

University of Colorado Denver Health Science Center

Division of Medical Oncology

Resident Curriculum

The Division of Medical Oncology provides the resident with the opportunity to gain training in adult clinical oncology, including in-depth knowledge of the management of patients with a wide variety of cancers. The diagnosis, staging, natural history, paraneoplastic conditions, management of complications of cancer and cancer therapy, as well as, the principles and applications of chemotherapy, radiation therapy, biologic agents and the use of combined modalities of cancer treatment are taught using a combination of didactic sessions, hands-on patient management and case evaluations. Emphasis is also given to the empathetic and professional management of end-of-life issues, palliative management of terminal disease, and global attention to complex medical decision making, including evidence based application of novel procedures and treatments.

Inpatient Hematology/Oncology Rotation – 4 weeks

Educational Purpose and Goals:

- Observe and understand the etiology, epidemiology, screening and diagnosis, staging, molecular genetics, pathophysiology, clinical presentation, natural history, and standard treatment options of the most common malignancies in the United States.
- Understand the short and long-term side effects of treatment of patients with cancer and the acute management of these side effects in the inpatient hospital setting
- Clearly identify the most common oncologic medical emergencies and paraneoplastic conditions and demonstrate competency in instituting appropriate emergent, urgent and follow-up medical interventions for them.
- Understand the social, quality of life, and educational issues inherent in the management of patients with cancer
- Understand and utilize the palliative care approach to terminal illness, including appropriate services, such as the Palliative Care Team, Social Services/Case Management team
- Understand the availability and appropriate indications for clinical research in the cancer patient population
- Become proficient in the supportive care of this patient population, including pain management

Patient Characteristics

Patients admitted to the service are from the wide range of Colorado and neighboring states. They reflect both a tertiary care level of expertise of the Division as well as traditional more common place presentations of the common malignancies occurring in the United States. All patients are adults, but gender and ethnic background are diverse and representative of the patient population of the institution as a whole.

Learning Venues

Patients are admitted to the Anschutz Inpatient Pavilion to the 11th floor. Residents will also participate in a purely educational opportunity to work with attending in the outpatient clinics of the Anschutz Cancer Center, a contiguous building to the AIP.

Principle Teaching Methods

Supervised direct patient care:

1. Residents encounter patients admitted either electively or urgently to the solid tumor oncology inpatient service for management of their malignancy or complication thereof. The population of patients is obtained from the outpatient oncology clinic, the emergency department, and in transfer from outside institutions. Faculty supervises the admission, histories, physical exams, daily management and discharge planning.
2. Patient care and management rounds are conducted daily for 1.5-2.5 hours. The management teams includes 2-3 PGY2 residents, one PGY4-6 hem/onc fellow, one attending physicians, pharmacists, nurses, social work staff, possibly a nurse practitioner and often a member of the palliative care team. Bedside rounds emphasize confirmation of the history taking and physical exam skills by the attending and a multidisciplinary approach, incorporating resource utilization, pharmacology, basic science, pathophysiology and evidence based management.
3. Procedures: The procedures that are either learned or reinforced on the hem/onc rotation include but are not limited to:
 - a. Arterial puncture
 - b. Central venous access
 - c. Lumbar puncture
 - d. Abdominal paracentesis
 - e. Thoracentesis
 - f. Nasogastric intubation
 - g. Bone Marrow aspiration and biopsy

4. Interpretive skills that are reinforced or learned on general ward medicine services include:
 - a. Complete blood count analysis and differential
 - b. Serum electrolytes and routine chemistry panel
 - c. Urinalysis and microscopic examinations of urine
 - d. Liver function tests
 - e. Coagulation studies
 - f. Radiological imaging interpretation (including CT, MRI, PET, Ultrasound)
 - g. Electrocardiogram
 - h. Peripheral smear of blood
 - i. Sputum Gram stain

Didactic sessions:

1. The residents attend their regular morning reports conference from 11am - noon each morning. One day/week for 3 weeks/month this session is slotted for a hematologic malignancies or solid tumor lecture or case review, at which the solid tumor attending serves as case facilitator and discussant.
2. Oncology specific didactics are available to the resident with interested in more in depth understanding of hem/onc basic science, clinical management, translational study or pathophysiology. Monday and Friday mornings have 2.0 and 1.0 hour teaching sessions respectively, including an Oncology Grand Rounds.
3. Lectures on Internal Medicine topics are also available to the residents, including the noon conference series with Medical Grand Rounds.

