2007;25:3892-3901.

Supportive Care
Malignant Hematology Inpatient Service Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

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<td>• Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent with faculty supervision.</td>
<td>• Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.</td>
</tr>
<tr>
<td></td>
<td>• Satisfactorily perform and interpret one lumbar puncture or Ommaya reservoir tap incorporating the process of informed consent with faculty supervision.</td>
<td>• Demonstrate ability to lead a multidisciplinary team in the effective delivery of health care.</td>
</tr>
<tr>
<td></td>
<td>• Actively participate in at least 6 multidisciplinary health team rounds.</td>
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<td></td>
<td>• Write chemotherapy orders with faculty supervision.</td>
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<td></td>
<td>• Understand and interpret CBC and correlate with peripheral blood and bone marrow findings.</td>
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<tr>
<td></td>
<td>• Understand test results within the context of a patient’s diagnosis and treatment plans.</td>
<td></td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>• Begin to develop understanding of diagnosis and management of patients with malignant hematologic disorders.</td>
<td>• Demonstrate expertise in the diagnosis and management of patients with malignant hematologic disorders</td>
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<td>• Participate in core lectures; critically review at least one article per week that pertains to a current patient problem with the team.</td>
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<tr>
<td>Practice Based Learning and Improvement</td>
<td>• Present cases at patient care conferences with assistance of faculty attending</td>
<td>• Present cases at patient care conference with minimal assistance by faculty attending</td>
</tr>
</tbody>
</table>

40
| Interpersonal and Communication Skills | • Triage night and weekend phone calls with faculty assistance on the majority of calls. | • Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input. |
| Professionalism | • Demonstrate ability to interact with all members of health care team, patients, and family members | • Demonstrate competence in all interactions with all members of health care team, patients, and family members |
| Systems-Based Practice | • Demonstrate understanding of health care resources in the University setting and begin to identify areas for improvement | • Demonstrate expertise in utilization of health care resources in the University setting and identify at least one area for improvement |
3. **Bone Marrow Transplantation Inpatient Service (BMT) (4B 273-3042)**
   (BMT Clinic Phone: 612-626-2663, Fax: 612-626-2664)

   **Location:** University of Minnesota Medical Center, Fairview, 4B
   **Duration:** 1 month
   **Staff:** The inpatient BMT Service (approximately 18-25 patients) will be staffed by two attending physicians designation as Teams A and B. There will be one fellow assigned to the Team A at all times plus several mid-level providers.

   Mid-level providers and typically one moonlighter also cover patients on weekends. If the inpatient census is high, fellows may need to assist in primary coverage of some patients on the weekends.

   There is an outpatient BMT attending for the BMT clinic. The BMT clinic (phone 612-626-2663) is open daily (8 am – 5 pm weekdays and 8 am – 12 pm weekends). Mid-levels also care for outpatients in the clinic.

   **Coverage:** The fellow is expected to arrive before sit-down rounds that begin at 8:30 am to assist the mid-level providers in any urgent care matters. The fellow should remain until the late afternoon/early evening until all immediate care matters are completed. A hospitalist (pager 6633) covers the patients from 3 – 11 p.m., and from 11 p.m. – 7 a.m. a moonlighter (pager 6633).

   **Call:** The fellow will rotate night and weekend call coverage for the inpatient and consult services with the UMMC Heme Malignancy, UMMC Hematology/Oncology consult and Heme/Onc Consults Fellow. The fellow will be on call for 2-3 weekend days/month. The attending physician is required, along with the fellowship director, to closely monitor duty hours, as well as for any evidence of fellow fatigue or stress. The back-up fellow or the attending physicians may need to take additional call to prevent fellow fatigue.

   **NOTE:** Patients cared for by practitioners at the Fairview Maple Grove Clinic are instructed to call here at night/weekends for medical assistance. You should handle their calls in the same manner as any other clinic patient. Their clinic notes/labs/x-ray reports are in EPIC and iSite as for any other Fairview patient. Dr. Elimelakh carries her pager and tells me that you may contact her with questions Monday-Friday 8 a.m. – 5 p.m.; her pager is 1286; clinic phone is 763-898-1000. Otherwise, discuss the case with your on-call faculty attending and, if necessary, instruct the patient to come here to the ER for evaluation or admission. Please also put a note into EPIC regarding the patient encounter and route it to the patient’s clinic hematologist or oncologist.

   **General Description:**

   This is a monthly rotation on the inpatient Bone Marrow Transplant (BMT) services. The overall goal is for the fellow to develop confidence and clinical expertise in the care and management of transplant recipients.
"Sit-down" rounds are held each morning at 8:30 am on the unit for BMT. The NP/PAs and resident are responsible for seeing their patients and preparing for these sit-down rounds. The charge nurse and inpatient nurse coordinator (and often a pharmacist) join rounds. On Mondays, comprehensive patient care rounds are held in conjunction with the social worker. Following sit-down rounds with the mid-level providers and resident, the fellow and attending will make “walk-rounds.”

Fellow Responsibilities and Lines of Responsibilities within the Team:

Note: Also Refer to Faculty Supervision and Graded Responsibility, page 25, Fellowship Curriculum

**Patient care:** The fellow will be responsible for following, assisting in and supervising the details of all inpatients followed by the Service. It is helpful for the fellow to arrive on the unit by 7:30-8 a.m. to assist the NP/PAs and resident in any urgent care issues prior to morning rounds.

After “walk-rounds” the fellow should communicate any new care issues to the resident and mid-level providers. The fellow must be available throughout the day to provide support to the resident and mid-levels about their patients, speak with consultants, and consult with the attending physician about any complicated decisions or therapeutic plans. At the end of the day, the mid-levels and resident will “sign-out” their patients to the fellow, who will be responsible for signing out to the moonlighter, and will update the faculty member about any new issues. Any new admissions will be seen by all team members for that patient. According to graded responsibility, the fellow should take an increasing responsibility for making care decisions – at first with faculty input, then less, and as a third year fellow with minimal faculty input.

It is the team’s responsibility (with fellow and faculty supervision) to provide care to the resident’s patients on weekends. Discuss with your attending physician whether to have seen those patients prior to morning rounds on the weekends.

The fellow must write an admission note for each newly admitted patient. This note is meant to be a summary of the reason for the patient’s admission and the assessment/management plan. Although the fellow is not required to write a daily progress note (except perhaps on the weekend if the census is high), one should be written at any time that a patient’s condition abruptly changes. The referring physician must also be called at any time there is an abrupt change in a patient’s condition.

The fellow will write all chemotherapy orders and review with the BMT pharmacist; the attending staff must co-sign all orders.

Access to all BMT protocols is available on the computers on 5C. Go to BMT Intranet and then to My Quick Links. To create a shortcut on your computer: Go to Fairview Intranet – Search for BMT in the Google search within the Fairview Intranet – Select BMT Order Sets, Guidelines – Click on Add to Quick Links – BMT Intranet Link is saved in My Quick Links Section.

Good communication between the inpatient and outpatient care providers is an essential aspect of optimal care. **If you have advised a patient who called after hours/night to go to the outpatient BMT clinic the following morning, you should contact the outpatient BMT attending at 8 am the next morning and communicate the plan.** Likewise, the outpatient BMT attending will contact you in the late afternoons if there are patients who are ill who may potentially call at night.
The outpatient BMT attending is available by pager at night for questions regarding outpatients who may have been seen in the clinic.

**Teaching:** The fellow will provide relevant medical literature for the inpatient service and participate in scheduled teaching conferences, both for the Medicine residents and for the BMT group as a whole. The fellow will be asked to present cases at the Wednesday patient care conference.

**Procedures:** The fellow should participate in at least one bone marrow harvest during fellowship, and observe apheresis in the Blood Donor Center on at least one occasion.

**BMT: Educational Objectives**

Expectations by rotation:

The first month that a fellow is on BMT service, the fellow should become familiar with all BMT protocols. Particularly for fellows with limited prior BMT experience, the fellow should read as much as possible all protocols and develop a basis understanding of indications for transplant and general supportive care.

By the second month on the rotation, the fellow should develop a higher degree of knowledge about the immunology of BMT, including graft versus tumor effect, chimerism, use of donor lymphocyte infusions for relapse. The fellow should begin making independent decisions for patients with oversight by the attending physician.

By the third month rotation, the fellow should be developing an in depth knowledge of all aspects of BMT, from pre-BMT consultation and decisions on when BMT is indicated, care of the critically ill BMT recipient, effective management of acute and chronic GVHD, options for the management of the patient who relapses following BMT, and post-transplant late-effects. The fellow should be developing proficiency in all the listed ACGME competencies (see below) related to BMT, and should be independently making management decisions, interacting with the patient and leading the multidisciplinary team, and making discharge and post-transplant management decisions.

*By the completion of this rotation, the fellow will be able to:*

1. Demonstrate expertise in the diagnosis and management of patients with non-malignant hematologic, malignant hematologic and solid tumor disorders undergoing transplantation with focus on:
   - Autologous and allogeneic stem cell transplantation, specifically, the primary diagnoses for which transplantation is effective, type of preparatory regimens, anticipated recovery time, overall morbidity and mortality.
   - Complications from stem cell transplantation including graft vs. host disease, mucositis, infections, venoocclusive disease, and alveolar hemorrhage
   - Supportive care needs of transplant recipients (growth factor support, transfusion support, hyperalimentation)
   - Management of indwelling central venous catheters
   - By third rotation –demonstrate expertise as a consulting physician for patients with hematologic malignancies
Evaluation: In-training exam, global evaluation by staff attending. The staff attending will review at least 3 of the fellow’s admission notes as an adjunct to assessing fellow’s level of medical knowledge. BMT fellow – the staff attending will review at least 3 of the assessing fellow’s consult notes.

2. Develop an understanding of the interaction of nursing staff, pharmacists, social workers, dieticians, physical and occupational therapists, and nurse coordinators by actively participating in at least 3 multidisciplinary health team rounds.

Evaluation: Global rating form filled out by the attending staff. **One 360 evaluation** to include evaluation by nursing staff, pharmacists, mid-level providers (NP/PAs), and at least 3 patients of the fellow’s choosing. **The 360 evaluation should be performed each month the fellow is on service.**

3. Understand and facilitate the unique discharge needs of transplant patients.
   - The first month on the rotation, the fellow will review at least 3 sets of discharge orders with the faculty to ensure understanding of the discharge medications, follow-up appointments and testing.
   - The second month on the rotation, the fellow should independently ensure appropriate discharge instructions and follow-up.

Evaluation: RMS global rating form filled out by the attending staff.

4. Establish effective communication between the inpatient and outpatient transplant services by calling the accepting out-patient doctor (either the patient’s primary transplant doctor or ‘the doc of the month’).

Evaluation: Global rating form filled out by the attending staff.

5. Actively participate in teaching mid-level providers.
   - The BMT fellow is expected to give one short ‘chalk talk’, no longer than 15 minutes, each week to the mid-level providers.

Evaluation: Global rating by the attending staff and a review of the talks (either a list of talks given, an outline of the talks, or copies of notes/handouts used) by the fellowship director. The review should be maintained in the fellow portfolio.

6. Effectively triage night and weekend patient phone calls from transplant patients and provide medically sound and compassionate advice.
   - The first month on the rotation, the BMT A fellow will keep a log of night and weekend phone calls, and review at least 6 of them in-depth with the staff including patient concern, fellow assessment, and recommendation.
   - The second month on the rotation, the BMT A fellow will keep a log of night and weekend phone calls, and follow-up on at least 6 of them to determine clinical outcome.

Evaluation: Global rating form filled out by the attending staff and review of the log by the fellowship director at the year-end review.
7. Demonstrate ability to lead a team in the effective delivery of health care.

- By the end of the first month, the fellow should be actively participating in attending rounds.
- By the end of the second month, the fellow should be leading both attending rounds and the interaction with the patient and family.
- BMT fellows should lead all family conferences, and function independently (with staff oversight only as needed) by their second rotation.

Evaluation: Global rating form filled out by the attending staff.

8. Develop an understanding of quality control measures employed for patient care and safety.

Evaluation: Global rating form filled out by the attending staff.

Conference:
- BMT Conference on Mondays from 1:15 – 2:15 p.m., room 450 MCRB Attendance is mandatory.
- Heme Malignancy (hematopathology) Conference: Attendance is mandatory; Room D175 Mayo; 2nd and 4th Mondays, 4:15- 5:15 p.m. Fellows should prepare a case for presentation at each conference.
- BMT/Heme Malignancy patient care conference: Attendance is mandatory; weekly on Mondays, 3:30 – 4:30 p.m., PWB 14-136. Fellows should be prepared to discuss pertinent cases.
- HOT Patient Care Conference on Wednesday, noon, except the first Wednesday of the month (faculty meeting only): Attendance is mandatory. The fellow should be prepared to discuss cases of interest with the attendees.

Reference
Hematopoietic Cell Transplantation, 2nd Edition. Thompson, Bloom and Forman. Glackwell Sciences (this text is in the doctor's room on 4B for use during the rotation).

Reading List:
- BMT Program Protocols are available on Fairview Intranet (see page 45 for details on access). You are encouraged to read in detail all protocols to which your patients are enrolled. The background section of each protocol is informative.

Supportive care

UCBT


**AML/MDS**


**GVHD**


• Pidala J, Perez, L, Anasetti D. Have we improved in preventing and treating aGHVD? Curr Opin Hematol. 18:408-413, 2011.


**Nonmyeloablative conditioning – first report**


**MDS**

**Lymphomas**

**Myeloma**

**Germ cell tumors**

**NK cells**

**T regs**
- Li L et al. CD4+CD25+ regulatory T cell lines from human cord blood have functional and molecular properties of T cell anergy. Blood. 2005; DOI 10.1182
### BMT Inpatient Service Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

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<tr>
<td></td>
<td>• Understand test results within the context of a patient’s diagnosis and treatment plans.</td>
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<tr>
<td></td>
<td>• Establish effective communication between the inpatient and outpatient transplant services.</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate ability to lead a multidisciplinary team in the effective delivery of health care.</td>
</tr>
<tr>
<td></td>
<td>• Understand and facilitate the unique discharge needs of transplant patients.</td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>• Begin to develop understanding of indications for transplantation.</td>
</tr>
<tr>
<td></td>
<td>• Become familiar with BMT protocols.</td>
</tr>
<tr>
<td></td>
<td>• Participate in core lectures; critically review at least one article per week that pertains to a current patient problem with the team.</td>
</tr>
<tr>
<td></td>
<td>• Begin to understand acute complications and late side effects of transplantation.</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders undergoing autologous and allogeneic stem cell transplantation (specifically primary diagnoses treated, type of preparatory regimen, anticipated recovery, overall morbidity and mortality), complications (graft vs. host disease, mucositis, infection, venoocclusive disease, alveolar hemorrhage), and supportive care.</td>
</tr>
<tr>
<td>Practice Based Learning and Improvement</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Interpersonal and Communication Skills</td>
<td>Present cases at patient care conference with minimal assistance by faculty attending.</td>
</tr>
<tr>
<td>Professionalism</td>
<td>Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.</td>
</tr>
<tr>
<td>Systems-Based Practice</td>
<td>Demonstrate competence in all interactions with all members of health care team, patients, and family members.</td>
</tr>
</tbody>
</table>

- Present cases at patient care conferences with assistance of faculty attending.
- Incorporate new knowledge to improving patient care in the majority of cases.
- Demonstrate ability to interact with all members of health care team, patients, and family members.
- Demonstrate understanding of health care resources in the University setting and begin to identify areas for improvement.
- Develop an understanding of quality control measures employed for patient care and safety.
- Demonstrate expertise in the utilization of health care resources in the University setting and identify at least one area for improvement.
- Identify areas for improvement in quality control measures that can be employed for patient care and safety.
4. **Hematology and Oncology Consult Service**

**Location:** University of Minnesota Medical Center, Fairview inpatient services and clinics

**Duration:** 1 month

**Staff:** The inpatient hematology and oncology consult service will be comprised of one fellow, a hematology attending physician and an oncology attending physician. Intermittently, the team will also have an internal medicine resident(s) (residents will spend 2 weeks/month on the consult service and 2 weeks/month in the ambulatory clinic) and/or medical student(s).

The team will oversee the care of all consults with non-malignant or undiagnosed hematologic disorders. These will include consults from the 7D inpatient hematology team for patients with complicated benign hematologic disorders.

Dr. Nicole Zantek of Laboratory Medicine and Pathology will staff the Special Coagulation laboratory aspects of the rotation. The fellow will participate in the daily activities in the Special Coagulation Laboratory in order to gain an appreciation of the strengths and limitations of tests performed in a coagulation laboratory. This includes lectures from 10 am to noon on Wednesdays at Mayo D242. **The fellow should contact Dr. Zantek prior to the start of the rotation to confirm the schedule.**

**Call:** The fellow will rotate night and weekend call coverage for the inpatient and consult services with the UMMC hematology and oncology inpatient fellow, the UMMC heme malignancy fellow, and the BMT fellow.

**Contacts:**

**Hematology:**
- Mark Reding, M.D. (W) 612-625-1104 (P) 612-899-8262
- Yvonne Datta, M.D. (W) 612-626-5195 (P) 612-899-8669
- Nicole Zantek, M.D., PhD (W) 612-626-3768 (P) 612-899-5418

**Oncology:**
- Anne Blaes, MD (W) 612-638-8138 (P) 612-899-7027

**General Description:**

The goal of this rotation is for the fellow to develop those skills necessary for effective consultation for patients with benign and malignant hematologic disorders and solid tumor malignancies. Patients seen in consultation may be inpatients in UMMC or Fairview Riverside. The fellow will also be exposed to aspects of laboratory testing for bleeding and thrombotic disorders under the direction of Dr. Zantek.
Fellow Responsibilities and Lines of Responsibilities within the Team:

Note: Also Refer to Faculty Supervision and Graded Responsibility, page 25, Fellowship Curriculum

The fellow is responsible for ensuring that all inpatient consults are seen and staffed within 24 hours, and for contacting the referring service to discuss the assessment and plan. The fellow is responsible for assuring that all inpatients being followed by the consult team are seen on a regular basis and should ascertain that, if necessary, appropriate follow-up plans in Masonic Cancer and Blood Disorders Clinic are made for the patient after discharge from the hospital. The fellow will oversee making the assignments for consults to the resident and student on the team.

The consult fellow will perform bone marrow biopsies/aspirates on consult patients as indicated with appropriate supervision based on competency. In the event that a patient needs to be transferred to one of the inpatient hematology/oncology services, the fellow is responsible for coordinating the transfer.

To enhance follow-up care and communication at rotation change-over, the fellow should keep a running log of every consult request and disposition (i.e. date of consult request, diagnosis, ongoing f/u, signed off/not actively following).

The fellow will report directly to the faculty attending, and should contact the attending physician as soon as possible about any urgent or emergent consults. As time permits, the consult fellow will be expected to participate in outpatient hematology and oncology clinics at least two mornings per week with direct supervision by the clinic staff. This schedule may be altered depending on the fellow’s clinic schedule and number of active consults.

Hemophilia Educational Activities: The fellow will also participate in the care of hemophilia patients. The fellow will attend hemophilia staff rounds from 8:45 a.m. – 10 a.m. on Mondays in the Hemophilia Center office (5th floor Mayo Building, Room B-549) and, when possible, see patients in the Adult Comprehensive Hemophilia Clinic (6th floor PWB, Delaware Street Clinic), which is held on Monday afternoons. The hematology consult fellow will also make rounds on any inpatients with hemophilia along with the Hemophilia Center staff.

Special Coagulation Laboratory: The fellow will participate in the daily activities in the Special Coagulation Laboratory in order to gain an appreciation of the strengths and limitations of tests performed in a coagulation laboratory. This will be achieved through participation in test interpretation, didactic sessions, observation of laboratory testing, and independent study.

The fellow will participate in the following activities during this rotation:

1. Didactic sessions. These take place on Wednesdays from 10:00 to 12:00 in Mayo D235 or D242. The didactic sessions should take priority over clinical duties, with the exception of the fellow’s continuity clinic.
2. Test interpretation: Experience in appropriate interpretation of laboratory results is gained by participating in the sign out of Special Coagulation Laboratory cases. The daily sign out time varies to maximize the number of trainees that can participate. Sign out takes place in Mayo D242. When time permits, fellows, can review cases prior to sign out.
3. Observation of laboratory testing: During the month of consult service, the fellow should coordinate one half day to spend observing the performance of laboratory testing. **Contact the Technical Supervisor in the Special Coagulation Laboratory at 612-273-4797** to coordinate this experience.

4. Independent study. Fellows are expected to read the required items in the reading list provided below. Additional reading materials are suggested. Reading on case specific topics is encouraged.

The fellow will also work with the UMMC inpatient hematology and oncology service fellow to oversee and lead the educational curriculum on the inpatient service.

**Hematology and Oncology Consults: Educational Objectives**

The first month on the service, the fellow should begin developing an understanding of the diagnoses and management of patients with non-malignant and oncologic diseases. The fellow should be able to see patients in consultation, staff them with the attending physician, and with the assistance of the attending physician develop a recommendation for management and therapy. The fellow should review all diagnostic laboratory, radiographic, and pathology material. The fellow should interact with the patient and family, but is not expected to lead care conferences. The fellow, with the attending, should communicate all recommendations to the primary team.

In consecutive months, the fellow is expected to develop an in-depth understanding of the diagnosis and management of patients with a broad variety of diseases. The fellow should begin to function independently in decision making and development of care plans, and should begin to lead, with faculty assistance, discussions with patients and families about the diagnosis, prognosis, and management recommendations. Senior fellows (second and third years) should be functioning with increasing independence as a consultant. Senior fellows should be able to effectively run a consulting team, triage consults, independently evaluate patients, independently develop recommendations for management, and independently lead care conferences.

*By the completion of this rotation, the fellow will be able to:*

1. Demonstrate expertise in the diagnosis and management of patients with hematologic and oncologic disorders with focus on:
   - Thrombocytopenia
   - Idiopathic thrombocytopenic purpura
   - Thrombotic thrombocytopenic purpura
   - Heparin-induced thrombocytopenia
   - Disseminated intravascular coagulation
   - Inherited and acquired thrombophilia
   - Inherited and acquired bleeding disorders
   - Leukopenia
   - Anemia
   - Hematologic complications of solid organ transplantation
   - Understand the general methods and appropriate use of coagulation laboratory assays in: 1) diagnosis of thrombophilia and bleeding disorders; and 2) monitoring of therapies, including factor concentrates, DDAVP, heparins, warfarin, and direct thrombin inhibitors
• Diagnostic and staging studies for patients with newly diagnosed solid tumor malignancies
• Oncologic emergencies, including but not limited to spinal cord compression and hypercalcemia of malignancy

**Evaluation:** In-training examination and global assessment by attending staff. The *attending physician will review in detail a minimum of 3 consultation notes written by the fellow and discuss them with the fellow.*

2. Incorporate practice based learning into daily patient care by sharing at least 2 articles per week with the rest of the consult team that relate to current patient cases.

**Evaluation:** Global rating by the attending staff and review of the articles by the fellowship director. (Include the articles in the fellow portfolio)

3. Maintain comprehensive, timely, legible and appropriately detailed medical records as a consultant.

**Evaluation:** Global rating by the attending staff based on review of a minimum of 3 consultations written by the fellow

4. Demonstrate the skills of an effective consultant in hematology and medical oncology.

**Evaluation:** Global rating by the attending staff

5. Maintain professional relationships with healthcare team, as a leader or member.

**Evaluation:** Global rating by the attending staff

6. Apply knowledge of health systems to use resources in providing optimal patient care (i.e. inpatient vs. outpatient consultation and testing, arranging appropriate follow-up).

