

## MEDICAL GENETICS CANCER ROTATION

**Overview:** The Medical Genetics Cancer Rotation (MGCR) is a required rotation for the Medical Genetics Residents/Fellows (hereafter referred to as the MGF). The MGCR is a two month contiguous rotation that occurs at MD Anderson Cancer Center (MDACC). Prior to the MGCR, the MGF will have completed and passed the Cancer Genetics Course, a required didactic course of the Medical Genetics Training Program. The MGF will be responsible for aiding in/accomplishing the evaluation and counseling of 5-6 patients/week with progressively increasing responsibility from the first to the second month of the rotation. The GF will be supervised by the BC/BE Cancer Genetic Counselors (CGCs) in the various clinics. The CGCs include: Molly Daniels, MS, CGC, Kimberly Muse, MS, Kaylene Ready, MS, Thereasa Rich, MS, Devki Saraiya, MS, Thuy Vu, MS, and Diana Young, MS. Each CGC is assigned to one of five centers, including the breast center, gynecologic center, gastrointestinal center, endocrine center, and cancer prevention center. The MGF will also interface with the physician in each of these centers as appropriate. The physicians include: Banu Arun, MD, Jennifer Litton, MD, Karen Lu, MD, Patrick Lynch, MD, Nancy Perrier, MD, Miguel Rodriguez-Bigas, MD and Louise Strong, MD. The MGF will also attend the Neurofibromatosis Clinic under the supervision of Drs. Bartlett Moore and John Slopis. The NF Clinic meets every Tuesday (Pediatric patients), every Thursday (Adult patients) and every Friday (Pediatric and Adult). The MGF will attend all of the NF clinics one week during the second month of the rotation. The MGF will only evaluate/counsel two cancer patients on the week of attending the NF clinic. The MGF will attend the NF conference held on Thursdays at 1 PM during the week of attending the NF clinics.

**Conferences:** It is required for the MGF to attend the Clinical Cancer Genetics case review held every Friday at 2:30 PM. Additionally, the following conferences should be attended by the MGF at least twice in each month of the two month rotation:

1. GI Tumor Board-5:00 PM Monday
2. Breast Medical Oncology Planning Meeting-9:00AM Tuesday
3. Pediatric tumor Board-12:00 PM Thursday
4. Gyn Oncology Multidisciplinary Conference-2:15 Pm Thursday
5. Breast Multidisciplinary Conference-4:00 PM Thursday (please note conflict with Medical Genetics Sign-out Conference; when the MGF does not attend this conference they should attend Medical Genetics Sign-out Conference)

**General Rotation Schedule:** During the first month of the rotation, the MGF will first become oriented to forms/protocols of the rotation, observe cancer counseling sessions and observe members of the cancer team interacting with the patients. The MGF will perform intake for new patients, perform pedigree construction from the Genetic Risk Assessment Questionnaire, perform risk calculations utilizing Cancer Gene and learn fundamentals of cancer-focused family history assessment. The MGF should also observe at least one procedure/surgery for each of the following:

1. breast surgery (treatment or prophylactic) with Dr. Funda Meric
2. colonoscopy or endoscopy with Dr. Patrick Lynch
3. ductal lavage with Dr. Banu Arun.

As the first month progresses, the MGF should demonstrate the ability to perform data entry into CORE to generate computer drawn family history and perform full pedigree construction and cancer risk assessment on all assigned cases. The MGF may be instructed to contact

the patient prior to the appointment by telephone and gather all of the data to review the data with the supervising CGC. All cases should be discussed with the CGC prior to appointment either generally or in detail as required by the supervising CGC. The MGF will present to the attending physicians as requested. Over the course of the first month, the MGF will develop genetic counseling outlines for HBOC, HNPCC, FAP/AFAP and increased risk breast and colon cancer.

During the second month, the MGF will have increasing responsibility for the evaluation/counseling of the patients. The MGF will actively participate in the risk assessment and genetic counseling of patients with multiple types of inherited cancer syndromes. The MGF will effectively manage the counseling session(s) of the individual/family utilizing family history data, medical records and literature review both pre- and post-counseling. The MGF will be responsible for providing appropriate written correspondence with patients/families, providers and insurers. The MGF will prepare for all assigned cases by requesting and reviewing pertinent medical records as well as researching diseases, available genetic testing, and possible laboratory testing options. The MGF should provide the genetic consultation note on all assigned cases within one working day of the visit. The MGF should review all assigned cases with the supervising CGC prior to and after every session. When the supervising CGC assesses that the MGF is adequately prepared, the MGF will provide all aspects of cancer risk genetic counseling under their direct supervision. When desired by the patient/family, the MGF should facilitate enrollment into research protocols. Follow-ups and referrals should be handled as needed. The MGF will present all assigned cases at the CCG Conference and at other conferences as appropriate. By the end of the second month, the MGF should work effectively with the multidisciplinary team to provide genetic services to the patient/family.