Principle Ancillary Educational Materials

- A. All residents and managing physicians are provided with the Oncology Curriculum and Learning Objectives prior to the start of each rotation.
- B. Residents are assigned targeted reading in primary literature sources by Attending physicians and or fellows throughout the rotations.
- C. 24-hour access to on-line programs and literature is available through the link to the University of Colorado Health Science Center Dennison Library.
- D. Computer-based resources are available at the hospitals to facilitate patient care, education and communication. The following are made available:
 1. Computer-assisted diagnosis and decision support
 2. Drug information including side effect and drug-drug interactions
 3. Electronic Medical Record internet accessibility
 4. Electronic textbooks of medicine

5. E-mail services
 6. Internet access to medical sites on the World Wide Web
 7. Laboratory and radiology results retrieval
 8. Multimedia procedures training
 9. Patient education materials
- E. The Medical Record is totally computerized.

Schedule and expectations of the rotation

Schedule and expectations of the AIP Solid Tumor Oncology Rotation

Welcome to the Solid Tumor Oncology Rotation. The Division of Medical Oncology is committed to educating you about the basics of cancer and its management while you are here. The information in this document is intended to orient you to the rotation and is duplicated the in the full curriculum for the rotation as well.

The inpatient rotation begins on the first day of each calendar month and ends on the last calendar day of the month. On the first day of the rotation, or the first Monday of the rotation for months that begin on a weekend, resident orientation with be held on the 11th floor after rounds.

Inpatient Oncology Resident/Floor Schedule 2010-2011

Each resident will spend their time on both the inpatient Solid Tumor Oncology Resident Teaching Service on the inpatient floor and participating in afternoon outpatient clinics of the Cancer Center as patient volume permits and call schedule/continuity clinic permits.

Monday-Friday, residents are expected to pre-round on their patients in preparation for formal attending rounds. Monday mornings may also require the three residents review and appropriately distribute any weekend admissions for ongoing coverage.

Monday-Friday

7-8am Residents round on their patients (Work Rounds)

8-9am Residents teaching organized by Oncology Attending

9-11am Team Rounds with Onc team

11AM Morning Report (Thursday case is Oncology case)

1PM Floor work/call or continuity clinic or afternoon UCCC clinics

In addition

Friday

8-9am Hem Onc Grand Rounds (optional but highly encouraged) RC1 South 8th Floor Conference Room

Saturday 7-10 work rounds

Sunday 7-10 work rounds

Please check with attending for actual round times.

Call Schedule

The two second year residents will rotate q2 days taking admissions and providing in-house patient coverage from 7am-7Pm each day. **There maybe a float on Thursday and Friday to assist with admission from noon-7pm on those days.**

Housestaff are not responsible for outpatient oncology coverage issues or consultation issues or BMT/hematologic malignancies patients or Biochemotherapy patients, these are to be directed to the Oncology Fellow on Call or the Solid Tumor Oncology Fellow on service

From 7pm – 7am admissions and patient cross-coverage will be provided by the AIP moonlighter. All residents are expected to attend sign in rounds with the AIP moonlighter at approximately 6:30 am to receive admissions and cross coverage issues from the overnight. The resident who is on call each day is expected to attend sign out rounds with the AIP moonlighter to provide signout about all patients, potential new admissions and cross coverage issues at 6:45pm each evening. The AIP moonlighter pager is: 303-266-5241

On daily workrounds, the residents and attending will assess the patient volume and potentially re-distribute patients to the non-resident covered teaching service to maintain the resident teaching services at their appropriate cap. For the solid tumor oncology service, the residents will cap at 8 patients/resident. On the weekends, one resident will have a pre-assigned day off. If the service is small enough that one resident would be sufficient to cover the rouding needs, a second resident may be given a day off at the discretion of the attending. This should be discussed on Friday at the conclusion of rounds. The CMR will create this schedule in advance of the month and provide it to you.

Outpatient Clinics

Residents will continue to participate in their outpatient clinics. Schedules for these clinics will be determined by the Department of Medicine/Continuity Clinic Leaders.