**Evaluation:** Global rating by the attending staff

7. Work with the triage nurses to deliver timely and quality patient care.

**Evaluation:** Global rating by the attending staff

**Conferences:**
- HOT Patient Care Conference, Wednesday, noon, except the first Wednesday of the month: *Attendance is mandatory.*

**Reading List:**

• Arepally GM and Ortel TL. “Heparin-Induced Thrombocytopenia”, NEJM, 2006; 355:809-817. Description: Diagnosis and management of patients with heparin induced thrombocytopenia.


• Toh CH, Dennis M. Disseminated intravascular coagulation: old disease, new hope. BMJ 2003;327(7421):974-7. Description: Recent review article of DIC. PubMed citation number: 14576251


Reading List- Special Coagulation Laboratory

Required reading:


• Kottke-Marchant L and Corcoran G. The laboratory diagnosis of platelet disorders. Arch Pathol Lab Med 2002;126:133-146


• Practical-Haemostasis.com A practical guide to laboratory hemostasis at www.practical-haemostasis.com
Suggested reading:

**Journal articles**

- Khor B and Van Cott EM. Laboratory tests for protein C deficiency. Am J Hematol 2010;85:440-442
- Van Cott EM, Laposata M, and Prins MH. Laboratory evaluation of hypercoagulability with venous or arterial thrombosis. Arch Pathol Lab Med 2002;126:1281-1295

**Suggested Books:**

- Kitchen CS, Alving BM, and Kessler CM. Consultative Hemostasis and Thrombosis. ©2002 W.B. Saunders Co., USA
<table>
<thead>
<tr>
<th>Competency</th>
<th>PGY 4 (First year fellow)</th>
<th>PGY 5/6 (Second/third year fellow)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient Care</strong></td>
<td>• Begin to acquire the skills of a consultant in hematology and oncology</td>
<td>• Demonstrate the skills of an effective consultant in hematology/medical oncology.</td>
</tr>
<tr>
<td></td>
<td>• Begin to maintain comprehensive, timely, legible and appropriately detailed medical records as a consultant.</td>
<td>• Always maintain comprehensive, timely, legible and appropriately detailed medical records as an expert consultant.</td>
</tr>
<tr>
<td><strong>Medical Knowledge</strong></td>
<td>• Gain an understanding of the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders.</td>
<td>• Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders.</td>
</tr>
<tr>
<td><strong>Practice Based Learning and Improvement</strong></td>
<td>• Present cases at patient care conferences with assistance of faculty attending</td>
<td>• Present cases at patient care conference with minimal assistance by faculty attending</td>
</tr>
<tr>
<td></td>
<td>• Incorporate new knowledge to improving patient care in the majority of cases.</td>
<td>• Incorporate new knowledge to improving patient care on an ongoing basis for all patients.</td>
</tr>
<tr>
<td></td>
<td>• Incorporate practice based learning into daily patient care by sharing at least 2 articles per week, with the rest of the consult team, which relate to current patient cases</td>
<td></td>
</tr>
<tr>
<td><strong>Interpersonal and Communication Skills</strong></td>
<td>• Triage night and weekend phone calls with faculty assistance on the majority of calls.</td>
<td>• Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.</td>
</tr>
<tr>
<td></td>
<td>• Work with the triage nurses to deliver timely and quality patient care with faculty supervision.</td>
<td>• Independently work with the triage nurses to deliver timely and quality patient care.</td>
</tr>
</tbody>
</table>
| Professionalism | • Demonstrate ability to interact with all members of the primary health care team, patients, and family members as a consultant  
• Maintain professional relationships with healthcare team as a team member. | • Demonstrate competence in all interactions with all members of health care team, patients, and family members  
• Maintain professional relationships with healthcare team as the team leader. |
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<tbody>
<tr>
<td>Systems-Based Practice</td>
<td>• Begin to apply knowledge of health systems to use resources in providing optimal patient care (i.e. in-patient vs. out-patient consultation and testing, arranging appropriate follow-up) with faculty assistance.</td>
<td>• Independently apply knowledge of health systems to use resources in providing optimal patient care (i.e. in-patient vs. out-patient consultation and testing, arranging appropriate follow-up).</td>
</tr>
</tbody>
</table>
5. Hematopathology

Location: University of Minnesota Medical Center, Special Hematology Laboratory, second floor Mayo

Duration: One month

Staff: Robert McKenna, M.D., Director; Adina Cioc, M.D., Vanessa Dayton, M.D., Michael Linden, M.D., Timothy Singleton, M.D., Sophia Yohe, M.D.

Call: There is no call responsibility.

NOTE: This rotation is mandatory – i.e., all fellows must complete this rotation during fellowship training.

General Description:

Fellows will rotate with the Special Hematology residents in the performance of bone marrow aspirations and biopsies, and in the responsibility for their interpretation with oversight by the faculty attending.

Hematopathology Service Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 4/5/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care</td>
<td>• Appropriately obtain informed consent for bone marrow aspiration and biopsies</td>
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<tr>
<td></td>
<td>• Satisfactorily perform inpatient and outpatient bone marrow aspirations and biopsies and instruct patients in post-procedure care</td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>• Understand and employ appropriate anesthesia for procedures</td>
</tr>
<tr>
<td></td>
<td>• Interpret blood smears, bone marrow aspirates, touch preparations and bone marrow biopsies and all special stains</td>
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<td></td>
<td>• Understand results and correlate them with the clinical findings.</td>
</tr>
<tr>
<td>Practice Based Learning and Improvement</td>
<td>• Present cases at patient care conferences and use the discussion to update one’s own knowledge base and care of patients.</td>
</tr>
<tr>
<td></td>
<td>• Incorporate new knowledge to improving patient care.</td>
</tr>
<tr>
<td></td>
<td>• Incorporate practice based learning into daily patient care by sharing at least 2 articles per week that relate to current patient cases</td>
</tr>
<tr>
<td>Interpersonal and Communication Skills</td>
<td>• Demonstrate the ability to effectively communicate with the patient’s primary care providers in the inpatient, outpatient and external settings. Communication should include a discussion of the indications for the procedure, findings, and implications for patient care.</td>
</tr>
</tbody>
</table>
| Professionalism | • Demonstrate ability to interact with all members of the primary health care team, patients, and family members as a consultant providing a procedure for diagnostic and management purposes.  
• Maintain professional relationships with healthcare team as a team member. |
| Systems-Based Practice | • Demonstrate expertise in using health-care system resources to provide optimal patient care (i.e. in-patient vs. out-patient consultation and testing). |

**Evaluation:** RMS global rating by faculty

**Conferences – Attendance is Mandatory:**
- HemeMalignancy conference (Monday, 2nd and 4th)
- Daily morning case conference rounds
- Tuesday and Thursday morning Hematopathology Lectures and Review of Unknown

**References:**
- WHO Classification of Tumours Pathology and Genetics of Tumours of Haematopoietic and Lymphoid Tissues IARC Press, 2008 (very helpful to have own copy)
- Hematopathology CD review program on computer
- Hematopathology; Jaffe, Harris, Varidman, Campo, Arber; Saunderes/Elsevier, 2011
UMMC - Core Conferences
The program has created a core curriculum lecture series and conference schedule based upon ACGME and ABIM curriculum requirements and department goals. Fellows are REQUIRED to attend 80% of all mandatory conferences. Conference attendance sign-in sheets are provided at the conferences and will be monitored by the Fellowship Program Director.

<table>
<thead>
<tr>
<th><strong>Monday</strong></th>
<th>Time</th>
<th>Conference</th>
<th>Location</th>
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<tbody>
<tr>
<td>Noon</td>
<td></td>
<td>Medicine Research Conference</td>
<td>Room 450 MCRB</td>
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<td></td>
<td></td>
<td>First &amp; Third Mondays</td>
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<tr>
<td></td>
<td></td>
<td>GI Malignancy Conference</td>
<td>Room B-216 Mayo</td>
</tr>
<tr>
<td></td>
<td>(Alternates between hepatobiliary/colorectal)</td>
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<tr>
<td><strong>1:15 p.m.</strong></td>
<td></td>
<td>Bone Marrow Transplant Conference</td>
<td>Room 450 MCRB</td>
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<tr>
<td><strong>3:15 p.m.</strong></td>
<td></td>
<td>BMT/Heme Malignancy Conference</td>
<td>Room 14-136 PWB</td>
</tr>
<tr>
<td><strong>4:15 p.m.</strong></td>
<td></td>
<td>Heme Malignancy Pathology Conference</td>
<td>Room D175 Mayo</td>
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<tr>
<td></td>
<td>(2nd &amp; 4th Mondays)</td>
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<tr>
<th><strong>Tuesday</strong></th>
<th>Time</th>
<th>Conference</th>
<th>Location</th>
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<tbody>
<tr>
<td>Noon</td>
<td></td>
<td>Cancer Center Seminar</td>
<td>Room 450 MCRB</td>
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<td></td>
<td></td>
<td>Thoracic Tumor Conference</td>
<td>115 KE Lillehei</td>
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<tr>
<th><strong>Wednesday</strong></th>
<th>Time</th>
<th>Conference</th>
<th>Location</th>
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<tbody>
<tr>
<td>Noon</td>
<td></td>
<td>Divisional Clinical Conference***</td>
<td>Room B-522 Mayo</td>
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<thead>
<tr>
<th><strong>Thursday</strong></th>
<th>Time</th>
<th>Conference</th>
<th>Location</th>
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<tbody>
<tr>
<td>Noon</td>
<td></td>
<td>Medicine Grand Rounds</td>
<td>Room 2-650 MT or Room 2-620 MT</td>
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<table>
<thead>
<tr>
<th><strong>Friday</strong></th>
<th>Time</th>
<th>Conference</th>
<th>Location</th>
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<tbody>
<tr>
<td><em>8:00 a.m.</em></td>
<td></td>
<td>Fellows Journal Club / Hematology - Oncology Grand Rounds</td>
<td>Room 450 MCRB</td>
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<tr>
<td><em>9:00 a.m.</em></td>
<td></td>
<td>Garibaldi Research Conference</td>
<td>Room 450 MCRB</td>
</tr>
<tr>
<td><em>10:00 a.m.</em></td>
<td></td>
<td>Core Curriculum</td>
<td>Room 450 MCRB</td>
</tr>
<tr>
<td><strong>Noon</strong></td>
<td></td>
<td>Morbidity and Mortality Conference</td>
<td>Room 2-470 PWB or Room 2-650 MT</td>
</tr>
</tbody>
</table>

MCRB = Masonic Cancer Center Research Building
MT = Moos Tower
PWB = Philips Wangensteen Building
*
** Attendance at these conferences is required
** Attendance required if on UMMC rotation
*** Except the first Wednesday of the month
### Monday

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00 a.m.</td>
<td>Thyroid Cancer Conference</td>
<td>PWB 6-210</td>
</tr>
<tr>
<td>7:30 a.m.</td>
<td>Palliative Care Journal Club</td>
<td>Hospital Boardroom, 8th Floor</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>GI Malignancy Conference</td>
<td>Mayo B216</td>
</tr>
<tr>
<td>1:00 p.m.</td>
<td>Neuro-Surgery Brain Tumor Conference</td>
<td>Mayo C456</td>
</tr>
<tr>
<td>1:15 p.m.</td>
<td>BMT Conference</td>
<td>450 MCRB</td>
</tr>
<tr>
<td>3:15 p.m.</td>
<td>BMT/Heme Malignancy Conference</td>
<td>14-109 PWB</td>
</tr>
<tr>
<td>4:15 p.m.</td>
<td>Heme Malignancy Pathology Conference</td>
<td>Mayo D175</td>
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<td></td>
<td>Contact Tina Russell for location;</td>
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<td>612-625-2991</td>
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### Tuesday

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>9:00 a.m.</td>
<td>Cancer Center Seminar</td>
<td>1st Floor, CCRB</td>
</tr>
<tr>
<td>Noon</td>
<td>Thoracic Tumor Conference</td>
<td>115 KE</td>
</tr>
<tr>
<td>Noon</td>
<td>Clinical Pathology</td>
<td>D175 Mayo</td>
</tr>
<tr>
<td>3:30-5:30 p.m.</td>
<td>Ther Rad</td>
<td>Ther Rad Conf Rm</td>
</tr>
<tr>
<td>Transfusion Med</td>
<td>Lecture Series</td>
<td>D235 Mayo</td>
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### Wednesday

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00 a.m.</td>
<td>OB-GYN Tumor Conference</td>
<td>450 MCRB</td>
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<tr>
<td>5 p.m.</td>
<td>Urology Conferences</td>
<td>450 MCRB</td>
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<tr>
<td></td>
<td>1st Wed = radiology</td>
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<td></td>
<td>2nd Wed = pathology</td>
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<td>4th Wed = pathology CPC slides</td>
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### Thursday

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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00 a.m.</td>
<td>Orthopedic (Sarcoma) Tumor Conf</td>
<td>1-300 PWB</td>
</tr>
<tr>
<td>7:00 a.m.</td>
<td>Ob/Gyn Path/Pt care</td>
<td>12-224 MT</td>
</tr>
<tr>
<td>8:30 a.m.</td>
<td>Transfusion Med Brkfst</td>
<td>Boardroom Mayo</td>
</tr>
<tr>
<td>11:00-12</td>
<td>Thoracic Oncology Conference</td>
<td>Lillihei 114</td>
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</tbody>
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### Friday

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>7:00 a.m.</td>
<td>Breast Cancer Conference</td>
<td>Mayo C456</td>
</tr>
<tr>
<td>11:00am-12:30p.m.</td>
<td>Head and Neck Tumor Conference</td>
<td>8th floor PWB</td>
</tr>
</tbody>
</table>
UMMC Masonic Cancer and Blood Disorders Clinic – General Information

Masonic Cancer and Blood Disorders Clinic (424 Harvard Street, 1st Floor of the Masonic Cancer Center, phone 612-625-5411)
The Clinic is open 8:00 a.m. to 4:30 p.m., Monday through Friday. A pharmacy is located on site in the Infusion Center on the third floor and stocks most chemotherapy drugs. PDRs and protocol books are located in the conference room and are not to leave the clinic.

Rotation Director: Dr. Anne Blaes (blaes004@umn.edu)
Triage Nurses: (Office: 612-625-9627; FAX: 612-626-2744)
Front desk fax: 612-625-6137
New Patient Scheduler: 612-625-5411
Pharmacy: 612-625-4900

Clinic Routine:
• Patients have their vital signs checked and are then assigned a room. The whiteboard in the physician workroom will note if a patient has arrived and the room assignment.
• Enter your progress note or new patient evaluation into the EMR and send to your attending physician for co-signing.
• Return to clinic orders are placed into the EMR. All X-rays, scans, and blood work needed for the return appointment should be ordered in the EMR at this time. If you will see the patient at return, you MUST include your name as well as the staff's name.
• If a patient is to return for chemotherapy and does not need to see a physician, this return may be scheduled as a "nurse appointment." Chemotherapy orders, lab requests, and lab value guidelines must be included in Beacon (EPIC module for chemotherapy).

Masonic Infusion Center (3rd Floor Masonic, Phone 612-626-5441)
A pharmacy is located on site in the Infusion Center on the third floor and stocks most chemotherapy drugs. Blood product transfusions, high volume IV flushes, ATG, and immunoglobulin infusions are also administered in the Masonic Infusion Center. The Center is open 7:00 a.m. to 7:00 p.m., Monday through Friday. If a patient needs a transfusion, the following factors need to be considered:

• Type and cross takes at least two hours.
• Platelets are available in about 40 minutes.
• The order needs to be written for the transfusion. Include any need for irradiated products, premeds, transfusion date, rate and amount; post-transfusion labs; who to call with questions/problems, and document consent.

Written orders are the physician's responsibility.

OUTPATIENT LUMBAR PUNCTURE SCHEDULING (IF BEING DONE BY NP/PAs)
For outpatients requiring LP under Fluoroscopy:

Schedulers:
--Schedule return clinic visit for Tanya coinciding with the radiology visit
--Write chemo orders for FV Inpatient pharmacy (fax: 612-273-8450). They prefer 24 hour notice.
--Write radiology orders for UMMC radiology scheduling. Radiology needs the pager of the person doing the LP on the order so that they can page when the patient is ready.

MDs:
--Chemo orders need to be signed in advance
--Complete orders with any tests you want on the fluid (cytology, flow, etc.)--via EMR orders

NP/PA:
--Call inpatient pharmacy (612-273-3066) when ready for chemo. They require about 30 minutes to make the chemo. They can page you when ready for pickup. Pharmacy is located near the loading dock in the first floor of the hospital (past endoscopy, room 1-550)
--Fluoroscopy will page when the patient is ready

For outpatients requiring bedside LP/chemo in Masonic Clinic (IF BEING DONE BY NP/PAs):

Schedulers:
--Schedule return clinic visit for Tanya
--Give Oncology Infusion Pharmacy (612-625-4900) notice regarding when the LP with chemo is scheduled so they can verify that chemo will be covered by insurance.

MD's:
--Put order for LP with Tanya on check-out instructions in EMR
--Chemo orders need to be signed in advance

NP/PA:
--Call Oncology Infusion Pharmacy (612-625-4900) when you are ready for chemo (counts ready, etc.) Pick up when ready.

Other suggestions:
If the patient requires counts/blood products please arrange prior to scheduled procedure.
Any advanced scheduling and flexibility in scheduling would be appreciated as NP/PA schedules are limited. As you know the procedure itself doesn’t take much time, but the coordination can be time-consuming.

For inpatient IT chemo: the ward team usually arranges this, but the pharmacy still requires advanced notice, so the earlier the better for entering orders.
B. Veterans Administration Medical Center (VAMC) Consults

**Location:** VAMC, Minneapolis, MN  
**Duration:** 1 month  
**Staff:** The service is staffed with one staff attending and one fellow  
**Call:** Fellows will take 1st call during the week. On weekends, the fellow will have one day off and 1st call will be taken by the attending Hematology/Oncology staff physician.  
**Faculty:** Dr. Ayse Dincer, Dr. Pankaj Gupta, Dr. Gerhard Johnson, Dr. Mark Klein, Dr. Sharon Luikart, Dr. Vicki Morrison, Dr. Anna Schorer  

**Contacts:**  
Sharon Luikart MD  
Chief, Section of Hem/Onc  
(W) 612-725-2000 x 4135  
(P) 612-818-7794  
(H) 651-642-1835  
Mark Klein MD  
VA Fellowship Site Director  
(W) 612-725-2000 x 4682  
(P) 612-818-1146  
(H) 651-484-4508  

**General Description:**

The mission of this clinical service is to promote optimal care of patients with hematologic and oncologic problems, to provide an opportunity for resident and fellow education in patient management, and to conduct clinical research. The clinical rotation describes the umbrella of services for patients cared for by the Hematology/Medical Oncology service within the VAMC. Clinical services include the Hematology/Oncology in-patient Red Service, consult service, and ambulatory Hematology/Oncology clinic.

**Fellow Responsibilities and Lines of Responsibilities within the Team:**

**Note:** Also Refer to Faculty Supervision and Graded Responsibility, page 24, Fellowship Curriculum

The Red Service provides inpatient care for patients receiving routine chemotherapies who are otherwise medically stable. During the week, the NP/PA cares for these patients with the staff. On weekends, the fellow is responsible for providing care for these patients with the attending staff. The Hematology/Oncology consult service provides an interdisciplinary consult role at the VAMC.

The Hematology/Oncology consult team consists of an attending Hematology/Oncology staff physician, a Hematology/Oncology fellow, and at times a medical resident and/or medical student.

The consult team will implement therapy, monitor the patient’s response, suggest corrective measures if problems arise, and facilitate discharge planning. The Hematology/Oncology service will provide comprehensive care to their patients, including chemotherapy, monitoring blood products, symptomatic care, and timely referral for other problems. The fellow is responsible for assuring that all consultations are seen and staffed in a timely manner.

The fellow will present patient cases and actively participate in attending rounds. The fellow should complete a comprehensive history/physical examination, develop a basic plan of care, and present the case to the team in attending rounds. The fellow will participate in interdisciplinary team
discussions for patient care (including services such as Radiation Oncology and Surgery). All urgent/emergent consults should be discussed immediately with the attending staff. Clinic patients are scheduled on an as-needed basis, and will be evaluated by the fellows, and staffed with the attending physician.

VAMC: Educational Objectives

Upon completion of this rotation the fellow will be able to:

1. Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with a focus on:
   • Lung cancer
   • Prostate cancer
   • Other solid tumors
   • Myelodysplastic syndrome
   • Other hematologic malignancies such as AML, lymphoma

Evaluation: RMS Global rating by staff attending.

2. Know and apply the principles of effective Hematology/Oncology consultation:
   • Appropriate therapeutic relationship with patient and family
   • Understand differences in direct care, consultative opinion, and consultative management
   • Identify responsibility for execution of plan/follow-up
   • Complete a comprehensive Hematology/Oncology assessment of each patient including an appropriate documentation of diagnosis and staging as designated by the American Joint Committee on Cancer (AJCC) and develop a plan for management
   • Understand the process and function of interdisciplinary collaborative roles provided by other services such as Radiation Oncology and Surgery

Evaluation: Random patient charts will be assessed by the staff attending as to whether the fellow’s consult notes appropriately identify the patient’s diagnosis, AJCC stage of disease, and intended treatment plan. This assessment will be reflected in the RMS global rating. One mini-CEX must be completed during each monthly rotation at the VAMC.

Objectives for the Second Clinical Rotation (Fellows returning for an additional clinical rotation at VAMC) include the goals above plus:

1. Act as an overseer and teacher for both medical students and residents rotating through the Hematology/Oncology service.
   • The fellow will hold one "chalk-talk" per week for the students/residents
   • The fellow will provide an article on a relevant patient care problem for at least one patient/week seen by the team

Evaluation: Informal feedback by team members to the staff attending will be used for the global assessment.

2. Understand the role of clinical research trials in patient care and the process of informed consent for participation in research trials.
• Understand structure and function of current clinical cooperative research trial groups
• Identify current clinical research trials available for patients
• Coordinate patient participation in such clinical research trials

Evaluation: Random patient charts will be assessed as to whether the fellow’s proposed treatment plan appropriately addresses the availability of current clinical research trials.

3. Complete a comprehensive history/physical and develop a comprehensive and interdisciplinary plan of care prior to discussion with the attending Hematology/Oncology staff physician

• Evaluate consistency of current plan of care with prognosis
• Identify reasonable challenges to completion of plan of care
• Formulate plan to bring multiple disciplines into agreement with the proposed plan
• Understand costs of health care in America for Hematology/Oncology medical conditions

Evaluation: Random patient charts will be assessed as to whether the proposed treatment plan is in keeping with the patient’s prognosis and whether documentation exists of past discussions with other specialty services and their future role in the treatment plan.

4. Coordinate an interdisciplinary treatment plan for the Hematology/Oncology patient with a terminal illness

• Understand current therapeutic limits and when supportive care and hospice referral is most appropriate

Evaluation: Global rating by staff attending.

5. Demonstrate professionalism in the care of patients from different cultures, elderly patients, and patients with disabilities.

Evaluation: Global rating by staff attending based on direct observation of the fellow's interactions with patients and their families.