**Legend for Learning Activities**

AR - Attending Rounds	M/DO - Modeling/Direct Observation	E/C–Ethics/Communication Conferences
FS – Faculty Supervision	ASR - Assigned Reading	JC - Journal Club
DPC - Direct Patient Care	WH - Written Homework	RC - Research Conference
PCC-Patient Care Conference		

**Legend for Evaluation Methods for Residents**

AE - Attending Evaluation	DO - Direct Observation
DSP- Directly Supervised Procedures	RWH - Review of Written Homework
CR - Chart Review	CSR - Chart Stimulated Review
360° - Global Evaluation	

**Principal Educational Goals and Objectives by Relevant Competency**

The principal educational goals for residents on this rotation are indicated for the relevant ACGME competencies. The tables below each goal list the corresponding educational objectives, the relevant learning activities, and the evaluation methods for each objective. The educational goals and objectives are applicable to Medical Genetics Residents/Fellows. The expected competency level demonstrated by the residents should reflect their respective level of experience.

**Competency 1 – Patient Care.** Provide clinical care in the area of Medical Genetics to patients/families who are either affected or potentially affected by a condition that has a genetic component.

**GOAL:** Determine whether a patient/family has a genetic component to the observed incidence of cancer for that patient/family and provide appropriate risk information to the patient/family.

	<b>Principal Educational Objectives</b>	<b>Learning Activities</b>	<b>Evaluation Methods</b>
1.	Obtain and document a medical history that includes a detailed family history with particular attention to cancer or cancer-related findings in the family.	DPC, FS	AE, CR, DO
2.	Perform pedigree construction utilizing the Genetic Risk Assessment Questionnaire.	DPC, FS	AE, CR, DO
3.	Perform risk calculations using Cancer Gene on all appropriate cases.	DPC, FS	AE, CR, DO
4.	Develop genetic counseling outlines for the common hereditary cancer syndromes (HBOC, HNPCC, FAP/AFAP and increased risk breast and colon cancer).	DPC, M/DO, ASR	AE, CR, DO
5.	Work effectively with the multidisciplinary team to provide genetic services to the patient/family.	ASR, AR	AE, CR, DO

**GOAL:** Develop empathy and understanding for patients who have been diagnosed with or are at risk for having cancer.

	<b>Principal Educational Objectives</b>	<b>Learning Activities</b>	<b>Evaluation Methods</b>
1.	Attend and participate in the following clinics a minimum of once during the rotation to observe the physicians and counselors in direct contact with affected/potentially affected patients: <ol style="list-style-type: none"> <li>1. Ovarian Cancer Screening with Dr. Karen Lu and Molly Daniels, MS</li> <li>2. High Risk Breast Clinic with Dr. Banu Arun and Julie Linder, MS</li> <li>3. MEN Clinic with Suzanne Shapiro, MS, and Dr. Douglas Evans</li> <li>4. Neurofibromatosis Clinic with Drs. Bart Moore and John Slopis</li> </ol>	AR, ASR, DPC, FS	AE, DO
2.	Observe at least one procedure/surgery for each of the following: <ol style="list-style-type: none"> <li>1. Breast surgery (treatment or prophylaxis) with Dr. Funda Meric</li> <li>2. Colonoscopy or endoscopy with Dr. Patrick Lynch</li> <li>3. Ductal lavage with Dr. Banu Arun</li> </ol>	AR, ASR, DPC, FS	AE, DO

**Competency 2 - Medical Knowledge.** Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge needed by a Medical Geneticist; demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care.

**GOAL:** Demonstrate knowledge regarding the genetic etiology of various types of hereditary cancer and cancer syndromes.