VAMC Conferences:

Attendance is Mandatory if not engaged in patient care

• Patient Care Conference: Alternate Mondays 1-2 pm, 3V 164
• Hematopathology Conference: Alternate Mondays 1-2 pm, Pathology Conference Room
• ENT Tumor Board: Wednesday 11 am-12 noon, ENT Conference Room
• Thoracic Tumor Board: Tuesday 8-9 am; Radiology Conference Room
• Urology Tumor Board: 3rd Thursday of the month; 7:15 am, Urology Conference Room
• GI Tumor Board: monthly, Wednesday 12-1 pm, Radiology Conference Room

Attendance is Optional

• Medicine Grand Rounds: Held every Friday 12-1 p.m.
• Morbidity & Mortality: Every Wednesday from 12-1 p.m.
• Research Conference: Every Thursday from 12-1 p.m.
• Core Lectures for residents: Held every Monday and Tuesday from 12-1 p.m
VAMC Educational Objectives in the Context of the ACGME Core Competencies:

Patient Care
- Documentation of diagnosis, staging studies, clinical stage (using AJCC staging), and intended treatment plan in consult
- Formulate and document reasonable prognosis
- Documentation of the planning and coordination of follow-up care

Medical Knowledge
- Demonstrate that management plan for the patient is appropriate for both the diagnosis and stage of disease
- Awareness of established NCCN Oncology guidelines for patient’s disease and stage
- Identify appropriate clinical research trials that are available

Practice-Based Learning and Improvement
- Evaluate consistency of current plan of care with prognosis
- Identify reasonable challenges to completion of plan of care
- Formulate plan to bring multiple disciplines in to agreement with the proposed plan

Interpersonal and Communication Skills
- Appropriate therapeutic relationship with patient and family
- Understand differences in direct care, consultative opinion, and consultative management
- Identify responsibility for execution of plan/follow-up

Professionalism
- Sensitivity to patient and families’ culture, age, and disabilities

Systems-Based Practice
- Understand costs of health care in America for Hematology/Oncology medical conditions
- Understand structure and function of current clinical cooperative research trial groups

Reading List and References:

Texts:
- Wintrobe’s Clinical Hematology, John P. Greer, John Foerster, John N. Lukens, George M. Rodgers, Frixos Paraskevas, and Bertil Glader. Lippincott, Williams & Wilkins, Philadelphia, PA.

Reviews and journal articles:
It is suggested that by the end of the 2nd month of rotations at the VA, nearly all of the following journal articles will have been read by the rotating fellows. This is not a comprehensive list and only highlights papers you should be familiar with. Your own literature searching will continue to be of paramount importance.
*Please see VA Oncology Ambulatory-Outpatient Elective rotation description for complementary bibliography. We recommend that you start with these articles and move to that list when you finish this list.*

**Prostate Cancer**


**Bladder Cancer**


**Renal Cell Carcinoma**


**Non-small cell lung cancer**

Small cell lung cancer

Mesothelioma

Head/neck cancer


Supportive Care and Miscellaneous


AML and Myelodysplastic syndromes

1. Kantarjian, H. et al. Results of intensive chemotherapy in 998 patients age 65 years or older with acute myeloid leukemia or high risk myelodysplastic syndrome. Cancer 2006;106:1090-1098.

2. Farag, S.S. Pretreatment cytogenetics add to other prognostic factors predicting complete remission and long-term outcome in patients 60 years of age or older with acute myeloid leukemia; results from Cancer and Leukemia Group B 8461. Blood 2006;108:63-73.


**Other Hematologic Malignancies**


**Gastrointestinal Malignancies (focus on Colon)**


### VAMC Consults and Clinic Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level</th>
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</thead>
<tbody>
<tr>
<td><strong>Patient Care</strong></td>
<td><strong>PGY 4 (First year fellow)</strong></td>
</tr>
<tr>
<td>• Document diagnosis, staging studies, clinical stage (using AJCC staging), and intended treatment plan in consult note or clinic note.</td>
<td>• Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes for patients with solid tumors.</td>
</tr>
<tr>
<td>• Understand test results within the context of a patient’s diagnosis and treatment plans.</td>
<td>• Demonstrate ability to participate in a multidisciplinary team in the effective delivery of health care.</td>
</tr>
<tr>
<td>• Formulate and document reasonable prognosis</td>
<td>• Maintain comprehensive, timely, legible, and appropriately detailed medical records.</td>
</tr>
<tr>
<td>• Document the planning and coordination of follow-up care</td>
<td></td>
</tr>
<tr>
<td>• Maintain comprehensive, timely, legible, and appropriately detailed medical records.</td>
<td></td>
</tr>
<tr>
<td><strong>Medical Knowledge</strong></td>
<td><strong>PGY 4 (First year fellow)</strong></td>
</tr>
<tr>
<td>• Gain an understanding of the structure and function of cooperative groups in cancer research</td>
<td>• For each patient, determine is there is a clinical trial available for which the patient is eligible</td>
</tr>
<tr>
<td>• Become aware of established NCCN Oncology guidelines for patient’s disease and stage</td>
<td>• Be able to articulate the NCCN Oncology guidelines for patient’s disease and stage, and teach others</td>
</tr>
<tr>
<td><strong>Practice Based Learning and Improvement</strong></td>
<td><strong>PGY 4 (First year fellow)</strong></td>
</tr>
<tr>
<td>• Present cases at patient care conferences with assistance of faculty attending, and lead the discussion.</td>
<td>• Present cases at patient care conferences with minimal assistance by faculty attending, and incorporate new knowledge into one’s practice.</td>
</tr>
<tr>
<td>• Identify challenges to completion of plan of care</td>
<td>• Identify challenges to completion of plan of care and how to surmount them</td>
</tr>
<tr>
<td>Interpersonal and Communication Skills</td>
<td>Professionalism</td>
</tr>
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</table>
| • Triage night and weekend phone calls with faculty assistance on the majority of calls.  
• Understand differences in the communication skills needed for direct care, consultative opinion, and consultative management  
• Identify responsibility for execution of plan/follow-up  
• Maintain an appropriate therapeutic relationship with patient and family  
• Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan | • Demonstrate ability to interact with all members of health care team, patients, and family members  
• Demonstrate sensitivity to patient and families’ culture, age, and disabilities | • Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.  
• Demonstrate expertise in communication skills for providing direct care, consultative opinion, and consultative management  
• Identify responsibility for execution of plan/follow-up and ascertain that the plan is carried out to completion  
• Maintain an appropriate therapeutic relationship with patient and family  
• Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan, then ascertain that plan is completed.  
• Demonstrate competence in all interactions with all members of health care team, patients, and family members  
• Demonstrate sensitivity to patient and families’ culture, age, and disabilities, and teach others |
C. Regions Hospital Consults and Clinic

**Location:** Regions Hospital, St. Paul, MN  
**Duration:** 1 month  
**Staff:** The service is staffed with one staff attending and two fellows  
**Call:** The fellow takes night call from home 6/7 nights; the staff attending takes call 7/7 nights. The fellow day off is usually Sunday.  
**Faculty:** Dr. Randy Hurley (Department Head), Dr. Jeff Jaffe, Dr. Colleen Morton, Dr. Dan Anderson, Dr. Kurt Demel, Dr. Balkrishna Jahagirdar, Dr. Steve McCormack, Dr. Priya Kumar  
**Contact:** Dr. Jeff Jaffe, Fellowship Site Director  
Phone: 651-254-2299  
Pager: 612-580-0314  
Email: jeffry.p.jaffe@healthpartners.com

**General Description:**

The Hematology/Oncology rotation for fellows at Regions consists of a busy inpatient consultation service as well as extensive outpatient experience. Each fellow will spend 2 weeks on the inpatient service and 2 weeks on the outpatient service during each month rotation when there are 2 fellows assigned to Regions. When there is one fellow assigned, there will be morning outpatient experience followed by the inpatient consult service depending on the inpatient census. When an Internal Medicine Resident is assigned, the fellow will spend up to a half day in the morning outpatient setting.

The inpatient service is primarily a consult service; approximately 60 consults/month including a broad variety of both benign hematology, coagulation, and malignant disease. There is also occasionally a small primary oncology service consisting of Hospice cases and protocol patients on chemotherapy.

The outpatient experience consists of 5 full day clinics where the fellow will see both new and follow-up patients, working with each of the attending staff. The patient mix is approximately 30% benign Hematology and 70% malignant disease, and the fellow has the opportunity to manage many "new" patients primarily for their initial staging and treatment.

There are extensive didactic sessions including morphology training, Grand Rounds, hospice/palliative care rounds, and a weekly multidisciplinary cancer conference, as well as monthly neuro-oncology and urologic oncology conferences. Active participation in clinical research through cooperative group trials is encouraged, with over 150 NCI approved clinical trials available for patient treatment. Dr. Jaffe conducts a bone marrow clinic each Thursday during which the fellow may gain expertise in the performance and review of bone marrows and peripheral blood smears. There will also be extensive training in coagulation laboratory techniques and clinical management of patients with hemostasis/thrombotic issues (coag laboratory – Dr. Jeff Evens on Monday and Wednesdays; coag clinic – Dr. Colleen Morton – either Tuesday or Wednesday). Clinical topics to be covered will include uses of rFVII, Coumadin reversal, protamine reversal of low molecular weight heparin and unfractionated heparin, bleeding following thrombolytic therapy, Coumadin bridging and management, argatroban and lepirudin use in heparin induced thrombocytopenia, and massive transfusion protocol and blood product use.
**Fellow Responsibilities and Lines of Responsibilities within the Team:**

**Note:** Also Refer to Faculty Supervision and Graded Responsibility, page 24, Fellowship Curriculum

The fellow is responsible for seeing that all inpatient consults are performed and staffed in a timely manner (within 24 hours). If there is a resident on the service, the fellow is responsible for assigning consults to the resident and assuring that the resident sees the patient in a timely manner. The fellow prioritizes consults, and reports directly to the faculty attending each day. The fellow is responsible for seeing new patients in the outpatient clinic and follow-up patients during each assigned clinic day, and staffing them with the faculty attending. With repeated educational experiences, it is expected that the fellow will assume greater responsibility and ultimately lead the team in all aspects with minimal faculty attending support.

The fellow will participate in the Bone Marrow Clinic under Dr. Jaffe’s direction. The fellow will be trained and perform multiple procedures including bone marrows and instillation of intrathecal therapy.

As the fellow rotates at Regions hospital on multiple occasions, there will be increasing responsibilities in the areas of therapeutic decision-making, coordination of multispecialty care of cancer patients (Oncology/surgery/XRT), performance of procedures, and teaching of students and residents.

**First Rotation:** Focus is on the basic pathophysiology and natural history of cancer and hematologic diseases. The emphasis is on the initial diagnosis and staging, interactions with patients, families and staff, and instruction on the basics of consultative Hematology/Oncology. Initial instruction in the performance of bone marrows and intrathecal chemotherapy is completed. There will be time assigned with the chemotherapy nurses and pharmacists to learn about the direct administration of chemotherapy.

**Introduction to Chemotherapy Infusion Oncology Fellow Learning Experience**

**Description:** Provide a ½ day hands-on learning experience in the Regions Cancer Care Center chemo infusion room for each first year Oncology Fellow during their first Regions rotation

**Preceptors:** Carol Muntean, RN, OCN
Randy Hurley MD, BS Pharmacy, CTropMed

**Objectives:**
1. Describe general principals of chemotherapy preparation and administration
2. Describe general maintenance and access of central venous catheter devices
3. Discuss management of chemotherapy infusion reactions and other less common chemotherapy-induced emergencies
4. Describe the approach to chemotherapy extravasation
5. Describe the management of common chemotherapy side effects

**Methods:**
1. Preceptor shadowing ½ day in Regions Chemo Infusion Center
2. Participate in chemotherapy class for patients
3. Reading Syllabus
Evaluation: complete on-line survey

Syllabus:
1. Lenz HJ. Management and preparedness for infusion and hypersensitivity reactions. The Oncologist 2007;12:601-09
3. Schulmeister L. Extravasation management. Semin Oncol Nursing 2011;27:82-90

Second Rotation: Builds on the above skills and emphasizes therapeutic decision-making and coordination of surgery, chemotherapy, and XRT based on evidence in the medical literature and randomized clinical trial data. Instruction in the art of “difficult conversations” and end of life counseling are emphasized. Procedures are performed independently.

Third (Senior) Rotation: The Fellow will basically run the service with attending staff support. They will act as the primary consultant and coordinate care and therapeutic interventions with the families, primary care provider, and related specialties. Additional experience in Palliative Care/Hospice will be provided.
Regions: Educational Objectives

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on:
   - Common cancers including breast, lung, colorectal, prostate, and hematologic cancers
   - Evaluation of anemia, thrombocytopenia (including heparin induced thrombocytopenia), pancytopenia
   - Evaluation of gammopathies and amyloidosis
   - Evaluation of the clotting and/or bleeding patient

   Evaluation: In-training exam and staff attending evaluation.

2. Demonstrate the skills of an effective consultant in hematology/medical oncology.

   Evaluation: RMS global rating form filled out by the attending staff. **One mini-CEX should be completed on each rotation.**

3. Incorporate practice based learning into daily patient care by reviewing the NCCN guidelines (at www.NCCN.com) on staging, treatment, and surveillance on at least 2 patients per week in clinic. Check patient’s chart for adherence to recommendations and discuss rational for deviation with the staff.

   Evaluation: Global rating form filled out by the attending staff.

4. Maintain professional relationships with healthcare team, as a leader or member.

   Evaluation: Global rating form filled out by the attending staff.

5. Maintain comprehensive, timely, legible, and appropriately detailed medical records as a consultant.

   Evaluation: Staff will review of 2 consult notes to ensure all relevant diagnostic, AJCC staging, and treatment information is properly delineated.

6. Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent.
   - The first month on the rotation, the fellow will decide with the staff which tests to order on the bone marrow biopsies and aspirates.
   - The second month on the rotation, the fellow will make the initial decision on which tests to order and review with the staff.

   The fellow will also review the slides with Dr. Jaffe and/or the hematopathologist to ensure adequacy of the biopsy and aspirate.

   Evaluation: Staff acknowledgement of performed procedures and review of results of at least two of the bone marrow biopsies with the fellowship director at the year-end review. (Copies of the bone
marrow biopsy reports should be maintained in the fellow's portfolio with all patient identifiers removed/blacked out.)

7. Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.
   • The first month on the rotation, the fellow should write at least 2 chemotherapy orders cooperatively with the staff.
   • The second month on the rotation, the fellow should write at least 2 chemotherapy orders independently and then review with the staff.

Evaluation: Staff acknowledgement of performed procedures.

Conferences:

Attendance is mandatory
   • Multidisciplinary Cancer Conference: Held every Tuesday at 7:00 a.m
   • Pathology Review Conference: Every Wednesday at 7:00 a.m
   • Bone Marrow Clinic: Held every Thursday, 9:30 – noon.

Attendance is Optional
   • Multidisciplinary Hospice/Palliative Care Rounds: Held every Wednesday at 1 p.m.
   • Daily Internal Medicine Core Curriculum lectures: Held at noon.
   • Medicine Grand Rounds: Alternates with Morbidity & Mortality conference. Held Wednesdays at noon.
   • Morbidity & Mortality: Alternates with Medicine Grand Rounds. Held Wednesdays at noon.
   • Neuro-Oncology: third Friday of each month.
   • Urologic Oncology: third Wednesday of each month.

Reading List:
Gammapathies:
Anemia:


Thrombocytopenia


Breast cancer

- Gene expression and benefit of chemotherapy in women with node-negative, estrogen receptor-positive breast cancer. Paik et al. JCO 2006;24(23):3726.
### Regions Hospital Consults and Clinic Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>PGY 4 (First year fellow)</th>
<th>PGY 5/6 (Second/third year fellow)</th>
</tr>
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</table>
| Patient Care        | • Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent  
                     • Understand test results in the context of a patient’s diagnosis and treatment plans.  
                     • Begin to understand how to prescribe and administer chemotherapeutic and biologic agents through all therapeutic routes for patients with hematology and oncologic disorders. Write orders with staff supervision.  
                     • Document the planning and coordination of follow-up care  
                     • Maintain comprehensive, timely, legible, and appropriately detailed medical records.                                                                                                                    | • Demonstrate competence in the performance and interpretation of 2 bone marrow biopsies and aspirates incorporating the process of informed consent  
                     • Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes for patients with hematology and oncologic disorders. Independently write orders for co-signing by staff.  
                     • Demonstrate ability to participate in a multidisciplinary team in the effective delivery of health care, and to be a team leader when the situation is appropriate to do so.  
                     • Maintain comprehensive, timely, legible, and appropriately detailed medical records.                                                                                                                                    |
| Medical Knowledge   | • Gain an understanding of the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on breast cancer, renal cell carcinoma, the evaluation of anemia, thrombocytopenia, and hemostasis/thrombosis issues. | • Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on breast cancer, renal cell carcinoma, the evaluation of anemia, thrombocytopenia, and hemostasis/thrombosis issues. |
| Practice Based Learning and Improvement | • Present cases at patient care conferences with assistance of faculty attending, and lead the discussion.  
• Identify challenges to completion of plan of care  
• Incorporate practice based learning into daily patient care by reviewing the NCCN guidelines on staging, treatment, and surveillance on at least 2 patients per week in clinic. Check patient’s chart for adherence to recommendations and discuss rational for deviation with the staff. | • Present cases at patient care conferences with minimal assistance by faculty attending, and incorporate new knowledge into one’s practice.  
• Identify challenges to completion of plan of care and how to surmount them  
• Independently incorporate practice based learning into daily patient care by incorporating the NCCN guidelines on staging, treatment, and surveillance on all patients. Check patient’s chart for adherence to recommendations. |
| Interpersonal and Communication Skills | • Triage night and weekend phone calls with faculty assistance on the majority of calls.  
• Understand differences in the communication skills needed for direct care, consultative opinion, and consultative management  
• Identify responsibility for execution of plan/follow-up  
• Maintain an appropriate therapeutic relationship with patient and family  
• Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan | • Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.  
• Demonstrate expertise in communication skills for providing direct care, consultative opinion, and consultative management  
• Identify responsibility for execution of plan/follow-up and ascertain that the plan is carried out to completion  
• Maintain an appropriate therapeutic relationship with patient and family  
• Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan, then ascertain that plan is completed. |
| Professionalism | • Demonstrate ability to interact with all members of health care team, patients, and family members  
• Demonstrate sensitivity to patient and families’ culture, age, and disabilities | • Demonstrate competence in all interactions with all members of health care team, patients, and family members  
• Demonstrate sensitivity to patient and families’ culture, age, and disabilities, and teach others |
| Systems-Based Practice | Demonstrate understanding of health care resources in the Regions Hospital setting and begin to identify areas for improvement  
Demonstrate an understanding of allocation of resources that does not compromise quality of care. | Demonstrate expertise in utilization of health care resources in the Regions Hospital setting and identify at least one area for improvement  
Lead the development of a system wide plan for individual patients that does not compromise quality of care. |
D. Hennepin County Medical Center Consults and Clinic (HCMC)

Location: HCMC
Duration: 1 month
Staff: The service is staffed by one staff attending, one fellow; one to three residents.
Call: The residents are always responsible for first call. The staff physician is always available for staff call. The fellow is encouraged to keep the beeper on for backup call from the residents, but the fellow never has primary call responsibility unless special arrangements are made. The faculty will also work with the fellow to determine one week when the fellow will not have the pager on and will be free from call.
Faculty: Dr. Doug Rausch, Dr. Kathy Ogle, Dr. Michael Belzer, Dr. Rachel Koreth, Dr. Josy Matthew, Dr. Andres Wiernik
Contact: Dr. Doug Rausch
Fellowship Site Director and Division Chief
Phone: (612) 873-6369; cell 612-298-0941
Pager: (612) 740-1878
Email: Douglas.Rausch@hcmed.org

General Description:

This is a monthly rotation with a primary focus on developing effective consultation skills and enhancing one's knowledge base in a wide variety of hematologic and oncologic disorders. HCMC is a large, inner city, safety net hospital that serves indigent patients as well as patients with insurance. Strengths of the HCMC experience include the primary care nature of the hematology and oncology patients. In addition, HCMC has a large HIV population, a large immigrant population, and a large underserved population leading to hematology and oncology cases not commonly seen at other hospitals in the state of Minnesota. HCMC has its own internal medicine residency program. Residents within the program are dedicated to the primary care of their patients, thus the fellow has the ability to act in a supervisory and consulting role the vast majority of the time.

Fellow Responsibilities and Lines of Responsibilities within the Team:
Note: Also Refer to Faculty Supervision and Graded Responsibility, page 24, Fellowship Curriculum

The fellow will see hematology and oncology patients both in clinic and as a consultant on the inpatient services. There is no inpatient hematology/oncology service, so patients are admitted to a general medicine service where the team acts as closely involved consultants. Residents on the consult service will be primarily responsible for following the inpatients while the fellow will act as an overseer and teacher (although, the fellow may be responsible for some patients depending on the workload and abilities of the residents), and directly reports to the attending physician. By the level of a senior fellow (PGY 5/6), the fellow should be functioning independently to lead the team with minimal faculty input.
Clinic starts at 8:00 a.m., four mornings a week (M-W-Th-F) and sometimes on Tuesdays. There are usually between 15 and 20 patients each morning. Fellows will see patients independently, formulate care plan, and discuss with faculty. On subsequent rotations, the fellow should take greater responsibility in formulating care plans independently with minimal faculty supervision. In addition, there are occasionally walk-in patients in the afternoon. Consult rounds begin each afternoon at 2:00 p.m. Ten to 15 patients are typically followed by the team with 1-3 new consults each day.

The Staff gives a lecture a 7:30 a.m. MWF prior to clinic for residents on basic topics, and the fellows are strongly encouraged both to attend and to develop at least one topic/week for presentation to the team.

**Educational Objectives:**

*By the completion of this rotation, the fellow will be able to:*

1. Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on:
   - HIV and AIDS associated malignancies
   - Bladder cancer
   - Germ cell tumors
   - Primary hepatobiliary malignancies
   - Myeloproliferative disorders

**Evaluation:** In-training exam and assessment by faculty attending.

2. Apply knowledge of health systems to use resources in providing optimal patient care. The fellow will meet with the social worker to discuss home health care and long term care options on 3 patients they are caring for either on the in-patient consult service or in the clinic.

**Evaluation:** Review notes from these meetings with the monthly staff attending and the fellowship director at the year-end review.

3. Demonstrate the skills of an effective consultant in hematology/medical oncology.

**Evaluation:** Global rating form filled out by the attending staff.

4. Incorporate practice based learning into daily patient care by reviewing the NCCN guidelines (at [www.NCCN.com](http://www.NCCN.com)) on staging, treatment, and surveillance on at least 2 patients per week in clinic. Check patient’s chart for adherence to recommendations and discuss rational for deviation with the staff.

**Evaluation:** Global rating form filled out by the attending staff. The staff attending will review a minimum of 2 patients seen by the fellow to review adherence to recommendations.

5. Maintain professional relationships with healthcare team, as a leader or member.

**Evaluation:** Global rating form filled out by the attending staff.
6. Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent.
   • The first month on the rotation, the fellow will decide with the staff which tests to order on the bone marrow biopsies and aspirates.
   • The second month on the rotation, the fellow will make the initial decision on which tests to order and review with the staff.
   • The fellow will also review the slides with the hematopathologist to ensure adequacy of the biopsy and aspirate.

Evaluation: Staff acknowledgement of performed procedures and review results of at least two of the bone marrow biopsies with the fellowship director at the year-end review.

7. Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.
   • The first month on the rotation, the fellow should write at least 2 chemotherapy orders cooperatively with the staff.
   • The second month on the rotation, the fellow should write at least 2 chemotherapy orders independently and then review with the staff.

Evaluation: Staff acknowledgement of performed procedures

8. Complete on-line evidence-based medicine resource (ASH On-line at www.hematology.org), and use these principles to critically review an article for Journal Club at UMMC.

Evaluation: Anonymous evaluations from attendees at Journal Club and feedback from faculty advisor for the Journal Club will be included in the fellow’s file/portfolio. The fellow must ascertain in writing to the fellowship director that the on-line evidence based medicine curriculum has been completed.

Conference -- **Attendance is mandatory**
Tumor conference: Each Thursday at noon held in the Pathology Department.

**Reading List:**

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HCMC Consults and Clinic Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>PGY 4 (First year fellow)</th>
<th>PGY 5/6 (Second/third year fellow)</th>
</tr>
</thead>
</table>
| Patient Care       | • Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent  
|                    | • Understand test results within the context of a patient’s diagnosis and treatment plans. 
|                    | • Begin to understand how to prescribe and administer chemotherapeutic and biologic agents through all therapeutic routes for patients with hematology and oncologic disorders. Write orders with staff supervision.  
|                    | • Document the planning and coordination of follow-up care   
|                    | • Maintain comprehensive, timely, legible, and appropriately detailed                      | • Demonstrate competence in the performance and interpretation of 2 bone marrow biopsies and aspirates incorporating the process of informed consent 
|                    |                                                                                                                                                                        | • Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes for patients with hematology and oncologic disorders. Independently write orders for co-signing by staff. 
|                    |                                                                                                                                                                        | • Demonstrate ability to participate in a multidisciplinary team in the effective delivery of health care, and to be a team leader when the situation is appropriate to do so. 
<p>|                    |                                                                                                                                                                        | • Maintain comprehensive, timely, legible, and appropriately detailed                      |</p>
<table>
<thead>
<tr>
<th>Medical Knowledge</th>
<th>Practice Based Learning and Improvement</th>
</tr>
</thead>
</table>
| • Gain an understanding of the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on HIV and AIDS associated malignancies, bladder cancer, germ cell tumors, primary hepatobiliary malignancies, and myeloproliferative disorders.  
• Complete on-line evidence-based medicine resource, and use these principles to critically review an article for Journal Club with faculty assistance. | • Present cases at patient care conferences with assistance of faculty attending, and lead the discussion.  
• Identify challenges to completion of plan of care  
• Incorporate practice based learning into daily patient care by reviewing the NCCN guidelines on staging, treatment, and surveillance on at least 2 patients per week in clinic. Check patient’s chart for adherence to recommendations and discuss rational for deviation with the staff. | • Present cases at patient care conferences with minimal assistance by faculty attending, and incorporate new knowledge into one’s practice.  
• Identify challenges to completion of plan of care and how to surmount them  
• Independently incorporate practice based learning into daily patient care by incorporating the NCCN guidelines on staging, treatment, and surveillance on all patients. Check patient’s chart for adherence to recommendations |
| Interpersonal and Communication Skills | • Triage night and weekend phone calls with faculty assistance on the majority of calls.  
  • Understand differences in the communication skills needed for direct care, consultative opinion, and consultative management  
  • Identify responsibility for execution of plan/follow-up  
  • Maintain an appropriate therapeutic relationship with patient and family  
  • Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan  
  • Gain an understanding of the stresses placed on patients with limited financial and social resources, and how to effectively communicate with them. | • Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.  
  • Demonstrate expertise in communication skills for providing direct care, consultative opinion, and consultative management  
  • Identify responsibility for execution of plan/follow-up and ascertain that the plan is carried out to completion  
  • Maintain an appropriate therapeutic relationship with patient and family  
  • Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan, then ascertain that plan is completed.  
  • Demonstrate an understanding of the stresses placed on patients with limited financial and social resources, and effectively communicate with them. |
|---|---|---|
| Professionalism | • Demonstrate ability to interact with all members of health care team, patients, and family members  
  • Demonstrate sensitivity to patient and families’ culture, age, and disabilities | • Demonstrate competence in all interactions with all members of health care team, patients, and family members  
  • Demonstrate sensitivity to patient and families’ culture, age, and disabilities, and teach others |
| Systems-Based Practice | • Demonstrate understanding of health care resources in the HCMC setting and begin to identify areas for improvement  
  • Demonstrate an understanding of | • Demonstrate expertise in utilization of health care resources in the HCMC setting and identify at least one area for improvement  
  • Lead the development of a system wide care plan for individual patients that does |
| allocation of resources that does not compromise quality of care. | not compromise quality of care. |
IX. Continuity Clinic

General Description:

Each fellow must attend one, one-half day, continuity clinic throughout the fellowship training period. Continuity clinics must be a minimum of six months in length per ACGME guidelines. Continuity clinics will be assigned to all first year fellows. Henceforth, fellows will request continuity clinics each spring during the development of their career development plan.

For those senior fellows desiring more ambulatory clinical training experiences, additional one-half day clinics may be requested and the time frame can be from one – twelve months in length (ie, as long as one clinic is attended for six months, additional clinics can be any duration). Approval for additional clinic assignments must be obtained from Dr. McClune and the continuity clinic faculty member in order to ascertain adequate numbers of patients and adequate time for teaching.

Fellows should strive to see a mixture of new patients and follow-up patients, and when completing return to clinic documents ascertain that, whenever possible, that the patient will return to clinic on the date the fellow is in clinic. The fellow is responsible for following up on any outstanding test results from a patient visit and discussing them with the faculty and patient as appropriate.

Continuity Clinic at all sites
Fellow Responsibilities and Lines of Responsibilities:
Note: Also Refer to Faculty Supervision and Graded Responsibility, page 24, Fellowship Curriculum

Fellows should see their patients independently, then review all cases with the faculty attending physician who is overall responsible for the patient’s care. The care plan will be developed mutually, but per Graded Responsibility requirements, by the third fellowship year fellows should be developing care plans independently with minimal input by faculty. The fellow is responsible for following up on all outstanding test results from a patient visit and discussing them with the faculty and patient as appropriate.

Educational Objectives:

During the first fellowship year, fellows should develop a general understanding of the variety of malignant and non-malignant hematologic and oncologic diseases that patients have who are cared for by hematologists and oncologists. Fellows should begin to develop an understanding of the criteria for diagnosis, staging and management of heme/onc patients, and with the staff, begin to understand how to develop and implement a management plan. Fellows should also recognize when patients require transition from the outpatient to the inpatient setting for care.

During the second year, fellows are expected to have broadened their medical knowledge base to the point of beginning to independently develop diagnostic and treatment plans for their patients, and begin to lead all discussions of diagnosis, prognosis and management of patients. The fellow should monitor their own practice, and employ improvement measures and resources within the health care system to improve and optimize their practice.
By the third year, fellows should be acting independently in all aspects of care of their continuity clinic patients with minimal staff oversight. By the conclusion of training, fellows must have reached a level of proficiency to be competent to care for heme/onc patients.

1. Demonstrate the skills of an effective consultant in hematology/medical oncology.
   Evaluation: Global rating form filled out by the attending staff.

2. Demonstrate the skills of an effective practitioner of hematology/medical oncology in providing specialized care to a panel of patients.
   Evaluation: Global rating form filled out by the attending staff.

3. Apply knowledge of health systems to use resources in providing optimal patient care.
   Evaluation: Global rating form filled out by the attending staff.

4. Incorporate practice based learning into daily patient care.
   Evaluation: Global rating form filled out by the attending staff.

5. Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.
   Evaluation: Global rating form filled out by the attending staff; all chemotherapy orders are to be written by the fellow, reviewed and co-signed by the attending staff.

6. Maintain professional relationships with healthcare team, as a leader or member relationships with healthcare team, as a leader or member.
   Evaluation: Global rating form filled out by the attending staff.

In addition to the RMS global rating, one mini-CEX must be completed every six months on a new or follow-up patient.

**Continuity Clinic Educational Objectives in the Context of the ACGME Core Competencies**

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PGY 4 (First year)</td>
</tr>
<tr>
<td>Patient Care</td>
<td>• Jointly with staff develop plan for diagnosis, staging, treatment and follow-up of all patients</td>
</tr>
<tr>
<td></td>
<td>• Independently, with staff confirmation, develop plan for diagnosis, staging, treatment and follow-up of all patients</td>
</tr>
<tr>
<td></td>
<td>PGY 5 (Second year)</td>
</tr>
<tr>
<td></td>
<td>• Independently with staff confirmation, develop plan for diagnosis, staging, treatment and follow-up of all patients</td>
</tr>
<tr>
<td></td>
<td>• Independently with staff confirmation, make decisions on when a patient requires hospitalization</td>
</tr>
<tr>
<td></td>
<td>PGY 6 (Third year)</td>
</tr>
<tr>
<td></td>
<td>• Independently, with selective staff confirmation, develop plan for diagnosis, staging, treatment and follow-up of all patients</td>
</tr>
<tr>
<td></td>
<td>• Independently, with selective staff confirmation, make decision on admitting a patient to the hospital, and manage all transitions of care between the outpatient and inpatient setting.</td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>• Develop a general understanding of the variety of malignant and non-malignant hematologic and oncologic diseases that patients have who are cared for by hematologists and oncologists.</td>
</tr>
<tr>
<td>Practice Based Learning and Improvement</td>
<td>• Learn to utilize all learning resources to improve patient care in the ambulatory setting for patients with a variety of malignant and non-malignant hematologic and oncologic diseases</td>
</tr>
<tr>
<td></td>
<td>• Participate in QOPI and contribute to discussions</td>
</tr>
<tr>
<td>Interpersonal and Communication Skills</td>
<td>• Communicate effectively with all clinic staff, care providers, patients and families</td>
</tr>
<tr>
<td></td>
<td>• After discussion with staff, lead patient discussions about diagnosis, prognosis and care</td>
</tr>
<tr>
<td>Professionalism</td>
<td>• Demonstrate ability to interact with all members of health care team, patients, and family members</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate sensitivity to patient and families’ culture, age, and disabilities</td>
</tr>
<tr>
<td>Systems-Based Practice</td>
<td>• Develop an understanding of health care systems and the impact on delivery of care in the ambulatory setting, as well as when transitions of care are required</td>
</tr>
</tbody>
</table>
X. SUMMARY OF EVALUATION REQUIREMENTS FOR REQUIRED ROTATIONS AND CONTINUITY CLINIC

Your responsibilities:

Procedures: Maintain a log of all procedures. You are required to arrange with faculty attendings for completion of formal assessment of competency in procedures.

360 and patient surveys: You are responsible for distributing the 360 degree evaluations – staff will then submit them directly to the Fellowship Office where they will be included in your file. You are responsible for distributing the patient surveys, which patients will submit at time of discharge to be mailed directly to the Fellowship Office where they will be included in your file.

Other evaluations: You are responsible for maintaining all other forms of evaluation in your portfolio for review at the semi-annual meetings with the Fellowship Program Director. You MUST bring your portfolio to these meetings. Dr. McClune will not sign your evaluation form unless the portfolio has been reviewed and reaches the level of competency required by level of training. Satisfactory performance of educational objectives as evidenced by all forms of evaluation must be achieved; otherwise, remediation will be required.

Summary by rotation:

UMMC

Inpatient Hematology/Oncology and Heme Malignancy Rotations:
One 360 per rotation and patient surveys per rotation
Maintain log of night/weekend calls and those reviewed with faculty attending
Maintain record of chemotherapies ordered
Maintain list of talks given to mid-levels and residents; copies of articles reviewed
Maintain list of family conferences led
Complete Bone marrow biopsy competency certification evaluation when appropriate
Complete Chemotherapy competency certification evaluation
Complete Intrathecal chemotherapy competency certification evaluation

Hematology and Oncology Consultation Rotation:
One mini-CEX per rotation
Maintain log of night/weekend calls and those reviewed with faculty attending
Maintain record of chemotherapies ordered
Maintain list of talks given to mid-levels and residents; copies of articles reviewed
Maintain list of family conferences led

BMT:
One 360 per rotation and patient surveys per rotation
Maintain list of talks given to mid-level providers and residents; copies of articles reviewed
Maintain list of family conferences led

VAMC
One mini-CEX per rotation
Regions
One mini-CEX per rotation

Continuity Clinic
One mini-CEX every 6 months throughout all 3 years of fellowship training – may be completed on a new or follow-up patient
Maintain record of chemotherapies ordered
Maintain list of family conferences led
XI. Elective Rotations

A. Transfusion Medicine

Location: University of Minnesota Medical Center, Fairview Blood Bank and Apheresis Center; Fellow’s Office, Rm D-242 Mayo Memorial Bldg, 420 Delaware St. SE; On first day, report to D-251 Mayo Memorial Bldg at 8:30am and meet Ms. Bobbie Gibson

Duration: A 4-week training experience – It must be scheduled prior to start of academic year

Faculty: Shanna Morgan, M.D., rotation director, Cellular Therapy Lab, Dave McKenna Jr., M.D.

Transfusion Medicine Educational Objectives in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 4/5/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care</td>
<td></td>
</tr>
<tr>
<td>• Competently and independently performs consultation in the inpatient and outpatient settings and is effectively teaching rotating residents in consultations</td>
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<tr>
<td>• Interacts with other health care teams to discuss test results and make recommendations</td>
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</tr>
<tr>
<td>• Actively participates in apheresis procedures including therapeutic hematopoietic stem cell (HSC) collection, and donor collections</td>
<td></td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td></td>
</tr>
<tr>
<td>• Demonstrates knowledge of principles of immunohematology, blood donor evaluations, screening, and testing, hematopoietic stem cell collection, serologic testing, and blood component therapy</td>
<td></td>
</tr>
<tr>
<td>• Manages therapeutic apheresis procedures and transfusion reactions with minimal oversight</td>
<td></td>
</tr>
<tr>
<td>• Demonstrates ability to manage consultations and complications and to support ancillary staff</td>
<td></td>
</tr>
<tr>
<td>Practice Based Learning and Improvement</td>
<td></td>
</tr>
<tr>
<td>• With minimal guidance critically reviews the literature addressing evidence based utilization of laboratory tests, results, blood utilization and management, and apheresis</td>
<td></td>
</tr>
<tr>
<td>• Contributes to practice change based on an identified error or systematic problem, trouble-shoots problems including deviations</td>
<td></td>
</tr>
</tbody>
</table>
### Interpersonal and Communication Skills
- With minimal guidance provides timely and effective communication with health care providers, families, and patients
- Produces a clear and understandable written report in an accepted format

### Professionalism
- Encourages and actively seeks and provides feedback to improve performance
- Exemplifies effective management of multiple competing tasks, with reliable follow-up; is a source of support/guidance to other members of health care team
- Recognizes cultural differences

### Systems-Based Practice
- With minimal guidance implements state, federal, and professional organizations standards or elements of checklists in the laboratory
- With minimal guidance plays a role in the healthcare team through consultation, case presentation, test/procedure selection/procedural considerations guidance

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**Evaluation:** E*value global rating by faculty based upon review by Transfusion Medicine Faculty working with the fellow during the rotation. A short presentation (approximately 30 minutes) and/or a journal club review at the Transfusion Medicine Breakfast Meeting is required and will be included in the evaluation. **Attendance and timeliness will be a factor in evaluation as well.**

**Required Meetings/Conferences:** Rotating fellows will attend the following:
- Clinical Pathology Conference: Tues 12-1 PM (weekly)
- Transfusion Medicine Lecture Series: Tues 1-2 PM (weekly)
- Lab Medicine & Pathology Grand Rounds (when relevant): Wed 8-9 AM (weekly)
- Immunohematology Conference: Wed 3-4 PM (bi-monthly)
- Transfusion Medicine Journal Club: Third Thursday of the month at breakfast meeting
- Transfusion Medicine Breakfast Meeting: Thurs 8:30-10:00 (weekly)
- Special Coagulation Laboratory sign-out: time varies (daily) – Transfusion Medicine activities take precedence over this activity
- Special Coagulation lecture: Wed 10-12 (weekly)
- Scheduled meetings for orientation to apheresis center, cell therapy lab, etc.

**Partial Suggested Reading List:**
- Guidelines for Transfusion Therapy 6th Edition – Fairview Laboratory Services
  (*Recommend reviewing this during 1st week and last week of rotation)


• Klein J and Sato A. The HLA System (Parts I and II). NEJM 2000 (9/7/00 and 9/14/00); 702-709 and 782-786.


Additional reading suggestions may be found on the ASH Hematology Reading List (http://www.hematology.org/education/training/reading/59_transfusion.cfm), and rotating fellows are encouraged to search the literature for current transfusion medicine articles that may be of interest to them.
B. Blood and Marrow Transplant (BMT) Clinic

Location: UMMC Bone Marrow Transplant Clinic, 5th floor PWB
(Phone: 626-2663, FAX: 626-2664)

Duration: A two to four week training experience

Staff: The assigned adult BMT faculty member (“Doc of the Month”), plus all adult BMT faculty

Call: There is no call responsibility

Schedule: For those fellows desiring additional experience in the clinical care of recipients of stem cell transplants, a 2-4 week elective in the outpatient BMT clinic may be scheduled. Fellows rotating on the inpatient BMT service are welcome to attend the outpatient clinic during their rotation as time allows.

General Description:

This is a 2-4 week experience in the outpatient BMT clinic. The clinic serves adult BMT recipients and donors. The fellow will participate in new patient consultations, donor evaluations, observe apheresis and bone marrow harvests, and perform bone marrow aspirations and biopsies and lumbar punctures. Fellows will be expected to work with home care agencies, pharmacies, nurse practitioners, physician assistants, nurses, nursing assistants, social workers and referring physicians in a coordinated effort to provide optimal patient care. The fellows will work on a daily basis with the Doctor of the Month assigned to the clinic, plus work with each adult BMT faculty attending in individual continuity clinics.

BMT Clinic Educational Objectives in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 5/6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient Care</strong></td>
<td>• Provide effective consultation in the outpatient setting</td>
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<tr>
<td></td>
<td>• Evaluate and counsel a new patient for autologous or allogeneic transplantation with staff oversight</td>
</tr>
<tr>
<td></td>
<td>• Evaluate potential donors for peripheral blood or bone marrow stem cell harvesting with staff oversight</td>
</tr>
<tr>
<td></td>
<td>• Manage, with staff oversight, a variety of allogeneic and autologous post-transplant issues and complications including infections, blood product transfusion, management and care of indwelling venous access catheters, graft-versus-host disease</td>
</tr>
<tr>
<td><strong>Medical Knowledge</strong></td>
<td>• Understand the procedure and risks of apheresis and bone marrow harvests</td>
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<tr>
<td></td>
<td>• Understand the indications for transplantation for a variety of non-malignant and malignant conditions, and the risks and potential benefits to the patient</td>
</tr>
<tr>
<td></td>
<td>• Understand the nonmalignant late effects that can occur following transplantation, and appropriate counsel patients</td>
</tr>
</tbody>
</table>
- Understand the late infectious complications of transplant, and how to diagnose and treat them (including herpetic viral infections and fungal infections)
- Understand the diagnostic criteria for chronic GVHD, and how to treat the disease
- Gain an understanding of novel therapeutic trials for patients undergoing transplant
- Understand indications for and risks of donor lymphocyte infusions

<table>
<thead>
<tr>
<th>Practice Based Learning and Improvement</th>
<th>Present cases and use the discussion to update one’s own knowledge base and care of patients.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incorporate new knowledge to improving patient care.</td>
</tr>
<tr>
<td></td>
<td>Incorporate practice based learning into daily patient care by sharing at least 2 articles per week that relate to current patient cases</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interpersonal and Communication Skills</th>
<th>Demonstrate the ability to effectively communicate with the patient’s primary care providers at time of initial consultation and during follow-up care.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Demonstrate ability to interact with all members of the health care team, and with home care agencies</td>
</tr>
<tr>
<td></td>
<td>Demonstrate ability to communicate effectively with patients and families by leading care meetings</td>
</tr>
<tr>
<td></td>
<td>Establish effective communication between the outpatient and inpatient transplant services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professionalism</th>
<th>Demonstrate ability to interact with all members of the health care team, patients, and family members as a consultant and post-transplant care provider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maintain professional relationships with healthcare team as a team member.</td>
</tr>
</tbody>
</table>

| Systems-Based Practice | Demonstrate expertise in using health-care system resources to provide optimal patient care. |

**Evaluation:** Global rating by faculty.

**Conferences:**

**Attendance is mandatory**

- BMT/Heme Malignancy Conference; 14-109 PWB
- Hematologic Malignancy Pathology Conference Monday 4:15 p.m. (every 2nd and 4th Mondays) Bell Institute of Pathology.
- Divisional Clinical Conference
Reading List:

**History of HCT**

**GVHD**

**HLA matching**

**Decision Analysis**

**Late Effects and Screening Guidelines**
- Majhail NS, Rizzo JD, Lee SJ, Aljurf M, Atsuta Y, Bonfim C, Burns LJ, Chaudhri N, Davies S, Okamoto S, Seber A, Socie G, Szer J, Van Lint MT, Wingard JR, Tichelli A; Center for International Blood and Marrow Transplant Research (CIBMTR); American Society for Blood and Marrow Transplantation (ASBMT); European Group for Blood and Marrow Transplantation (EBMT); Asia-Pacific Blood and Marrow Transplantation Group (APBMT); Bone Marrow Transplant Society of Australia and New Zealand (BMTSANZ); East Mediterranean Blood and Marrow Transplantation Group (EMBMT); Sociedade Brasileira de Transplante de Medula Ossea (SBTMO). Recommended screening and preventive practices for long-term survivors after hematopoietic cell transplantation. Bone Marrow Transplant 47:337-41, 2012.
C. Cell Processing

Location: UMMC Cell Processing Laboratory, MCT Facility, 1900 Fitch Ave., St. Paul, MN 55108 (Saint Paul Campus)

Duration: A two week training experience

Faculty: David McKenna, M.D. rotation director
Phone 612-624-5736, Pager 899-7375

General Description:

The rotation will include formal lectures, observation of processing within the clinical lab, and time for directed reading and discussion. Small, focused projects may be identified for fellows indicating an interest.

During the rotation, the fellow is welcome and encouraged (but not required) to join the following Transfusion Medicine Conferences:

- Clinical Pathology Conference: Tues 12-1 PM (weekly)
- Transfusion Medicine Lecture Series: Tues 1-2 PM (weekly)
- Lab Medicine/Pathology Grand Rounds (when relevant): Wed 8-9 AM (weekly)
- Immunohematology Conference: Wed 3-4 PM (bi-monthly)
- Transfusion Medicine Breakfast Meeting: Thurs 830-10 (weekly)

Cell Processing Educational Objectives in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 4/5/6</th>
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</thead>
<tbody>
<tr>
<td>Medical Knowledge</td>
<td>• Understand the various methods of routine (e.g., volume reduction, red cell depletion, thawing) and advanced (e.g., cell selection by immuno-magnetic selection or counter-flow centrifugal elutriation) cell processing with a focus on processing and storage of hematopoietic progenitor/stem cells from marrow, peripheral blood, and umbilical cord blood</td>
</tr>
<tr>
<td></td>
<td>• Understand quality control in a clinical cell processing laboratory including cell enumeration (e.g., nucleated cells, CD34+ cells, others), viability (e.g. microscopy- and flow cytometry- based), functional evaluation (e.g., CFU-GM), and detection of microbial contamination (e.g., sterility, endotoxin)</td>
</tr>
<tr>
<td></td>
<td>• Develop basic knowledge of the regulatory aspects of routine and advanced clinical cell processing, including the role of the Food and Drug Administration and professional organizations (e.g., AABB, FACT)</td>
</tr>
<tr>
<td>Practice Based Learning and Improvement</td>
<td>• Incorporate new knowledge to improving patient care.</td>
</tr>
</tbody>
</table>
Interpersonal and Communication Skills
- Demonstrate the ability to effectively communicate with all members of the cell processing facility and patient care team

Professionalism
- Demonstrate ability to interact at a professional level with all members of the cell processing laboratory and patient care team

Evaluation: The fellow will be evaluated by Dr. McKenna primarily through discussion of reading, lectures, and observed laboratory activities. E*value global rating will be completed by Dr. McKenna.