	<b>Principal Education Objectives</b>	<b>Learning Activities</b>	<b>Evaluation Methods</b>
1.	Describe findings of common hereditary cancer syndromes including HBOC, HNPCC, FAP/AFAP and increased risk breast	ASR, PCC	AE, CR

	and colon cancer.		
2.	Describe findings of more rare cancer and cancer-related conditions including neurofibromatosis, tuberous sclerosis, Gorlin syndrome (basal cell nevus syndrome), Cowden syndrome, and Li-Fraumeni syndrome.	ASR, PCC	AE
3.	Discuss current knowledge regarding the molecular basis of common hereditary cancer syndromes and more rare cancer and cancer-related conditions	ASR, PCC	AE
4.	Identify the current and future uses of DNA testing for genetic risk assessment of common hereditary cancer syndromes and more rare cancer and cancer-related conditions	ASR, PCC	AE

**Competency 3 – Interpersonal and Communications Skills.** Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

**GOAL:** To participate in/provide cancer genetic counseling to the patient/family.

	<b>Principal Educational Objectives</b>	<b>Learning Activities</b>	<b>Evaluation Methods</b>
1.	Participate in/provide cancer genetic counseling sessions for common hereditary cancer syndromes and more rare cancer and cancer-related conditions	WH, DPC, FS	AE, CR, DO
2.	To write cancer genetic counseling letters to the family after participation in-provision of the cancer genetic counseling session.	WH, DPC	RWH, AE
3.	Talk to family members about sensitive issues that relate to the patient's/family's occurrence of cancer, e.g., coping with the patient/families psychosocial needs relating to the cancer diagnosis and recurrence risk information.	DPC, FS	AE, CR, DO
4.	Communicate effectively with genetic counselors, physicians, other health professionals, and health related agencies to create and sustain information exchange and team work for patient care.	DPC, FS	AE, CR, DO
5.	Maintain accurate, legible, timely and legally appropriate medical records for the Cancer Genetics patients in the outpatient and inpatient setting.	DPC, FS	AE, CR, DO

**Competency 4 – Practice-based Learning and Improvement.** Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate, and improve one's patient care practice.

	<b>Principal Educational Objectives</b>	<b>Learning Activities</b>	<b>Evaluation Methods</b>
1.	Develop strategies to learn about future advances in the understanding of the genetic basis of cancer, in order to incorporate into one's practice improved screening, identification, counseling and management of these disorders.	ASR, FS	DO
2.	Identify the indicators in a family affected by cancer that would lead you to seek a genetics consult.	DPC, FS	AE, CSR
3.	Identify personal learning needs, systematically organize relevant information resources for future reference, and plan for continuing data acquisition if appropriate.	DPC, FS, M/DO	AE, CR, DO, CSR

**Competency 5 – Professionalism. Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.**

	<b>Principal Educational Objectives</b>	<b>Learning Activities</b>	<b>Evaluation Methods</b>
1.	Discuss the ethical, legal, financial and social issues involved in genetic testing of patients/families at risk to develop cancer or a cancer-related condition, especially testing of children for status status, and providing medical care for patients with known fatal disorders.	DPC, E/C, PCC	AE, DO
2.	Demonstrate personal accountability to the well being of all patients, even when other physicians are primarily responsible for their care, for example, by following up on lab results, writing comprehensive notes, seeking answers to difficult patient care questions, and communicating with primary care physicians.	DPC, AR, ASR, M/DO	AE, DO
3.	Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical and legal principles, and sensitivity to diversity while providing care to patients/families with cancer or risk to develop cancer.	DPC, AR, ASR, M/DO	AE, DO

**Competency 6 - Systems-Based Practice. Understand how to practice quality health care and advocate for patients within the context of the health care system.**

	<b>Principal Educational Objectives</b>	<b>Learning Activities</b>	<b>Evaluation Methods</b>
1.	Identify written and internet resources to aid in counseling patients/families with cancer or risk to develop cancer including availability of research studies in which the patients/families might wish to participate.	DPC, FS, ASR	AE, CR, RWH
2.	Demonstrate sensitivity to the costs of clinical care in Medical Genetics and take steps to minimize costs without compromising quality.	DPC, FS, ASR	AE, CR, RWH
3.	Recognize the limits of one's knowledge and expertise and take steps to avoid medical errors.	DPC	AE
4.	Understand key aspects of health care systems as they apply to care of patients and their families, including cost control, billing and reimbursement.	DPC	AE
5.	Recognize and advocate for families who need assistance to deal with systems complexities, such as lack of insurance, multiple medication refills, multiple appointments with long transport times, or inconvenient hours of service.	DPC	AE