Cell Processing Partial Reading List:

General:

Quality Assurance/Regulatory:
- Directed reading from above sources and other.

Additional reading dealing with QC testing and specific processing technologies will be assigned or made available to the fellow. Current literature discussing novel cell therapies (NK cells, T regulatory cells, mesenchymal stromal cells) may be included as well, depending upon specific interests of the fellow.
**D. Gynecologic Oncology**

- **Location:** Women's Health Clinic, PWB 1C
- **Duration:** A two to four-week training
- **Staff:** Rahel Ghebre, M.D., Rotation Director, Linda Carson, M.D., Levi Downs, Jr, M.D., Peter Argenta, M.D Melissa Geller, M.D., Amy Jonson, M.D., Chris Crumm Education Manager (612) 626-3503.
- **Call:** There is no call responsibility
- **Orientation:** Fellows should contact Dr. Jori Carter (pager: 899-2917, email: cart0281@umn.edu July 2012 through June 2013) or Dr. Colleen Evans (pager: 899-8296, email: kelly100@umn.edu only Sept 2012 through June 2013) prior to the start of the rotation to set up an orientation to the service.

**General Description:**

The gynecologic oncology rotation is predominantly clinic based. Fellows will participate in clinic Monday through Friday 8 a.m. to 5 p.m.. We encourage heme-onc fellows to participate in the care of the chemotherapy patients. The fellows are encouraged to come to the OR on at least one occasion. We feel it is very beneficial to see a new ovarian cancer surgery.

If research is desired in the Gynecologic Oncology field, many projects are available. Contact Dr. Patricia Judson (612) 626-3702.

**Please note:** Faculty members must always co-sign chemotherapy orders.

**Gynecologic Oncology: Educational Objectives in the Context of the ACGME Core Competencies**

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 4/5/6</th>
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</thead>
</table>
| **Patient Care**                    | • Counsel patients regarding screening guidelines for gynecologic health, risk factors and promote healthy behaviors  
• Become competent in the performance of screening and diagnostic pelvic examinations |
| **Medical Knowledge**               | • Understand how to diagnose and manage patients with a wide variety of gynecologic cancers, including ovarian, endometrial, cervical, vaginal, and vulvar cancer in the outpatient setting |
| **Practice Based Learning and Improvement** | • Present cases and use the discussion to update one’s own knowledge base and care of patients.  
• Incorporate new knowledge to improving patient care.  
• Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases |
Interpersonal and Communication Skills

- Demonstrate ability to interact with all members of the health care team, patients and families

Professionalism

- Maintain professional relationships with healthcare team as a team member.

Systems-Based Practice

- Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: Global rating by staff attending.

Conferences:
- **Tumor Board**: Every Thursday, 7:00 a.m., MT 12th floor library. **Attendance is mandatory**.
- **Gyn-Onc Fellow Didactics**: **Attendance is strongly suggested**.

Reading List:
E. Genitourinary Malignancies

Period: A two to four week training experience
Location: University of Minnesota Medical Center for Prostate Cancer. Masonic Cancer Center. UMMC Oncology Clinic.
Staff: Dr. Gautam Jha, Rotation Director (fellow contact, pager 612-899-9583)
Call: There is no call responsibility

General Description:

The genitourinary malignancies rotation is predominantly clinic based. Fellows will participate in clinic Monday through Friday 8 a.m. to 5 p.m. Fellows are encouraged to come to the OR and observe surgical procedures performed by urologic surgeons and to observe simulation and planning for external beam radiation therapy and radiobrachytherapy treatments in the radiation therapy center.

Genitourinary Malignancies Educational Objectives

Upon completion of this elective, the fellow will gain:

- By the completion of this elective, the fellow should be able to understand the management of prostate, testicular, urothelial and kidney cancers
- Work with urologic surgeon and observe prostatectomies including robotic surgery.
- Work with a radiation oncologist and observer planning for EBRT and brachytherapy.

Prostate Cancer:
- Prevention
- Screening and early detection
- Diagnosis and staging
- Treatment
  - Early stage: choice between surgery vs. radiation vs. expectant management
  - Prostate cancer nomograms
  - Intermediate stage: to be familiar with neoadjuvant hormonal and EBRT
  - Salvage therapy post EBRT and surgery
  - Advanced stage:
    - Hormonal therapy and its controversies
    - Chemotherapy in hormone refractory prostate cancer
    - Novel therapies
    - PSA failure only and its kinetics: when and how to treat PSA failure?
    - Complications of treatments: surgery, EBRT and hormonal therapy
    - Palliative treatment of prostate cancer
    - Bone health and prostate cancer

Testicular Cancer:
- Classification and pathology
- Tumor markers and half lives
- Staging for testicular cancer
• Treatment
  o Seminoma
    ▪ Early stage: surveillance vs. EBRT vs. adjuvant chemotherapy
    ▪ Treatment for advanced stage
  o Non-seminomatous germ cell tumor
    ▪ Early stage: node dissection (RPLND) vs. adjuvant chemotherapy vs. surveillance: be familiar with the new emerging evidence
    ▪ Advanced stage and risk stratification
      • First line chemotherapy
      • Salvage chemotherapy
      • Autologous bone marrow transplant
  o Follow-up of long-term survivors

Urothelial and Kidney Cancer:
• Urothelial cancer
  o Etiology and various pathologies
  o Staging
  o Treatment of localized disease
    ▪ Indications for radical surgery and the role of neoadjuvant therapy
    ▪ Organ preservation approach
    ▪ Indications for intravesical therapy
    ▪ Management of metastatic disease: chemotherapy
• Kidney cancer
  o Pathology of kidney cancer
  o Staging and prognosis
  o Treatment
    ▪ Surgery including nephron-sparing surgery and its indication
    ▪ Treatment of advanced disease
    ▪ Novel agents and kidney cancer

Genitourinary Malignancies: Educational Objectives in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
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<tbody>
<tr>
<td>Patient Care</td>
<td>• Counsel patients regarding screening guidelines for genitourinary health</td>
</tr>
<tr>
<td></td>
<td>• Become competent in the performance of screening and diagnostic GU examinations</td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>• Understand how to diagnose and manage patients with a wide variety of GU cancers, including prostate, testicular, urothelial and renal malignancies</td>
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<td>• Understand the role of the radiation oncology in patient care; observe planning for EBRT and brachytherapy and understand indications, risks and benefits</td>
</tr>
</tbody>
</table>
Practice Based Learning and Improvement

- Present cases and use the discussion to update one’s own knowledge base and care of patients.
- Incorporate new knowledge to improving patient care.
- Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases

Interpersonal and Communication Skills

- Demonstrate ability to interact with all members of the healthcare team, patients and families

Professionalism

- Maintain professional relationships with healthcare team as a team member.

Systems-Based Practice

- Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: Global rating by staff attending

Conferences:
Urologic ISC Tumor Conference -- Every 2\textsuperscript{nd} Tuesday, 7:00 am, B216 Mayo.

\textit{Attendance is strongly recommended.}

Genitourinary Malignancies Suggested Reading:

Prostate Cancer:
- The entire issue of JCO has many excellent review articles about prostate cancer. JCO. Volume 23, Issue 32, November 10, 2005.

Testicular Cancer:

Urothelial and Kidney Cancer:
F. Head & Neck Cancer

Locations:
1) Medical Oncology Clinic, UMMC (Monday, Wednesdays)
2) Therapeutic Radiology Clinic, UMMC (Mondays, Tuesdays and Fridays for new patients. Wednesdays for follow ups. To be arranged with Dr. Reynolds)
3) Surgical Oncology Clinic – 8th Floor, PWB, Clinic 8A (Tuesdays, 8 am to Noon)

Duration: 2 weeks
Staff: Dr. Gautam Jha, Rotation Director
Therapeutic Radiology: Dr. Kathryn Dusenbery, rotation coordinator: Connie Blasing 612-626-2440
Surgical Oncology: Frank Ondrey, MD, Bevan Yeuh, MD (for OR learning if interested) (contact Janel Richter, phone 612-625-9449)
Call: No call responsibility.

General Description:

The fellow will be an active participant in the outpatient setting in the evaluation and multimodality treatment planning of head and neck cancer patients. They will become familiar in the acute and long term toxicities of treatment and with their management strategies. They are also encouraged to attend the OR and to observe surgical procedures of interest by the surgical oncologists (Bevan Yeuh, MD)

Head and Neck Cancer: Educational Objectives in the Context of the ACGME Core Competencies

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<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 5/6</th>
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<tbody>
<tr>
<td>Patient Care</td>
<td>• Become competent in the performance of screening and diagnostic head and neck examinations</td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>• Understand how to diagnose and manage patients with head and neck cancer</td>
</tr>
<tr>
<td></td>
<td>• Understand the role of surgery, chemotherapy and radiation oncology in patient care; understand the risks and benefits of each treatment modality and multimodality therapy</td>
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<tr>
<td></td>
<td>• Understand the acute and long term toxicities of treatment and their management strategies</td>
</tr>
<tr>
<td>Practice Based Learning and Improvement</td>
<td>• Present cases and use the discussion to update one’s own knowledge base and care of patients.</td>
</tr>
<tr>
<td></td>
<td>• Incorporate new knowledge to improving patient care.</td>
</tr>
<tr>
<td></td>
<td>• Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases</td>
</tr>
<tr>
<td>Interpersonal and Communication Skills</td>
<td>• Demonstrate ability to interact with all members of the health care team, patients and families</td>
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</tr>
<tr>
<td>Professionalism</td>
<td>• Maintain professional relationships with healthcare team as a team member.</td>
</tr>
<tr>
<td>Systems-Based Practice</td>
<td>• Demonstrate expertise in using health-care system resources to provide optimal patient care.</td>
</tr>
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</table>

**Evaluation:** Global rating by faculty.

**Conferences:** Interdisciplinary conference held on Fridays from 11 am to 12 noon at PWB, 8-335.

**References:**
1. Multidisciplinary management of head and neck cancer by Ki Hong et al.
G. Masonic Cancer and Blood Disorders Clinic and Familial Cancer Clinic

Location: University of Minnesota Medical Center, Fairview, Hematology/Oncology Clinic

Duration: A two to four week training experience

Staff: Dr. Anne Blaes, primary, plus all Division of H.O.T. faculty – Contact Dr. Blaes two weeks prior to the start of your rotation to prepare an individualized plan for the rotation

Mary Ahrens, MS, CGC - Familial Cancer Clinic

Call: There is no call responsibility

Schedule: Contact Dr. Blaes two weeks prior to the start of the rotation to arrange your schedule.

Administrative contact: Carol Thomas, thoma026@umn.edu, 612-624-5631

General Description:

Fellows desiring additional experience in the evaluation and outpatient management of benign hematologic, hematologic malignancies, and neoplastic disorders may elect to spend 2-4 weeks in the subspecialty outpatient clinics. This elective allows exposure to a wide variety of benign and malignant diseases, and involvement with enrolling patients onto clinical trials.

You may elect to focus on hematology (benign hematology/hematologic malignancies), oncology (hematologic malignancies/solid tumors), or both hematology and oncology during the rotation. We also suggest 1-2 half-days in the Familial Cancer Clinic or Cancer Risk Management Program.

The Familial Cancer Clinic provides training in the etiology of cancer, including predisposing causal factors leading to neoplasia, cancer prevention and screening, and competency in genetic testing and counseling as they relate to hereditary cancers and hematologic disorders for high-risk individuals. Three-four patients are seen each Wednesday afternoon with Mary Ahrens. The Cancer Risk Management Program provides training in counseling and screening individuals at high risk for cancers and cancer syndromes (BRCA 1 and 2 mutations, HNPCC). Patients are seen on Fridays.

Fellows are also encouraged to spend 1-2 half days with Dr. Anne Blaes or Karen Pennington, PA in the Cancer Survivorship Program where counseling occurs regarding survivorship care and the long term complications of cancer therapy are discussed.

1. **Hematology:**
   This rotation provides the opportunity to work with experts in the diagnosis and management of benign hematologic disorders and hematologic malignancies.

**Hematology Clinic: Educational Objectives in the Context of the ACGME Core Competencies**

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 5/6</th>
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</thead>
<tbody>
<tr>
<td>Patient Care</td>
<td>• Demonstrate competency in the diagnosis and management of patients with a variety of hematologic disorders, including sickle cell anemia, hemophilia, vonWillebrand’s disease,</td>
</tr>
</tbody>
</table>
| Medical Knowledge                                                                 | • Interpret results of coagulation assays for both congenital and acquired disorder  
|                                                                 | • Understand how to diagnose and manage all types of anemia  
|                                                                 | • Understand how to diagnose and manage all hematologic malignancies  
|                                                                 | • Understand the complexity of care required by sickle cell anemia patients  
|                                                                 | • Understand the acute and long term toxicities of treatment and their management strategies |

| Practice Based Learning and Improvement                                         | • Present cases and use the discussion to update one’s own knowledge base and care of patients.  
|                                                                 | • Incorporate new knowledge to improving patient care.  
|                                                                 | • Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases |

| Interpersonal and Communication Skills | • Demonstrate ability to interact with all members of the health care team, patients and families |

| Professionalism | • Maintain professional relationships with the healthcare team as a team member. |

| Systems-Based Practice | • Demonstrate expertise in using health-care system resources to provide optimal patient care. |

**Conferences:**

- **Divisional Clinical Conference 12-1 on Wednesdays:** Attendance is mandatory.
- **Hematologic Malignancy Conference:** Held the 2nd & 4th Mondays at 4:15 p.m. Attendance is mandatory if elective focus includes heme malignancy.

2. **Oncology:**
   
   This rotation provides the opportunity to work with experts in the diagnosis and management of neoplastic disorders, paraneoplastic disorders, attendance to tumor boards, and multidisciplinary management through interaction with surgical, therapeutic oncology, and pathologic consultants.
Attending in the Familial Cancer Clinic or Cancer Risk Management Program held on Wednesday afternoons is required. A day with the Cancer Survivorship Program is also highly recommended.

**Oncology Clinic: Educational Objectives in the Context of the ACGME Core Competencies**

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<tr>
<th>Competency</th>
<th>Educational Level: PGY 5/6</th>
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<tbody>
<tr>
<td><strong>Patient Care</strong></td>
<td>• Demonstrate competency in the diagnosis and management of patients with a variety of malignant hematology and solid tumor cancers</td>
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<td></td>
<td>• Provide competent consultative and ambulatory care to all patients. At the PGY 5 level, input by faculty should be sought; at the PGY 6 level input should only be needed on selected cases.</td>
</tr>
<tr>
<td><strong>Medical Knowledge</strong></td>
<td>• Demonstrate understanding of the diagnosis, pathology, staging and management of heme malignancies and neoplastic disorders</td>
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<td>• Provide counseling to promote healthy behaviors/modification of risk factors and increase patient compliance with preventive health behavior and treatment regimens</td>
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<td></td>
<td>• Understand potential late effects in survivors of cancer and recommendations for screening for late effects</td>
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<td>• Provide genetic counseling for patients with breast and colon cancer</td>
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<td>• Understand the unique issues involved in caring for the geriatric patient with cancer</td>
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<td></td>
<td>• Understand the serial measurement of tumor masses in interpretation of patient's disease status</td>
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<td>• Demonstrate understanding of the indications and application of imaging techniques in patients with neoplastic disorders</td>
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<td>• Demonstrate understanding of the relevant chemotherapy protocols and combined modality therapy for neoplasia</td>
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<td>• Understand the function of and participate in a tumor board</td>
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<td></td>
<td>• Diagnose and manage paraneoplastic syndromes</td>
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<td>• Effectively manage pain in patients with neoplasia</td>
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<td>• Understand the components to implementation of palliative care</td>
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<td></td>
<td>• Understand the basics of clinical trial design and implementation</td>
</tr>
<tr>
<td><strong>Practice Based Learning and Improvement</strong></td>
<td>• Present cases and use the discussion to update one’s own knowledge base and care of patients.</td>
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<td>• Incorporate new knowledge to improving patient care.</td>
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<td></td>
<td>• Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases</td>
</tr>
</tbody>
</table>
Interpersonal and Communication Skills

- Demonstrate ability to interact with all members of the healthcare team, patients and families

Professionalism

- Maintain professional relationships with healthcare team as a team member.

Systems-Based Practice

- Demonstrate expertise in using health-care system resources to provide optimal patient care.

**Evaluation:** RMS global rating by faculty. Feedback from providers the fellow has worked with is sought. These comments are combined and coalesced into one evaluation by Dr. Blaes.

**Conferences:**

The fellow should attend as many of the Interdisciplinary tumor conferences as possible during the rotation, as well as the following:

- Wednesday divisional patient care conference 12-1
- Fridays, Breast conference, 7-8
- Mondays, Colorectal conference alternating with Pancreas/Biliary conference, 12-1
- Tuesdays, Thoracic conference, 12-1, MCRB 450
- Thursdays, Sarcoma conference, 7-8

**Reading List:**

It is expected during this rotation that fellows will actively read in relation to the cases they are seeing. This would include actively utilizing ASCO-SEP, ASH-SAP, nccn.org, as well as The Manual of Chemotherapy by Chu.
H. Molecular Diagnostics Laboratory (MDL)

Location: Molecular Diagnostics Laboratory, Mayo D-210.
Duration: A 4-week training experience – It must be scheduled prior to start of academic year.
Faculty: Dr. Sophia Yohe, Rotation Director, phone: 612-273-3098

Educational Objectives:

The rotation in the Molecular Diagnostics Laboratory (MDL) is designed to provide the fellow with an introduction to molecular diagnostics, including basic concepts in molecular genetics and molecular pathology, methods and techniques, laboratory logistics (i.e., specimen procurement, processing, and a general knowledge of laboratory work-flow), and indications for appropriate utilization of molecular testing.

Molecular Diagnostics: Educational Objectives in the Context of the ACGME Core Competencies

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 4/5/6</th>
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<tbody>
<tr>
<td>Medical Knowledge</td>
<td>• Know specimen requirements for molecular diagnostic testing</td>
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<tr>
<td></td>
<td>• Understand how DNA and RNA are extracted</td>
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<td>• Understand PCR and RT-PCT techniques</td>
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<td>• Understand the basic principles of DNA sequencing, and assays used in MDL</td>
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<tr>
<td></td>
<td>• Gain an understanding of the basic principles of molecular biology and human genetics</td>
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<td>• Understand the basic molecular pathology of those diseases commonly tested for in the clinical molecular diagnostic laboratory</td>
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<tr>
<td></td>
<td>• Understand the use of molecular testing in the diagnosis and management of disease and the relationship/overlap between molecular testing and other laboratory tests (e.g., flow cytometry, cytogenetics).</td>
</tr>
<tr>
<td></td>
<td>• Understand laboratory practice issues including proficiency testing, certification, QA/QC, and Medicare compliance.</td>
</tr>
<tr>
<td>Practice Based Learning and Improvement</td>
<td>• Present cases and use the discussion to update one’s own knowledge base and care of patients.</td>
</tr>
<tr>
<td></td>
<td>• Incorporate new knowledge to improving patient care.</td>
</tr>
<tr>
<td>Interpersonal and Communication Skills</td>
<td>• Demonstrate ability to interact with all members of laboratory</td>
</tr>
</tbody>
</table>
Evaluation: RMS global rating by faculty based upon review by Faculty working with the fellow during the rotation. Fellows will be evaluated on performance of daily activities, on participation in required meetings and conferences, and on presentations.

Overview of Daily Duties and Responsibilities

- For those patients referred to the laboratory for gene rearrangements, BCR-ABL testing and BMT engraftment studies, the fellow is expected to obtain clinical histories and relevant results from other laboratories (Special Hematology, Flow Cytometry/Immunophenotyping, Surgical Pathology, Cytogenetics). This information should be obtained prior to reviewing cases with staff person on service.
- Review test results as they become available with the Molecular Diagnostics Fellow PRIOR to case sign out with the staff person on service. The fellow should be prepared to answer any questions regarding any particular case.
- Attend case sign out with staff person on service.
- During the rotation, fellows are expected to perform literature searches with regard to difficult/ unusual cases. The findings of the literature search are discussed with the MDL staff and fellows. The fellow is also expected to present the case and the results of the literature search at the weekly MDL staff meeting. The MDL directors emphasize that staying current with the literature is essential in a rapidly changing field such as molecular diagnostics.

Required Meetings/Conferences: Rotating fellows will attend the following:

- Molecular Diagnostics Staff Meeting, Discussion of issues in laboratory management, and interesting cases in the MDL.
- Hematologic Malignancy Conference- alternating Mondays at 4:15 pm,
- Special Diagnostics Administrative Meeting, Discussion of administrative issues in the "Specialty Diagnostics" laboratories.

Other Conferences – attendance is optional

- GI Pathology Conference
- Laboratory Medicine and Pathology Grand Rounds
- Clinical Pathology Case Conference
- Dermatopathology Conference
- Cytology Conference
- Institute of Human Genetics Seminar
- Resident's Conference

Reading List:

1. Strachman T., and Read A. Human Molecular Genetics
2. Thompson and Thompson. Genetics in Medicine
3. Heim and Mittelman. Cancer Cytogenetics

The MDL also has a teaching file of gels and autoradiograms illustrating interesting/unusual cases. The MDL also has a Disease Reference Book including background information, testing protocols, and result interpretation for each of the diseases tested for in the MDL.
Other Conferences – attendance is optional

- GI Pathology Conference
- Laboratory Medicine and Pathology Grand Rounds
- Clinical Pathology Case Conference
- Dermatopathology Conference
- Cytology Conference
- Institute of Human Genetics Seminar
- Resident's Conference

Reading List:

7. Strachman T., and Read A. Human Molecular Genetics
8. Thompson and Thompson. Genetics in Medicine
9. Heim and Mittelman. Cancer Cytogenetics

The MDL also has a teaching file of gels and autoradiograms illustrating interesting/unusual cases. The MDL also has a Disease Reference Book including background information, testing protocols, and result interpretation for each of the diseases tested for in the MDL.
I. Palliative Care Consult Service

  - Login with your umn.edu ID. Passcode is Palliativeummc.
  - This site has more information about the rotation, reading materials, etc.
  - Please contact Drew Rosielle MD if you aren’t going to be joining us the first day of your rotation in our rounds at 0800.
- Period: A one to four week training experience
- Location: Rounds start at 0800 in Mayo B390 M-F, except Tuesdays when we have a didactic at 0730-0830 in Mayo B390. Inpatient consultations are performed on all medical/surgical floor and intensive care units at UMMC with some patients seen at the Riverside East Hospital and Transitional Care Unit. A pediatric component of the experience may be arranged if desired. Participation in one Fairview Home Hospice Interdisciplinary Conference and at least one day of home/facility hospice visits with the hospice nurse is required. Participation in the Palliative Care Clinic in PWB1C is optional.

Faculty and Contact Information:

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<thead>
<tr>
<th>NAME</th>
<th>PAGER</th>
<th>OFFICE</th>
<th>E-MAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elizabeth Uchitelle MD</td>
<td>612-899-1510</td>
<td>612-273-5477</td>
<td><a href="mailto:Euchite1@fairview.org">Euchite1@fairview.org</a></td>
</tr>
<tr>
<td>Rudolph (Rudy) Keimowitz, MD</td>
<td>612-538-8850</td>
<td>612-273-5477</td>
<td><a href="mailto:rkeimow1@fairview.org">rkeimow1@fairview.org</a></td>
</tr>
<tr>
<td>John Ely MD</td>
<td>612-899-2877</td>
<td></td>
<td><a href="mailto:Jely1@fairview.org">Jely1@fairview.org</a></td>
</tr>
<tr>
<td>Drew Rosielle, MD</td>
<td>612-899-4178</td>
<td>612-673-3790</td>
<td><a href="mailto:rosielle@umn.edu">rosielle@umn.edu</a></td>
</tr>
<tr>
<td>Dot Landis, MSW (half-time)</td>
<td>612-899-7126</td>
<td>612-273-5893</td>
<td><a href="mailto:dlandis1@fairview.org">dlandis1@fairview.org</a></td>
</tr>
<tr>
<td>Palliative Social Worker</td>
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</tr>
<tr>
<td>Paul Galchutt, MDiv</td>
<td></td>
<td></td>
<td><a href="mailto:pgalchu1@fairview.org">pgalchu1@fairview.org</a></td>
</tr>
<tr>
<td>Palliative Chaplain</td>
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</tr>
<tr>
<td>Melinda Hansen RN, CNS</td>
<td>612-899-4716</td>
<td>612-273-7087</td>
<td><a href="mailto:Mhanse10@fairview.org">Mhanse10@fairview.org</a></td>
</tr>
<tr>
<td>Inpatient team CNS</td>
<td></td>
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<tr>
<td>Julie Robbins, Administrative Assistant</td>
<td>612-672-6362</td>
<td>612-672-6362</td>
<td><a href="mailto:jrobin3@fairview.org">jrobin3@fairview.org</a></td>
</tr>
</tbody>
</table>

General Description

Fairview’s Palliative Care Program describes the umbrella of palliative care services for patients cared for within the entire Fairview system that have advanced progressive medical illness or acute life-threatening illness. The Palliative Care Program is one of only six nationally designated Palliative Care Leadership Centers in the US and is responsible for education, quality improvement, research, and direct clinical care in palliative medicine and related disciplines. Direct clinical services include the Palliative Care Consult service, the Palliative Care Clinic and Fairview Hospice. The Palliative Consult Service provides interdisciplinary consult roles at both campuses of the University of Minnesota Medical Center, Fairview (UMMC and Riverside). The UMMC Palliative Consult Service consists of an advanced practice nurse, physicians, a clinical social worker, and a spiritual health care provider. Fairview Hospice provides care in multiple settings, but largely in a patient’s own home, for patients whose life expectancy is less than six months and otherwise meet Medicare Hospice Benefit criteria.
Educational Objectives
1) To master the basic principles of palliative assessment, interdisciplinary teamwork, communication, prognostication and treatment options.
2) To gain an understanding of ethical and legal principles integral to palliative decisions and care.
3) To appreciate the necessity of integrating palliative care principles into hematology and oncology practice.

Description:
One and Two week rotations:
Specific experiences:
Fellows will actively participate in the inpatient team consult service, attend and contribute to daily interdisciplinary team meetings, attend scheduled didactic sessions, and arrange a 1-2 day hospice experience. The latter is required for a 2-week rotation and encouraged as possible for a 1-week rotation.

Upon completion of this rotation the student will be able to:

- Understand the structure and function of an interdisciplinary palliative care team and the need for interdisciplinary teamwork in palliative care
- Complete a comprehensive symptom assessment and develop a palliative plan for management
- Recognize and collate psycho-social and spiritual aspects of care into a comprehensive assessment and management plan
- Gain an enhanced knowledge of pain management skills
- Lead and/or contribute to a patient-family conference from a palliative perspective
- Understand the process and function of an interdisciplinary hospice team
- Recognize the basic needs of patients and families living at home with advanced or terminal illness

One month rotation:
Specific experiences:
Same as above plus review and discuss a Palliative journal article at Journal Club once monthly, attend and contribute to Morbidity and Mortality conferences from a palliative perspective, round in Long Term Care with NP/ Hospice case manager, lead a hospice or home visit with direct staff supervision, and participate in a Palliative Clinic experience.

Upon completion of this rotation the fellow will be able to:

- Accomplish all of the above
- Assess and manage palliative care patients in the ambulatory and in-hospital setting, to include demonstrating appropriate interpersonal skills with patients and health providers, gathering information, formulating treatment plan, documenting patient encounter and planning and coordinating follow-up care
- Understand palliative care models in long term care facilities and recognize how illness care in this setting impacts the patient and family differently than the home care model.
- Comprehend the insurance and financial barriers impacting various palliative care delivery systems
- Discuss and apply palliative ethical and legal principles to specific cases encountered
- Consider cultural aspects important in palliative assessment and management
- Appreciate the necessity for self-care and learn tools to accomplish
- Realize the societal costs of end of life care in America
- Identify the principles of bereavement, anticipatory grief, and the syndrome of complicated grief. Learn and coordinate the resources for managing these issues of care.

**Palliative Care: Educational Objectives in the Context of the ACGME Core Competencies**

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 5/6</th>
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<tbody>
<tr>
<td><strong>Patient Care</strong></td>
<td>● Complete a comprehensive symptom assessment and develop a palliative plan for management</td>
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<tr>
<td></td>
<td>● Lead and/or contribute to a patient-family conference from a palliative perspective</td>
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<td></td>
<td>● Recognize the basic needs of patients and families living at home with advanced or terminal illness</td>
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<td></td>
<td>● Appreciate the necessity for self-care and learn tools to accomplish</td>
</tr>
<tr>
<td><strong>Medical Knowledge</strong></td>
<td>● Gain an enhanced knowledge of pain management skills</td>
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<td></td>
<td>● Appreciate the necessity of integrating palliative care principles into hematology and oncology practice.</td>
</tr>
<tr>
<td></td>
<td>● Discuss and apply palliative ethical and legal principles to specific cases encountered</td>
</tr>
<tr>
<td></td>
<td>● Identify the principles of bereavement, anticipatory grief, and the syndrome of complicated grief. Learn and coordinate the resources for managing these issues of care.</td>
</tr>
<tr>
<td><strong>Practice Based Learning and Improvement</strong></td>
<td>● Present cases and use the discussion to update one’s own knowledge base and care of patients.</td>
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<td></td>
<td>● Incorporate new knowledge to improving patient care</td>
</tr>
<tr>
<td><strong>Interpersonal and Communication Skills</strong></td>
<td>● Demonstrate ability to interact with all members of the health care team, patients and families</td>
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<tr>
<td></td>
<td>● Consider cultural aspects important in palliative assessment and management</td>
</tr>
<tr>
<td><strong>Systems-Based Practice</strong></td>
<td>● Understand the structure and function of an interdisciplinary palliative care team and the need for interdisciplinary teamwork in palliative care</td>
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<tr>
<td></td>
<td>● Understand palliative care models in long term care facilities and recognize how illness care in this setting impacts the patient and family differently than the home care model.</td>
</tr>
<tr>
<td></td>
<td>● Comprehend the insurance and financial barriers impacting various palliative care delivery systems</td>
</tr>
<tr>
<td></td>
<td>● Realize the societal costs of end of life care in America</td>
</tr>
</tbody>
</table>
• Learn and coordinate the resources for managing bereavement, anticipatory grief, and the syndrome of complicated grief.

Evaluation:
1) Palliative faculty to complete RMS global rating documentation
2) Fellow to provide documentation to Fellowship director of completing web-based tutorial at time of review
3) Palliative faculty to give direct feedback

Meetings/Conferences:
• UMMC Palliative Care Consult Service Interdisciplinary Team Meeting
  Mayo Room B-390
  Daily 8-830 except Tuesdays 0830-0900
• Palliative Fellowship Didactic or Journal Club: Tuesdays 0730-0830 Mayo B390
• Palliative Team Case Conference/Discussion Thursdays 0800-0830
• Fairview Homecare and Hospice - Metro team
  Hospice & Home Care office at 2450 26th Ave S, Minneapolis
  Weekly IDT Tuesdays 10:30 am – 12N
  Home/facility visit vary by arrangements
• M & M Conferences
  Moos Tower 2-620
  Fridays 12-1:00 pm

Examples of Reading List (these and other articles available in binder):
• www.stoppain.org – One hour tutorial, web-based, case-based study on adjuvant drugs. Mandatory completion for 1 month rotations; recommended for shorter rotations.
• Khatcheressian, J., et. al.: Improving Palliative and Supportive Care in Cancer Patients: Oncology 2005;19(10): 1365-1388.
• Meisel, A, Snyder, L, and Quill, T: Seven Legal Barriers to End-of Life Care: Myths, Realities, and Grains of Truth: JAMA 2000; 284(19): 2495-2501.

Additional References:
• UNIPAC Book Series: Hospice/Palliative Training for Physicians, a Self-Study Program: Mary Ann Liebert, Inc. 2006, 8 volumes.
• Lynn, J: Sick to Death and Not Going to Take It Anymore: Reforming Healthcare for the Last Years of Life: University of California Press, 2004.
• EPEC-O DVD (available from the TLC team and available for check-out in fellowship office)
• Most recent issues of the following journals:
  • Journal of Palliative Medicine
  • The Journal of Supportive Oncology
  • The Journal of Pain and Symptom Management
• Fast Facts at www.eperc@mcw.edu
J. Therapeutic Radiology

**Location:** Therapeutic Radiology Clinic (first floor UMMC; phone 612-273-6700)

**Duration:** A two to four-week training experience that must be scheduled in advance

**Staff:** Dr. Kathryn Dusenbery, Rotation Director, Margaret Reynolds, M.D., Chung Lee, MD and Chinsoo Cho, MD

Call: Contact Connie Blasing one month prior to your rotation start 612-626-2440.

**Contact:** There is no call responsibility

**General Description:**

The fellow will be an active participant in consultations, simulations, treatment visits, and follow-up visits for patients referred to the department. Fellows are expected to attend departmental planning conferences (Wednesday, 7:30-9:30). At the end of the rotation you will be expected to deliver a short 10-15 minute presentation on the topic of your choice.

**Therapeutic Radiology: Educational Objectives in the Context of the ACGME Core Competencies**

<table>
<thead>
<tr>
<th>Competency</th>
<th>Educational Level: PGY 5/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care</td>
<td>• With staff oversight, provide care to patients requiring therapeutic radiation by performing effective in and out patient consultations for use of radiation therapy as a treatment modality.</td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>• Understand the principles and application of external beam and brachytherapy radiation therapy in the treatment of neoplastic disorders</td>
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<td></td>
<td>• Understand the palliative benefit of radiation therapy, indications and contraindications for palliative treatment.</td>
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<td>• Understand the acute and possible long term side effects of radiation therapy</td>
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<td>• Understand the concept of normal tissue complication probability and have a basic understanding of how dose is prescribed and determined with probability tables and dose volume histograms. Have a basic knowledge of normal tissue tolerances to ionizing radiation and which chemotherapeutic drugs modify this tolerance.</td>
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<td>• Understand the utility of radiation sensitizers in clinical practice</td>
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<td>• Effectively assess tumor imaging by computed tomography, magnetic resonance and nuclear imaging techniques.</td>
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<tr>
<td>Practice Based Learning and Improvement</td>
<td>• Present cases and use the discussion to update one’s own knowledge base and care of patients.</td>
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</tbody>
</table>
• Incorporate new knowledge to improving patient care.
• Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases.

<table>
<thead>
<tr>
<th>Interpersonal and Communication Skills</th>
<th>• Demonstrate ability to interact with all members of the health care team, patients and families</th>
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</thead>
<tbody>
<tr>
<td>Professionalism</td>
<td>• Maintain professional relationships with healthcare team as a team member.</td>
</tr>
<tr>
<td>Systems-Based Practice</td>
<td>• Demonstrate expertise in using health-care system resources to provide optimal patient care.</td>
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</table>

**Evaluation:** RMS global rating by faculty

**Conferences:**

**Mandatory:** Treatment Planning Conference Wednesdays 7:30-9:30.

Didactic Lecturers Wednesdays at 4:30

You are also invited to Tuesday night conference held 4:30-5:30 pm in the clinic conference room. You should also attend Interdisciplinary conferences depending on which faculty you are working with including Neuro, GI, Thoracic, Head & Neck, Gynecology, Sarcoma, Breast and GU

**References:**

- Devita V ed: Principles and Practice of Oncology
- Radiation Oncology for the House Officer
K. VAMC - Hematology Oncology Ambulatory Out-patient Elective

Location: Minneapolis VA Medical Center Out-Patient Hematology-Oncology Clinic
Phone: 612-467-4135
Period: 4 week training experience, Monday - Friday
Staff: All Minneapolis VA Hematology-Oncology Faculty
Contact: Jillian Sully, 612-467-4135
Mark Klein, M.D., 612-467-4682
Call: There is no call responsibility

Background:
It is widely acknowledged that although the hematology oncology fellows in our training program receive outstanding training and mentorship, the emphasis of their experience with patient care has traditionally been in the ‘in-patient consult/ward’ setting. This approach may not be ideally suited for those fellows intending to pursue a career in a ‘private practice’ setting, where the majority (80-90%) of patient encounters is in the out-patient ambulatory setting. Furthermore, although each of the fellows has a continuity clinic, during the course of which they longitudinally follow patients over time, they do not have much exposure to work up and formulation of a treatment plan for newly diagnosed cancer patients (i.e. most of the patients they see in their continuity clinic already have an established plan of care). The goal of this rotation is to fill in this hiatus and provide the fellows a valuable learning experience in allowing them to be the primary individual evaluating a patient with a new cancer diagnosis and formulating and executing an evidence-based plan of care.

Objectives/Goals:
1) Develop expertise (in the ambulatory setting) in evaluating and formulating a plan of care for patients with newly diagnosed hematology-oncology problems.
2) Critically review the key clinical trials in the literature as well as evidence-based National Guidelines such as the NCCN.
3) Enhance ability to function in a multidisciplinary environment, communicate with referring physicians and coordinate care by communicating with surgical and radiation oncologists, interventional radiologists, chemotherapy nurses and chemotherapy pharmacists.
4) Learn to discuss and present cases in multidisciplinary tumor boards (ENT tumor board/thoracic malignancy tumor board/urology tumor board/GI malignancy tumor board)
5) Improve medical documentation skills and cite the appropriate literature when formulating and documenting an assessment/plan.
6) Use AJCC staging guidelines to document on the medical record an accurate stage for newly diagnosed cancer patients.
7) Improve ‘efficiency’ by simulating a practice model and seeing and completing work-ups for new patients in limited time slots.

General description/structure: The rotation would have 2 components: a clinical (patient care) component and an educational component.

Clinical component:
This is a 1 month ‘out-patient’ elective rotation. The hematology-oncology fellow is assigned 4 new patients/day for at least 3 days of the week (three in the morning and one in the afternoon). He/she is excused on the day of their continuity clinic, and also on Friday mornings to attend the scheduled educational activities at the University Hospital. Due to changes in patients’ plans, fellows are expected to see follow-up patients in clinic if new patients are not scheduled. The patients will be assigned into this clinic by the hematology-oncology staff on ‘service’. The fellow is expected to
evaluate these patients, discuss with the appropriate hematology-oncology attending the plan of care, and arrange for appropriate and timely follow-up. The fellow is expected to complete the medical documentation associated with the patient encounter. If the staging has been completed, the fellow will also be expected to complete a templated AJCC staging form for that patient. The fellow is also expected to ‘follow-up’ on test results they have ordered during the rotation (eg. CT scans, lab tests) and communicate these results to the patients and providers. The new patients/problems encountered during this rotation may include (but not be limited to):

1) Adjuvant chemotherapy for non-small cell lung cancer
2) Non-surgical management of stage 3 non-small cell lung cancer with chemoradiation.
3) Chemotherapy for metastatic non-small cell lung cancer
4) Evaluation and management of newly diagnosed small cell lung cancer
5) Evaluation of newly diagnosed squamous cell head and neck cancer
6) Adjuvant chemotherapy for colo-rectal cancer
7) Evaluation and management of newly diagnosed metastatic colon cancer
8) Perioperative chemotherapy for newly diagnosed gastric cancer
9) Neoadjuvant and adjuvant therapy of esophageal cancer
10) Chemotherapy for advanced pancreatic/biliary cancers
11) Management of advanced hepatocellular cancer
12) Metastatic renal cancer (first line and subsequent therapy)
13) Neoadjuvant/adjuvant treatment of bladder cancer
14) Castrate-resistant prostate cancer (first-line and subsequent therapy)
15) Management of advanced melanoma
16) Newly diagnosed multiple myeloma
17) Newly diagnosed Non-Hodgkin Lymphoma
18) Newly diagnosed Myelodysplastic Syndromes
19) Approach to work up of cytopenias
20) Work up of patients with venous thromboembolism and decision making regarding duration of anticoagulation.
21) Newly diagnosed myeloproliferative neoplasms including CML
22) Palliative care discussions (when appropriate) for newly diagnosed poor performance metastatic cancer patients, in whom chemotherapy is considered inappropriate.

Teaching/educational component: This component of the rotation will take place in the afternoons for approximately 2 hours. The fellow will work closely with one of the hematology-oncology staff physicians at the VAMC to:

i) Use the cases they have seen and worked up as a platform for discussion and to review some of the pertinent clinical trials in that area and review National guidelines/recommendations such as the NCCN.

ii) Review supportive care guidelines including the use of myeloid/erythroid growth factors, anti-emetics, indications for bisphosphonates and other bone-modifying agents, and outpatient pain management.

iii) Prepare a one-hour presentation at one of the VAMC Monday patient-care conferences with a focus on an evidence-based answer to a common clinical problem (eg: adjuvant
chemotherapy for lung or colon cancer, or reviewing the treatment options for high-grade MDS)

iv) Attend multidisciplinary tumor boards (including presenting new cases they have seen during that month) including the ENT tumor board/ thoracic malignancy tumor boards/ urology tumor board and GI malignancies tumor board

v) Spend 1-2 sessions (1 hour discussions) with our ‘Chemotherapy Work Group’ led by Dr. Weitz to review how a standardized chemotherapy set/template is built with an emphasis on supportive care medications (anti-emetic medications based on level of emetogenicity of that regimen; myeloid growth factors if needed as per ASCO guidelines).

**VA Medical Center Hematology-Oncology Ambulatory Elective: Educational Objectives in the Context of the ACGME Core Competencies**

<table>
<thead>
<tr>
<th>Competency</th>
<th>Education Level: PGY 4/5/6</th>
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<tbody>
<tr>
<td><strong>Patient care</strong></td>
<td>• Provide effective consultation in the outpatient setting.</td>
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<td>• Counsel patients and family members regarding diagnosis, prognosis, therapeutic options and goals of therapy</td>
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<td>• Appropriate follow up of tests ordered including documentation of discussion of test results with patients.</td>
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<tr>
<td><strong>Medical Knowledge</strong></td>
<td>• Learn the diagnosis and management of common out-patient problems seen in hematology-oncology clinical practice</td>
</tr>
<tr>
<td></td>
<td>• Review supportive care guidelines including the use of myeloid/erythroid growth factors, anti-emetics, indications for bisphosphonates and other bone-modifying agents, and out-patient pain management.</td>
</tr>
<tr>
<td><strong>Practice-Based Learning</strong></td>
<td>• Present cases and use the discussion to update one’s own knowledge base</td>
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<tr>
<td></td>
<td>• Critically review such evidence based-guidelines as the NCCN and incorporate practice-based learning into daily patient care by sharing at least 3 articles per week that relate to current patient cases</td>
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<tr>
<td></td>
<td>• Improve medical documentation skills and cite the appropriate literature when formulating and documenting an assessment/plan.</td>
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<tr>
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<td>• Use AJCC staging guidelines to document on the medical record an accurate stage for newly diagnosed cancer patients.</td>
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<td>• Present a 30-60 minute discussion at a Monday afternoon patient-care conference reviewing and analyzing the key literature in the field pertaining to a case.</td>
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<td>• Work with the ‘chemotherapy work group’ and learn how a new journal article translates into a templated chemotherapy order set.</td>
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</tbody>
</table>
### Interpersonal and Communication Skills
- Demonstrate ability to effectively communicate with patients and family members.
- Demonstrate ability to communicate with patient’s primary care/referring provider
- Attend and present cases at multidisciplinary tumor boards (including presenting new cases they have seen during that month). These include the ENT tumor board/thoracic malignancy tumor board/urology tumor board and GI malignancies tumor board

### Professionalism
- Demonstrate ability to interact respectfully with healthcare team members, patients and family members.

### Systems-Based Practice
- Demonstrate experience in using health-care system resources to provide optimal patient care.

### Evaluations: RMS global rating by staff attending

**Conferences and Tumor Boards:** **Attendance is required if not engaged in patient care**
- **Patient-care conference:** Alternate Mondays 1-2 pm, 3V 164
- **Hematopathology conference:** Alternate Mondays 1-2 pm, Pathology Conference Room
- **ENT tumor board:** Wednesday 11 am-12 noon, ENT conference room
- **Thoracic tumor Board:** Tuesday 8-9 am, Radiology Conference Room
- **Urology tumor board:** Third Thursday of each Month, 7:15 am, Urology Conference Room
- **GI tumor Board:** Monthly, Wednesday 12-1 pm, Radiology Conference Room

**Key references:**

**Supportive Care:**

**Prostate Cancer**
Renal Cancer


Bladder Cancer:


Non-Small cell Lung Cancer

- Scagliotti G et al. Phase III Study Comparing Cisplatin Plus Gemcitabine

Small Cell Lung Cancer


Colon Cancer

• Sjoquist K et al. Survival after neoadjuvant chemotherapy or chemoradiotherapy for resectable oesophageal carcinoma: an updated meta-analysis. Lancet Oncol 2011; 12: 681–92
• Bang Y et al. Trastuzumab in combination with chemotherapy versus chemotherapy alone for treatment of HER2-positive advanced gastric or gastro-oesophageal junction cancer (ToGA): a phase 3, open-label, randomised controlled trial. Lancet 2010, Volume 376, Issue 9742, Pages 687 – 697

http://www.nejm.org/toc/nejm/358/1/Pancreatic/Biliary Cancers

Hepatocellular Carcinoma
Anal Cancer

Melanoma

CNS tumors

Head and Neck Cancer

Myeloma

Chronic Lymphoid Leukemia

Non-Hodgkin’s Lymphoma
• Coiffier B et al. Long-term outcome of patients in the LNH-98.5 trial, the first randomized study comparing rituximab-CHOP to standard CHOP chemotherapy in DLBCL patients: a study by the Groupe d'Etudes des Lymphomes de l'Adulte. Blood. 2010 Sep 23;116 (12):2040-5.
• Hiddemann W et al. Frontline therapy with rituximab added to the combination of cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP) significantly improves the outcome for patients with advanced-stage follicular lymphoma compared with therapy with CHOP alone: results of a prospective randomized study of the German Low-Grade Lymphoma Study Group. Blood. 2005 Dec 1;106 (12):3725-32.

Myelodysplastic Syndrome
• List A et al. Lenalidomide in the Myelodysplastic Syndrome with Chromosome 5q Deletion.
• Kantarjian H et al. Results of a randomized study of 3 schedules of low-dose decitabine in higher-risk myelodysplastic syndrome and chronic myelomonocytic leukemia Blood January 1, 2007 vol. 109, no. 1 52-57
• Silverman L et al. Randomized Controlled Trial of Azacitidine in Patients With the Myelodysplastic Syndrome: A Study of the Cancer and Leukemia Group B. J Clin Oncol May 15, 2002 vol. 20, no. 10, 2429-2440
Cancer Unknown Primary Site (CUPS):

XII. Conferences, Seminars, and Tumor Boards

Conferences are held throughout the week at the University and affiliated hospitals. See the specific rotation for details of conferences.

A. UMMC

1. Conferences:

All fellows and faculty are required to attend and sign-in at the following conferences: Hematology/Oncology Grand Rounds, Garibaldi Research Conference, Journal Club, and Core Curriculum.

**Bone Marrow Transplant Conference** -- Room 450 MCRB
Every Monday afternoon, 1:15-2:30 pm, covering a wide variety of both clinical and basic topics related to pediatric and adult transplantation. Clinical protocols and statistical analysis are routinely reviewed.

**Hematology Malignancy Conference** – Room D175 Mayo
Second and fourth Mondays of the month, 4:15 pm, Fellows or faculty present interesting cases, followed by presentation of pathology, molecular diagnostics, and immunophenotyping by faculty members representing Special Hematology, Lab and Medicine Pathology, and Flow Cytometry Laboratory.

**BMT/Hematology Malignancy Patient Care Conference**
Mondays, 3:30 –4:15 pm on second and fourth Mondays, and extending to 5 pm on the other Mondays of the month. Fellows or faculty present interesting cases, particularly those on 7D and 4B for clinical decision making.

**Hematology/Oncology Grand Rounds** -- Room 450 MCRB
Every other Friday morning. Fellows rotate in presenting interesting topics, either hematology or oncology oriented, followed by literature review and case discussion. The fellow should identify a topic at least one month in advance in conjunction with a mentor/statistician. Invited speakers on a wide variety of topics may also present at Grand Rounds. Fellow attendance is required.

**Clinical Conference** -- 13-204 MT
Every Wednesday, noon, except the first Wednesday of the month. All faculty and fellows assemble to discuss interesting recent clinical cases. Fellows based at the University for a clinical rotation are required to attend.

**Journal Club** -- Room 450 MCRB
Every Friday morning. Fellows rotate in presenting and leading the discussion of a recent journal article. The journal club is mentored by faculty members. Fellow attendance is required.
**Garibaldi Research Conference** -- Room 450 MCRB  
Every other Friday morning, one hour in length. This conference is clinical and basic research based. Each faculty member and each fellow during the course of the academic year present their research, followed by discussion. **Fellow attendance is required.**

**Cancer Center Seminar** -- Room 450 MCRB  
Every Tuesday at noon, clinical and basic research based. Faculty of the NIH recognized Comprehensive Cancer Center or nationally prominent speakers from outside the institution present relevant areas of laboratory and clinical science. In addition, weekly seminars are held in molecular genetics. **Fellow attendance is optional but recommended.**

**Core Curriculum** -- Room 450 MCRB  
Fridays from 10-11 am. Faculty present “state of the art” lectures on all Hematology/Medical Oncology topics. The curriculum is taught in the form of “modules” – all PowerPoint presentations are maintained in an electronic file for viewing at any time. **Fellow attendance is required**

**Medical School Core Curriculum**  
At orientation for first year fellows, the series includes ethics, health delivery systems, medical/legal issues, physician as communicator and teacher, professional and personal development, recognizing fatigue and stress, and cost containment/quality assurance.

**Multidisciplinary conferences and tumor boards**  
Held on a weekly basis, and include Neuro-Surgery Brain Tumor Conference, Digestive Disease Conference, Ob-Gyn Pathology Conference, Head and neck tumor conference, Orthopedic tumor conference, Lung cancer conference, and Breast cancer conference. Surgeons, radiation oncologists, pathologists, and medical oncologists attend each conference. Clinical cases with accompanying pathology are reviewed and patient care in the multidisciplinary setting discussed.
2. UMMC - Schedule of Conferences and Seminars

**Monday**

**Noon**
Medicine Research Conference, MCRB 450
First – third Mondays
Begins September

GI Malignancy Conference, Mayo B-216
(alternates between hepatobiliary/colorectal)

**1:15 p.m.**
Bone Marrow Transplant Conference, MCRB 450

**3:15 p.m.**
Bone Marrow Transplant Conference, MCRB 450

**4:15 p.m.**
Heme Malignancy / Pathology Conf., Mayo D-175
(2nd & 4th Mondays)

**Tuesday**

**11:30 a.m.**
Heme Case-Based Malignancy Conf., PWB 14-109

**Noon**
Cancer Center Seminar, MCRB 450
(see schedule: http://www.cancer.umn.edu/education-and-training-opportunities/cancer-center-seminars/index.htm)

Thoracic Tumor Conference, TBD

**Wednesday**

**Noon**
Divisional Clinical Conference***

**Thursday**

**Noon**
Medicine Grand Rounds, MT 2-620 or MT 2-650

**Friday**

*8:00 a.m.*
Fellows Journal Club / Hematology - Oncology Grand Rounds, MCRB 450

*9:00 a.m.*
Garibaldi Research Conference, MCRB 450

*10:00 a.m.*
Core Curriculum, MCRB 450

**Noon**
Morbidity and Mortality Conference, MT 2-620 or MT 2-650

**KEY:**
MCRB = Masonic Cancer Center Research Building
MT = Moos Tower
PWB = Philips Wangensteen Building

* Attendance at these conferences is required
** Attendance required if on UMMC rotation
*** Except the first Wednesday of the month
<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>Monday</td>
<td>7:00 a.m.</td>
<td>Thyroid Cancer Conference</td>
<td>PWB 6-210</td>
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<td>3rd Monday</td>
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<td>7:30 a.m.</td>
<td>Palliative Care Journal Club</td>
<td>Mayo B-390</td>
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<td>2nd Monday</td>
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<td></td>
<td>12:00 p.m.</td>
<td>GI Malignancy Conference</td>
<td>Mayo B-216</td>
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<tr>
<td></td>
<td>1:00 p.m.</td>
<td>Neuro-Surgery Brain Tumor Conference</td>
<td>Mayo C-456</td>
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<td></td>
<td>1:15 p.m.</td>
<td>BMT Conference</td>
<td>MCRB 450</td>
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<tr>
<td></td>
<td>3:15 p.m.</td>
<td>BMT/Heme Malig Patient Conference</td>
<td>PWB 14-136</td>
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<td></td>
<td>4:15 pm</td>
<td>Heme Malignancy Conference</td>
<td>Mayo D-175</td>
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<td>2nd and 4th Mondays</td>
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<tr>
<td>Tuesday</td>
<td>Noon</td>
<td>Cancer Center Seminar</td>
<td>MCRB 450</td>
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<tr>
<td></td>
<td>Noon</td>
<td>Clinical Pathology</td>
<td>Mayo D-175</td>
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<tr>
<td></td>
<td>3:30-5:30 p.m.</td>
<td>Ther Rad</td>
<td>Ther Rad Conf Rm</td>
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<tr>
<td></td>
<td>Transfusion Med</td>
<td>Lecture Series</td>
<td>Mayo D-235</td>
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<tr>
<td>Wednesday</td>
<td>7:00 a.m.</td>
<td>OB-GYN Tumor Conference</td>
<td>MCRB 450</td>
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<td>5 p.m.</td>
<td>Urology Conferences</td>
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<td>1st Wed = radiology</td>
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<td>2nd Wed = pathology</td>
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<td>4th Wed = pathology CPC slides</td>
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<tr>
<td>Thursday</td>
<td>7:00 a.m.</td>
<td>Orthopedic (Sarcoma) Tumor Conf</td>
<td>PWB 1-300</td>
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<td></td>
<td>7:00 am</td>
<td>Ob/Gyn Path/Pt care</td>
<td>12-224 MT</td>
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<td>8:15 am</td>
<td>Transfusion Med Brkfst</td>
<td>Mayo Boardroom</td>
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<td></td>
<td>Noon</td>
<td>Thoracic Oncology Conference</td>
<td>Lillihei 114</td>
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<tr>
<td>Friday</td>
<td>7:00 a.m.</td>
<td>Breast Cancer Conference</td>
<td>Mayo C-456</td>
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<tr>
<td></td>
<td>12:30 p.m.</td>
<td>Head and Neck Tumor Conference</td>
<td>MCRB 450</td>
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</tbody>
</table>
B. VAMC

**Patient Care Conference**
This conference is held every other Monday in 3V-164 from 1-2 p.m. and attendance is mandatory for fellows on the VA rotation.

**Hematopathology Conference -- Attendance is mandatory**
Held every other Monday from 1-2 p.m.

**Tumor boards -- Attendance is strongly encouraged for fellows on the VA rotation.** (See your attending or Jillian Sully for the specific location in the VA).
Thoracic conference: Every Tuesday 8-9 a.m.
Head/neck conference: Every Wednesday 11 a.m.-12 p.m.
Genitourinary conference: Every Thursday 7:30 a.m.-8:30 a.m.
Gastrointestinal conference: One Wednesday per month 12 p.m.-1 p.m.

**Medicine Grand Rounds**
Held every Friday 12-1 p.m. Attendance is optional.

**Morbidity & Mortality**
Every Wednesday from 12-1 p.m. Attendance is optional.

**Research Conference**
Every Thursday from 12-1 p.m. Attendance is optional.

**Core Lectures for residents**
Held every Monday and Tuesday from 12-1 p.m. Attendance is optional.

C. Regions

**Multidisciplinary Cancer Conference**
Held every Tuesday at 7:00 a.m. Attendance is mandatory while on the Regions rotation.

**Pathology Review Conference**
Every Wednesday at 7:00 a.m. Attendance is mandatory while on the Regions rotation.

**Bone Marrow Clinic**
Held every Thursday, 9:30 – noon. Attendance is mandatory while on the Regions rotation.

**Multidisciplinary Hospice/Palliative Care Rounds**
Held every Wednesday at 1 p.m. Attendance is optional.

**Daily Internal Medicine Core Curriculum lectures**
Held at noon. Attendance is optional.

**Medicine Grand Rounds**
Alternates with Morbidity & Mortality conference. Held Wednesdays at noon. Attendance is optional.
**Morbidity & Mortality**
Alternates with Medicine Grand Rounds. Held Wednesdays at noon. Attendance is optional.

**D. HCMC**

**Tumor board conference**
Held every Thursday in Path Dept. Attendance is **mandatory**.

**For updated schedules, please access the following websites:**

Department of Medicine: www.dom.umn.edu

Division of Hematology, Oncology & Transplantation: www.dom.umn.edu/hot

U of MN Cancer Center: www.cancer.umn.edu
XIII. Evaluation of Fellows in the ACGME Core Competencies and Evaluation Tools

Assessment of fellow performance and progress in training is based on the ACGME Core Competencies using the following tools:

- **Global assessment:** The standardized forms used in the web-based system use the nine-point rating scale that translates to the nine-point scale on the ABIM tracking form, and reflect the ACGME core competencies. The system is used for all global fellow evaluations and include direct observation of the fellow by the faculty, as well as faculty assessment of medical knowledge and patient care through case based discussions, review of patient outcomes and medical record/chart reviews. All evaluations done on the RMS system are confidential, and are available to the fellows for review both electronically and by hard copy in their file. The program director monitors trainee and program evaluations continuously. The Division director at each site continuously monitors the evaluations of trainees of their faculty and rotations.

- **360° Global Rating Evaluations:** Residents, faculty, nurses, clerks, clinical staff, patients evaluate fellows from different perspectives using similar rating forms. These ratings are analyzed and summarized for feedback to fellows. **NOTE:** Dr. McClune will not sign off on your every 6 month evaluation unless these evaluations have been completed.

- **Mini-CEX:** Evaluation of competencies through direct observation of fellow consultation or fellow-patient encounter in any setting by the attending physician. **NOTE:** Dr. McClune will not sign off on your every 6 month evaluation unless these evaluations have been completed.

- **Procedure Competency Certification Checklists and Evaluation Forms:** The E*value system is used for fellow documentation of procedures and can be accessed via the internet at: [www.RMS.net](http://www.RMS.net). Confirmation of performance and competency by the faculty member is performed electronically. For the certification of a bone marrow biopsy, the administration of intrathecal chemotherapy or the administration of systemic chemotherapy, each fellow will need to complete the Bone Marrow Biopsy Certification checklist, the Chemotherapy Certification checklist and the Intrathecal chemotherapy certification checklist. Fellows are encouraged to complete their competency certifications by the conclusion of the first two years of training.

- **Portfolios:** A portfolio is a compilation of projects that is prepared by the fellow to document completion of objectives during the training period. Examples include: copies of chemotherapy orders, medical literature reviewed for teaching rounds, power point presentations of grand rounds, journal club, research conferences, etc. The portfolio will be reviewed by advisors, mentors, and the fellowship program director for completeness and progress towards completion of the program educational objectives electronic portfolios. **NOTE:** It is the responsibility of the fellow to maintain his/her portfolio. Dr. McClune will NOT sign off on your every 6 month evaluation unless the portfolio is available for review and deemed complete.
- **Self-Reflection**: Every six months, each fellow must prepare a statement of self-reflection to review with the Fellowship Director at the semiannual review. The statement should include an assessment of strengths and areas for improvement within the context of the six ACGME core competencies, and short and long term goals for improvement.

- **In Training Examinations**: In the spring the Medical Oncology and the Hematology in-service training examinations are conducted. The Division will pay for each examination for second and third year fellows. The results of the test assist fellows as well as the fellowship program director and faculty to identify strengths and weaknesses of the fellows and the training program.

- **Peer/Faculty Surveys**: Following each Grand Rounds/Journal Club/Garibaldi Research Conference presented by a fellow, the fellows and faculty members in the audience will complete an on-line survey of the fellow’s performance which are then sent to the fellow for inclusion in his/her portfolio.

### ACGME Competencies

Fellows will be evaluated on their performance in the 6 competencies defined by the ACGME.

<table>
<thead>
<tr>
<th>Competency Area</th>
<th>Superior Performance</th>
<th>Acceptable Performance</th>
<th>Below Expectations</th>
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</thead>
</table>
| **Medical Knowledge** | - Demonstrates applied knowledge of biomedical, clinical, epidemiological, and social sciences.  
    - Demonstrates investigatory, analytical, and evidence-based approaches to clinical decision-making.  
    - Applies knowledge from outside their discipline, e.g., pathology, radiology, in patient care. | - Usually demonstrates applied knowledge of biomedical, clinical, epidemiological, and social sciences.  
    - Often demonstrates investigatory, analytical, and evidence-based approaches to clinical decision-making.  
    - Often applies knowledge from outside their discipline, e.g., pathology, radiology, in patient care. | - Often does not demonstrate applied knowledge of biomedical, clinical, epidemiological, and social sciences.  
    - Does not demonstrate investigatory, analytical, and evidence-based approaches to clinical decision-making.  
    - Does not apply knowledge from outside their discipline, e.g., pathology, radiology, in patient care. |
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<thead>
<tr>
<th>Competency Area</th>
<th>Superior Performance</th>
<th>Acceptable Performance</th>
<th>Below Expectations</th>
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</thead>
<tbody>
<tr>
<td><strong>Patient Care</strong></td>
<td>Provides compassionate and culturally competent patient care.</td>
<td>Usually provides compassionate and culturally competent patient care.</td>
<td>Often does not provide compassionate and culturally competent patient care.</td>
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<td></td>
<td>Gathers accurate, essential clinical information from history, exam, and diagnostic</td>
<td>Usually gathers accurate, essential clinical information from history, exam, and</td>
<td>Often does not gather accurate, essential clinical information from history, exam,</td>
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<td>procedures; synthesizes to develop appropriate assessments.</td>
<td>diagnostic procedures; synthesizes to develop appropriate assessments.</td>
<td>and diagnostic procedures; synthesizes to develop appropriate assessments.</td>
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<td>Uses information technology to support patient care decisions and patient education.</td>
<td>Often uses information technology to support patient care decisions and patient</td>
<td>Does not use information technology to support patient care decisions and patient</td>
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<td>Performs all diagnostic and therapeutic procedures essential for area of practice;</td>
<td>education.</td>
<td>education.</td>
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<tr>
<td></td>
<td>demonstrates knowledge of indications, benefits, risks, and interpretations.</td>
<td></td>
<td>Often does not perform all diagnostic and therapeutic procedures essential for</td>
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<td></td>
<td>Makes informed recommendations about preventive, diagnostic and therapeutic options.</td>
<td></td>
<td>area of practice; demonstrates knowledge of indications, benefits, risks, and</td>
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<td></td>
<td>DEVELOPS and implements effective patient management plans; reassesses and alters as</td>
<td></td>
<td>interpretations.</td>
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<td></td>
<td>warranted.</td>
<td></td>
<td>Often does not make informed recommendations about preventive, diagnostic and</td>
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<td>WORKS effectively with other health care professionals.</td>
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<td>therapeutic options.</td>
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<td>Often does not develop and implement effective patient management plans; reassesses</td>
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<td>and alters as warranted.</td>
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<td>Often does not work effectively with other health care professionals.</td>
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<td>Competency Area</td>
<td>Superior Performance</td>
<td>Acceptable Performance</td>
<td>Below Expectations</td>
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| **Practice-Based Learning and Improvement** | - Continuously improves patient care, through analysis of own practice and performance, including use of chart review and audits.  
  - Enhances own knowledge and skills through self-assessment, case-based learning, feedback, setting personal learning goals and consultation.  
  - Uses evidence from scientific studies to improve patient care.  
  - Uses information technology to access and manage information, analyze population data, improve patient care, and enhance patient and physician education.  
  - Effectively and consistently teaches students and other health care professionals, when appropriate. | - Often improves patient care, through analysis of own practice and performance.  
  - Often enhances own knowledge and skills through self-assessment, case-based learning, feedback, setting personal learning goals and consultation.  
  - Often uses evidence from scientific studies to improve patient care.  
  - Often uses information technology to access and manage information, analyze population data, improve patient care, and enhance patient and physician education.  
  - Sometimes effectively and consistently teaches students and other health care professionals, when appropriate. | - Tends not to improve patient care, through the process of analysis of own practice and performance.  
  - Frequently does not enhance own knowledge and skills through self-assessment, case-based learning, feedback, setting personal learning goals and consultation.  
  - Frequently does not use evidence from scientific studies to improve patient care.  
  - Frequently does not use information technology to access and manage information, analyze population data, improve patient care, and enhance patient and physician education.  
  - Does not effectively teach students and other health care professionals. |
<table>
<thead>
<tr>
<th>Competency Area</th>
<th>Superior Performance</th>
<th>Acceptable Performance</th>
<th>Below Expectations</th>
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</table>
| Interpersonal & Communication Skills: Relationships with Patients/Colleagues | • Communicates effectively with patients/families to develop therapeutic relationships.  
• Effectively educates and counsels patient/families, commensurate with training.  
• Appropriately communicates level of knowledge, responsibility and role in team.  
• Maintains professional relationships with healthcare team, as leader or member.  
• Maintains comprehensive, timely, legible and appropriately detailed medical records. | • Usually communicates effectively with patients/families to develop therapeutic relationships.  
• Usually effectively educates and counsels patient/families, commensurate with training.  
• Appropriately communicates level of knowledge, responsibility and role in team.  
• Maintains professional relationships with healthcare team, as leader or member.  
• Usually maintains comprehensive, timely, legible and appropriately detailed medical records. | • Often does not communicate effectively with patients/families to develop therapeutic relationships.  
• Often does not effectively educate and counsel patient/families, commensurate with training.  
• Often does not appropriately communicate level of knowledge, responsibility and role in team.  
• Often does not maintain professional relationships with healthcare team, as leader or member.  
• Often does not maintain comprehensive, timely, legible and appropriately detailed medical records. |
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<tr>
<th>Competency Area</th>
<th>Superior Performance</th>
<th>Acceptable Performance</th>
<th>Below Expectations</th>
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</thead>
</table>
| **Professionalism** | • Demonstrates respect, compassion, integrity, and altruism in relationships with patients, families, colleagues, others.  
Well organized, efficient, punctual, completes work, and records in timely manner.  
Effectively sets and reassess priorities, to handle multiple responsibilities.  
Reliable and follows through.  
Takes initiative and responsibility in patient care.  
Recognizes own level of stress and fatigue and impact on patient care, and sound judgment in effective and efficient transfer of care.  
Demonstrates sound judgment in effective and efficient transfer to care.  
Demonstrates ethical principles in practice  
Sensitive to a diverse patient population. | • Demonstrates respect, compassion, integrity, and altruism in relationships with patients, families, colleagues, others.  
Usually well organized, efficient, punctual, completes work, and records in timely manner.  
Usually effectively sets and reassess priorities, to handle multiple responsibilities.  
Reliable and follows through.  
Takes initiative and responsibility in patient care.  
Recognizes own level of stress and fatigue and impact on patient care, and sound judgment in effective and efficient transfer of care.  
Demonstrates sound judgment in effective and efficient transfer of care.  
Demonstrates ethical principles in practice.  
Usually sensitive to a diverse patient population. | • Occasionally does not demonstrate respect, compassion, integrity, and altruism in relationships with patients, families, colleagues, others.  
Often is not well organized, efficient, punctual, completes work, and records in timely manner.  
Often does not effectively set and reassess priorities, to handle multiple responsibilities.  
Often does not demonstrate reliability or follow-through in patient care.  
Often does not take initiative and responsibility in patient care.  
Often does not recognize own level of stress and fatigue and impact on patient care,  
Often does not demonstrate sound judgment in effective and efficient transfer of care.  
Sometimes demonstrates sound judgment in effective and efficient transfer of care.  
Occasionally does not demonstrate ethical principles in practice.  
Sometimes sensitive to a diverse patient population. |
<p>| <strong>Superior Performance</strong> | | | |
| <strong>Acceptable Performance</strong> | | | |
| <strong>Below Expectations</strong> | | | |</p>
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<tr>
<td><strong>Systems-Based Practice</strong></td>
<td>• Applies knowledge of health systems to use resources in providing optimal care.</td>
<td>• Often applies knowledge of health systems to use resources in providing optimal care.</td>
<td>• Tends not to apply knowledge of health systems to use resources in providing optimal care.</td>
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<td>• Demonstrates knowledge of how types of health systems differ, including methods of controlling costs and allocating resources.</td>
<td>• Often demonstrates knowledge of how types of health systems differ, including methods of controlling costs and allocating resources.</td>
<td>• Does not demonstrate knowledge of how types of health systems differ, including methods of controlling costs and allocating resources.</td>
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<td>• Practices cost-effective health care that does not compromise quality of care.</td>
<td>• Often practices cost-effective health care that does not compromise quality of care.</td>
<td>• Tends not to practice cost-effective health care.</td>
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<td>• Advocates for effective, safe, equitable and timely patient care; assists patients in dealing with system complexities.</td>
<td>• Often advocates for effective, safe, equitable and timely patient care; assists patients in dealing with system complexities.</td>
<td>• Does not advocate for effective, safe, equitable and timely patient care; assists patients in dealing with system complexities.</td>
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<td>• Collaborates with health care team to improve systematic processes of care.</td>
<td>• Often collaborates with health care team to improve systematic processes of care.</td>
<td>• Tends not to collaborate with health care team to improve systematic processes of care.</td>
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<tr>
<td>Competency</td>
<td>Assessment Method</td>
<td>Evaluator(s)</td>
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<td>Patient Care</td>
<td>Direct Observation</td>
<td>Attending</td>
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<td>Global Assessment</td>
<td>Attending</td>
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<td></td>
<td>Multisource Assessment</td>
<td>Allied Health Professional, Attending, Patient Survey</td>
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<td></td>
<td>Mini-CEX</td>
<td>Attending</td>
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<td>Record/chart review</td>
<td>Attending</td>
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<td></td>
<td>Review of case/procedure log</td>
<td>Attending, Program Director</td>
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<td></td>
<td>Review of patient outcomes</td>
<td>Attending, Self</td>
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<td></td>
<td>Structured case discussions</td>
<td>Attending, Faculty Member, Self</td>
<td></td>
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<tr>
<td>Medical Knowledge</td>
<td>Global Assessment</td>
<td>Attending</td>
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<tr>
<td></td>
<td>In-Training Exam</td>
<td>Evaluation Committee, Program Director, Self</td>
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<td>Mini-CEX</td>
<td>Attending</td>
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<tr>
<td>Practice Based Learning and Improvement</td>
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<td></td>
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<td></td>
<td>Structured case discussions</td>
<td>Attending, Faculty Member, Self</td>
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<tr>
<td>Interpersonal and Communication Skills</td>
<td>Direct Observation</td>
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<td>Global Assessment</td>
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<td>Allied Health Professional, Attending, Patient Survey</td>
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<td>Professionalism</td>
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<td></td>
<td>Structured case discussions</td>
<td>Attending, Faculty Member, Self</td>
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</table>
Principles of Evaluation
Evaluation is essential to professional development and growth during fellowship training. While we provide regular formal evaluation by faculty and peers, we also assert that self-evaluation and “reflective practice” is vital to understanding of one’s own strengths and areas for improvement as a physician. Our program encourages fellows to self-reflect on their own performance and progress, and seek informal feedback from trusted colleagues, nurses, patients, chief residents, faculty, formal advisors and the program directors.

Formative Evaluation
It is important for fellows to meet with faculty at the beginning of each rotation to discuss rotation goals. The faculty members are required, in accordance with ACGME policy, to provide written and verbal feedback to fellows at the end of each rotation or assignment. Fellows are also encouraged to seek out faculty feedback regularly. Each fellow’s competency in medical knowledge, patient care, professionalism, communication and interpersonal skills, practice-based learning and improvement and systems-based medical practice is monitored and evaluated on an ongoing basis. At the end of each clinical rotation, the fellow is evaluated by their attending physician in the six ACGME core competency areas: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation must be discussed with the fellow in person. In addition, evaluation of the fellow’s work in the continuity clinic is performed by the clinic faculty on an every 6 month basis. Each fellow has electronic access to their evaluations, plus a hard copy is kept in their file in the fellowship office for their review at any time.

Summative Evaluations and Advancement/Promotion Procedure
Each fellow meets twice yearly with the Program Director to review evaluations, conference attendance, procedure logs and competency evaluations, portfolio, discuss short and long term goals, discuss self-reflection statement by the fellow, and to obtain feedback on the program. Original copies of these mid and year-end evaluations are placed in the fellow’s individual file and are readily accessible for their review.

The Program Director completes a standardized form through the electronic system as well as a summative statement form. Both the Program Director and the Fellow sign this form. In the event that remedial action is required, details are included on this form and the signature of the Division Director is also required.

Progress of individual fellows is reviewed by the Competency Assessment Committee on a semi-annual basis. At the end of each year of training, the entire faculty review the progress of each trainee at a faculty meeting, and subsequently, the Competency Assessment Committee meets and makes the final decision (after review of all forms of evaluation) whether progress is satisfactory in all ACGME core competencies for the fellow to progress to the next training level. If not, remedial action will be required, discussed with the fellow, and a detailed plan outlined, as well as criteria for success. The same process is followed to determine that the entire fellowship training program has been successfully completed and that the fellow is deemed competent to practice independently.
XIV. Duty Hours and Monitoring of Duty Hours/Stress/Fatigue

**Duty hours** are defined as all clinical and academic activities related to the training program, i.e., patient care (both inpatient and outpatient), administrative duties related to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled academic activities such as conferences.

When averaged over any 4-week rotation or assignment, residents/fellows must not spend more than 80 hours per week in patient care duties. External moonlighting counts towards the 80 hour limit. There is no in-house call on any rotation. Fellows are provided at least 10 hours between all daily duty periods. It is acknowledged that occasionally fellows return to the hospital when on call from home. The period of time that a fellow is in the hospital is counted towards the 80 hour/week duty limit. However, unless the frequency of returning to the hospital is significant, the 10 hours between duty periods will not apply. You must alert the Program Director if you have had to return to the hospital on consecutive nights. As this will result in undue fatigue, the back-up fellow will be assigned to cover clinical duties to allow you to rest.

In compliance with ACGME guidelines, fellows must take one day off per week, on average, on all rotations. This policy applies to all fellows whether assigned to inpatient wards or consult services. This means that fellows will **not have any responsibility to be available on that day** (this includes **no pager**). This day off should not occur on a scheduled continuity clinic day. It is the responsibility of the individual fellow, in cooperation with his/her patient care team and with the approval of the attending staff physician, to determine the most appropriate day off.

Our program’s duty hour assignments recognize that faculty and residents collectively have responsibility for the safety and welfare of patients. Duty hours are ensured by appropriate scheduling of patient care shifts and responsibilities for residents, fellows and faculty. A back-up call schedule for the fellows is in place for utilization at any site for times when patient care responsibilities are unusually difficult or prolonged, or if unexpected circumstances create fellow fatigue sufficient to jeopardize patient care.

If you are called in at night and wish to remain in the hospital until morning, call rooms are available for your use at UMMC. See Part B DOM policies, section on On Call Rooms (page 26-27).

**Monitoring of Duty Hours/Stress/Fatigue:** The program strictly enforces duty hours to provide time away from patient care duties. All faculty and fellows are educated in and understand the duty hours’ requirements. The fellow enters duty hours into the RMS system at least every 3 days, and the Program Director reviews the duty hours on a quarterly basis. Should violations be identified, the Program Director will contact the fellow and inquire as to the circumstances, and take appropriate steps to assure that duty hours are henceforth kept. At any time a fellow notes that their work hours exceed the duty hours’ requirements, he/she is to notify the Program Director directly so the Program Director can adjust the hours or contact the back-up fellow. The back-up fellow schedule is posted on our Division website for immediate access at all training sites.
The program also requires all faculty attending physicians and advisors/mentors to closely monitor the fellows for stress/fatigue, and we educate our fellows about the signs and symptoms. We encourage fellows to recognize their own levels of stress and to seek the advice of their attending physician, program director, or advisor/mentor if fatigue/stress sets in. At any time a fellow is feeling stressed or fatigued he/she must notify the Program Director, advisor/mentor, and faculty attending immediately. The Program Director or faculty attending will then contact the back-up fellow to assume patient care responsibilities at any time. The schedule is posted on our Division website for immediate access at all training sites. The program director and faculty are also sensitive to the need for timely provision of confidential counseling and psychological support services to fellows. The Residency Assistance Program (RAP) is available for all our fellows at no cost.
XV. Advisors, Mentors, and Career Development Plans

A Fellowship Committee operates to monitor all aspects of the program. The Committee has representatives from the University of Minnesota and each affiliated training site. The Committee provides advice to the Program Director regarding overall policies. The Committee reviews progress of individual fellows on a semi-annual basis.

Each first year fellow is assigned to a senior faculty advisor. Each advisor is required to meet with their respective fellow every 3 months at a minimum (monthly is strongly advised) to provide guidance and aid in development of research plans.

1. Responsibilities of the first-year advisor include:
   - Serve as an advocate for the fellow
   - Serve as a role model
   - Advise about selection of career path and work with the fellow to select second/third year mentor
   - Review fellow's personal training goals and strategies
   - Review fellow's personal and professional progress during the first year of training (RMS evaluations in the 6 ACGME core competencies, procedures, conference attendance, etc.)
   - Encourage self-reflection and a healthy lifestyle - monitor fellow's stress on a continuing basis

Each first year fellow is required to prepare and submit a Career Development Plan (CDP) by April 1 of the academic year. The CDP should meet the specific goals of each fellow according to background, prior experience, research/clinical interests, and career goals. The fellow must select a primary mentor plus at least two secondary mentors to serve as the fellow’s Career Development Committee. If the primary mentor is outside of the Division, then at least one of the secondary mentors must be a member of the Division. The Plan is presented at a Garibaldi Research Conference as well as critically reviewed by the Fellowship Committee. After fellows define a clinical research or laboratory based scholarly project, they are required to present their work on a semi- to annual basis at the Garibaldi Conference, and in the interval at laboratory meetings and their research committee meetings. The presentation at Garibaldi Conference is evaluated by a web-based survey by all attendees at the conference. Second and third year fellows are in contact with their research mentors on a very frequent basis. Formal evaluation of research progress is done by the fellow’s research mentor in conjunction with the fellow's career development committee with review by the Fellowship Committee every 6 months. The ABIM forms in an electronic format are used as an added means of evaluation of fellows’ research performances on a semi-annual basis - these are included in the RMS system.

2. Mentor Criteria and Responsibilities

Mentor Criteria
The primary mentor should have independent status and adequate research funding to support the research program of the trainee. If the primary mentor is a junior faculty member who has not yet achieved independence, then at least one of the secondary mentors’
must meet these criteria. All mentors must have prior teaching/training experience and commit to full participation in our research training and educational initiatives.

**Mentors’ Responsibilities**

*Initial stages of training*
1. Determine that the goals of the trainee are well matched to the overall research program and interests of the mentor(s)
2. Discuss the fellow’s responsibilities and expectations of the mentors for fellow performance.
3. Assist the fellow in identifying both short-term and long-term goals/projects. Ideally, short-term goals/projects should lead to an abstract suitable for submission to a national meeting by the end of the first year of training. By the completion of research training, each fellow should have at least one first author publication.
4. Assure fellow training in the responsible conduct of research and use of human subjects and animals, as appropriate.
5. Assist the fellow in identifying resources (collaborators, statistical support, etc.) for their research.

*Ongoing responsibilities*
1. Maintain an environment that facilitates free and open discussion.
2. Assure proper documentation and storage of data.
3. Instill a high level of research ethics.
4. Hold regularly scheduled meetings with the fellow. The primary mentor should be meeting with the fellow, at a minimum, on a weekly basis to guide the project. The entire CDC should meet on an every 3-month basis with the fellow. It is the responsibility of the fellow to arrange the meetings of the CDC.
5. Treat the fellow with a high level of professionalism and respect as a colleague.
6. Provide constructive feedback on the trainees’ abstracts and presentations, manuscripts and grant proposals.
7. Provide networking and educational opportunities for the fellow throughout the course of training.
8. Participate in written evaluation of the fellow’s progress in research – this includes a written assessment on an every 6-month basis (through RMS) of the fellows’ performance, progress, and goals for the next period of training.
9. Assist in career counseling and job placement.
10. Work with the fellow to clearly define independent areas of research to pursue that are not in conflict with ongoing work.
11. Assist the fellow in obtaining independent grant funding and transitioning to the next phase of their training/careers.

Mentors are encouraged to review two excellent resources:

National Academy of Sciences - On Being a Mentor - [http://www.nap.edu/readingroom/books/mentor](http://www.nap.edu/readingroom/books/mentor)
XVI. Academic Grievance Policy

At any time a fellow does not wish to discuss an issue with the Program Director, the appropriate lines of communication are:

Dr. Daniel Weisdorf, Division Director (weisd001@umn.edu)

Dr. Alisa Duran-Nelson, DOM Internal Medicine Residency Program Director (brow2110@umn.edu)
14-124C PWB
MMC 284
Office: 612-626-4603
FAX: 612-625-3238

Dr. James Nixon, DOM Vice Chair for Education (nixon007@umn.edu)

NOTE: A fellow may seek guidance by any faculty member at any time without fear of repercussions.

Please refer to appropriate sections in Part A (Medical School Policy) and Part B (DOM Policy) for additional information about the Grievance Policy and Procedures.
XVII. Evaluation of the Faculty and Program by Fellows

Following the completion of each clinical rotation, the fellows are to complete an evaluation of their attending physician in these areas: command of subject, sensitivity to house staff concerns and participation in patient care, teaching skills, punctuality, and to provide suggestions to the attending physician on improvement. The fellow also evaluates each clinical rotation as to quality.

The fellows evaluate their mentor and research environment on a semi-annual basis during their second and third years of training.

The Division Director at each site, in conjunction with the Program Director, reviews the Evaluations of their teaching faculty. This review is used to provide feedback to faculty and to address any concerns regarding teaching quality. Trainee names are not provided to protect confidentiality. Individual faculty may access their teaching evaluations after a minimum of 3 evaluations have been completed, and again, trainee names are not provided to protect confidentiality.

The trainee’s assessment of the entire program is performed on an annual basis. The format asks the fellow to assess the entire program and the University and each affiliated hospital rotation in these areas: teaching, conferences, continuity longitudinal clinics, research experience, elective rotations, strengths and weaknesses of the program. We also request evaluation of overall ancillary support for the fellows. The Program Coordinator collates the report in an anonymous manner. Dr. McClune, the Fellowship Program Director, meets with the fellows to review in detail the results of the annual review. In addition, the results of the program review are reviewed by the Fellowship Committee in conjunction with a minimum of one fellow representative for each fellowship year, and are shared and discussed by all faculty at a Division faculty meeting. Faculty representatives of each training site are present. Additional items reviewed at this annual program review include: board scores/pass rates, in-training exam results, previous external and internal site visit results/citations, faculty assessment of the program (survey is done annually, anonymous manner). The fellowship Program Director subsequently meets with faculty at all affiliated sites to discuss the results of the annual review and action plan to correct deficiencies or proposed changes/improvements to the program.

The results of the annual evaluation are used to strengthen and improve the program. For example, in recent years the conferences have been revised, a new core curriculum module system developed, and a new call schedule developed.
XVIII. Recruitment and Selection of Fellows

**Recruitment:** Identification and selection of candidates is designed to recruit individuals with the experience, training, and attitudes to become successful independent clinical investigators or lab-based research physician scientists.

The program began participation in the Electronic Residency Application Service (ERAS) in 2005. Dr. McClune and selected faculty perform the initial review of all applications (on average, approximately 300+- applications are received). Applicants who appear to be competitive for selection to the program are invited for personal interviews and a tour of the program. These applicants meet with the program director, faculty, and current fellows. Personal comments about each applicant and perceived appropriateness for our fellowship program are then assembled in a confidential file that is made available to the Fellowship Committee for review. Since 2006, the program has participated in the Match; all positions are offered through the match. Applicants ranked are those felt to be most appropriately suited to our program on the combined basis of their application and personal interview.

Recruitment of competitive individuals within the University of Minnesota occurs primarily through informal approaches. We attempt to identify superior candidates as they rotate on the subspecialty services at the University and affiliated hospitals. These house officers are contacted personally and encouraged to apply. Much of our recruitment is based on identification of exceptional candidates by personal recommendation of a faculty member of our program or other institutions who feel that the proposed candidate can receive excellent training and career guidance in our program. Frequently, these faculty received their training at the University of Minnesota or are already aware of the training program due to close association with research of clinical faculty at the University. In general, we feel that the success of our trainees is one of our strongest recruiting tools.

Specific criteria for selection are based on the individual’s performance in medical school and clinical training in both formal and informal testing. Criteria such as medical school grades and class rank, board exams, and personal evaluations are heavily considered. Exceptional experiences or achievements are also highly considered, especially achievement and interest in research. All medical school policies regarding recruitment are adhered to.

**Minority, Disabled and Disadvantaged Recruitment**

Through personal contacts, minority applicants and applicants with disabilities or from a disadvantaged background are encouraged to apply, and all applications from such applicants are carefully reviewed in an attempt to identify individuals with evidence of achievement exceeding that which might be predicted by formal testing results. In addition, Dr. Bob Hebbel, through the development of his program in Sickle Cell Disease, has attracted applications from minority groups because of his visible participation with research activities in sickle cell anemia.

**Transferees**

Uncommonly the program will consider fellows who wish to transfer into our program for personal or other reasons. The same application process and selection criteria will be adhered to, and documentation of previous experience and competency based performance evaluations must be obtained prior to appointment and maintained in the fellow’s file.
Eligibility
Fellows must have completed three years of internal medicine training. The vast majority of our fellows will have completed training in an ACGME accredited institution. Uncommonly will we consider an applicant who has completed training in a non-ACGME accredited institution. Fellows must have satisfactorily completed all prior training, and all eligibility criteria as defined by the medical school must be met.
XIX. Procedures

PROCEDURE DOCUMENTATION POLICY
The American Board of Internal Medicine requires that each fellow become proficient in certain procedures during their fellowship-training period. Please see the ABIM requirements for Hematology and Oncology. Although the number of procedures is not mandated, we recommend at least 10-120 bone marrow aspirations and biopsies, 10 intrathecal administrations of chemotherapy, 3-5 Ommaya reservoir punctures and administration of chemotherapy. Management and care of indwelling venous access catheters does not need to be logged.

At the conclusion of training, each fellow must be judged by the program director to be proficient in the procedures listed below:

1. Bone marrow aspiration and biopsy
2. Administration of chemotherapeutic agents and biological products through all therapeutic routes
3. Management and care of indwelling venous access catheters.

To facilitate evaluation and tracking procedural performance, you must enter into the RMS Procedural Tracking Module system all procedures you perform within two weeks for certification by your attending physician.

Each fellow, when he/she and the attending physician feels that the skill level has reached competency level, must have competency verified by personal observation of the procedure by a faculty member with completion of the competency verification form.

Chemotherapy Administration – Ommaya Reservoir

PROCEDURE FOR USE OF OMMAYA RESERVOIR

PURPOSE: To assure safe and sterile access of an Ommaya Reservoir to obtain cerebrospinal fluid (CSF) for testing, for administration of medication into the cerebrospinal fluid, or to measure CSF pressure

EQUIPMENT:

1. Lumbar puncture kit (this contains sterile drapes, collection tubes, Bandaid, sterile gauze, 3-way stopcock, tubing) – order from unit secretary.
2. (3) Betadine swabsticks
3. 4 x 4 sponges
4. 3cc and 10cc sterile syringes
5. Alcohol swabs.
6. 25 or 23 gauge butterfly needle with tubing. (Recommendation is to use smallest size needle possible, we have found poor flow with 25 gauge needle though.)
7. Medication for administration (usually methotrexate / thioptepa / Ara-C, depocyt)
8. Watch or clock with second hand
**KEYPOINT:** The Ommaya Reservoir is surgically placed in the OR and can be used after OK’d by Neurosurgery, usually 48-72 hours after placement. If there are no complications, it can be left in place and used repeatedly for years.

**PROCEDURE STEPS:**

Perform a **TIME OUT** and double-check the patient identification and chemotherapy agent with a nurse or physician to eliminate “wrong patient, wrong drug, wrong procedure” medication errors.

**A. PREPARATION OF SITE**

1. Obtain written consent - Explain procedure and rational to patient, including risks (bleeding, infection, as well as potential side effects of chemotherapy being administered)
2. Assess neurological status; c/o headache, visual changes, seizures, confusion, etc.
3. Have patient in slight Trendelenberg at height comfortable for easy access to reservoir.
4. Wash hands, put on non-sterile gloves.
5. Wash and shave area (if necessary) over Ommaya dome.
6. Dry with 4 X 4 sponges.
7. Discard used materials, gloves; wash hands.

**B. ACCESS RESERVOIR**

1. Gently pump reservoir 6-8 times with index finger. (Note some patients report that when you pump the reservoir they hear bubbles or a swishing sound.)
2. Open sterile glove package and LP tray.
3. Drop sterile syringes, needles, butterfly access needle, into sterile LP tray.
4. Put on sterile gloves and drape site with sterile blue drape, hole should be open over Ommaya reservoir.
5. Prep area with betadine swabs. Do not use alcohol – it is neurotoxic!
6. Palpate area and insert access needle into the silicone dome of the reservoir.

**KEY POINT:** The reservoir is a silicone domed device with a small catheter attached which goes directly into the dominant lateral ventricle. Strict sterile technique is required to prevent introduction of infection/meningitis.
C. FLUID WITHDRAWAL/MEDICATION INSTILLATION

**KEY POINT:** Rate of fluid withdrawal and/or fluid instillation is not to exceed 1ml/min.

1. Attach 3 ml syringe and aspirate slowly and gently, observing return flow of CSF fluid.
2. Withdraw volume of CSF fluid necessary for studies, but not exceeding amount needed. If no studies are needed at the current time, and if the volume to be injected is small (<5cc) no fluid need be removed.
3. Most people produce around 500 cc of CSF per day (approx. 20 cc per hour), and normal adult CSF volumes are typically in the 150-300 cc range, so 3-5 cc makes little difference.
4. Attach syringe with medication to be injected. Inject medication at rate of 1ml/min; remove syringe.
5. Once injection is complete, remove needle and apply light pressure with sterile 2 X 2.
6. Pump reservoir 6-8 times to distribute medication and observe for leakage.
7. Apply Band-Aid.

Observe patient for headache, neurologic changes, nausea, vomiting, chills, fever, adverse drug reaction. Instruct patient to call if these problems develop in the next 24-48 hours.

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**Chemotherapy Administration – Intrathecal (IT) -**

Interventional Radiology (IR) will perform if bedside attempt is unsuccessful.

However, a physician must administer the chemotherapy.

**Perform a TIME OUT and double-check the patient identification and chemotherapy agent with a nurse or physician to eliminate “wrong patient, wrong drug, wrong procedure” medication errors.**

1. Formal written consent must be obtained from the patient (or guardian / relative, if more appropriate).

2. Confirm that platelet count is greater than 50,000 and INR is normal.

3. Perform lumbar puncture in usual, sterile manner.

4. Obtain volume of CSF fluid necessary for studies, but not exceeding amount needed. If no studies are needed at the current time, and if the volume to be injected is small (<5cc) no fluid need be removed.
5. Before administering the dose of intra-thecal chemotherapy, confirm that the spinal needle is correctly located i.e. there is free flow of CSF out of the needle and that there is a tight seal between the syringe and needle.

6. Slowly inject the IT chemotherapy at rate of 1ml/min

7. Verify that the entire dose has been administered

8. Gently detach syringe from hub of catheter

9. Replace stylet in catheter of IT needle

10. Withdraw IT needle

11. Properly dispose of all needles and syringes following OSHA guidelines

12. Patient should remain supine for 30 minutes. Review again post-procedure instructions.

Observe patient for headache, neurologic changes, nausea, vomiting, chills, fever, adverse drug reaction. Instruct patient to call if these problems develop in the next 24-48 hours

D. CSF FOR STUDIES/TESTS

1. Label specimen tube and send with appropriate requisitions to Hematology, Microbiology and/or Pathology as ordered.

LUMBAR PUNCTURE

Instructional Video created by Brown University:

http://www.youtube.com/watch?v=khwYVD6tIjI