Residents are expected to come to the outpatient oncology clinics for further exposure to the field as the inpatient census allows on their non-call, non-continuity clinic days. All inpatient work must be completed and this cannot extend one's hours beyond the guidelines. During this time, the purpose is solely for education and exposure of the resident to outpatient cancer and/or benign hematology management. Dictation of the patient encounter is very much appreciated, however, it is optional and the resident is free to leave the clinic at any time if they are called back to the inpatient floor. Ideally, if the volume allows, the on call resident will handle all cross cover issues to provide their non-call colleagues time to immerse themselves in the outpatient world of oncology – which is where the field really functions. We strongly encourage residents to join their teaching attending in clinic as well as go to the heme malignancies clinic to get exposure to these common adult cancers. A schedule of the various outpatient clinics is posted in the conference room by the women's bathroom on the 11th floor. No prior arrangement for attendance in a specific clinic is necessary; though it is possible a clinic may be cancelled or already has a number of trainees in attendance. The interested resident will need to verify upon arrival to clinic with the attending that they may participate for that session. There is usually an abundance of options to choose from except perhaps around the holidays and our major meeting in June.

Conferences**Optional lectures and conferences offered are:**

Friday 8am Fellows conference/Onc Grand Rounds RC1 South 8th floor – a lecture series for more in depth and scientific learning about hem/onc

Tuesday noon Cancer Center Biology Lecture Series, RC1 North Auditorium – basic and translational science presentations about cutting edge research from local and outside researchers.

Hematology/Oncology conferences are held on Mondays and Fridays at 7 or 8am respectively in 8th floor the RC1 South conference room. RC1 is the first large blue glass building behind the hospital, readily seen out any north window. The conferences incorporate a mixture of fellow-lead case presentations and review of the literature as well as “grand round” style lectures given by invited speakers from inside and outside the division and institution. Emphasis is placed on basic science and translational science of oncology and hematology with in-depth discussions of various standard and experimental treatments.

Didactic Components

The clinical, translational and basic sciences of medical oncology and hematology are taught through regularly scheduled lectures, case presentations, and daily patient rounds. The etiology, epidemiology, molecular genetics, pathophysiology, clinical presentation, natural history, and treatment options, risks and benefits of various options and the long-term sequelae of the most common malignancies and benign hematologic disorders in the United States are part of the text provided to all medical residents at the start of the academic year (in preparation for this upcoming year). Samples of the topics covered are:

Breast Cancer
Cancer Therapeutics 101
Lung Cancer
Prostate and Genitourinary Cancers
Hematologic/Oncologic Emergencies
Supportive Care of the Oncology Patient
Transfusion Medicine
Leukemia
Lymphoma
Bone Marrow Transplantation
Colon Cancer
Melanoma
Clinical Research Ethics

As available:

Radiation Oncology Basics (XRT 101)
Palliative Care Medicine
Peripheral Blood Smear review

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Additionally, there is a general oncology Tumor Board that residents can go to as time and interest dictates:

Weds 7am General Oncology Tumor Board – ACP 3rd floor “the microscope room” half way down the hall to the right

Rotation Specific Competency Objectives

A. Patient Care

1. History taking. Residents will collect a thorough history by soliciting patient information and by consulting other sources of primary data in a logical and organized fashion. History taking will be hypothesis driven. Interviewing will adapt to the time available, use appropriate nonverbal techniques, and demonstrate consideration for the patient. The resident will inquire about the emotional aspects of the patient's experience while demonstrating flexibility based on patient need.
2. Physical Exam. The residents will perform a comprehensive physical exam, describing the physiological and anatomical basis for normal and abnormal findings.
3. Charting. residents will record data in a thorough, systematic manner.
4. Procedures.
 - a. The residents will demonstrate knowledge of: procedural indications, contraindications, necessary equipment, specimen handling, patient after-care, and risk and discomfort minimization. They will participate in informed consent and assist patients with decision making. They will correctly identify the meaning of test results.
5. Medical Decision Making, Clinical Judgment, and Management Plans. All residents will demonstrate improving skills in assimilating information that they have gathered from the history and physical exam.
 - a. Residents will be able to identify patient problems and develop a prioritized differential diagnosis appropriate to the oncology patient. Abnormal findings will be interrelated with altered physiology. They will understand their limitation of knowledge and seek the advice of more advanced clinicians. PGY2 residents will develop and implement therapeutic plans that are evidenced or consensus based. Residents will establish an orderly succession of testing based on their history and exam findings. Specific organ dysfunction will be anticipated based on known side

effects of therapy, with assistance from the fellow and attending in learning and integrated the potential toxicities of therapeutics in the onc setting.

- b. Residents will also regularly integrate medical facts and clinical data while weighing alternatives and keeping in mind patient preference. They will regularly incorporate consideration of risks and benefits when considering testing and therapies. They will present up-to-date scientific evidence to support their hypotheses. They will consistently monitor and follow-up patients appropriately. They will develop plans to avoid or delay known treatment complications and be able to identify when illness has reached a point where treatment no longer contributes to improved quality of life.

6. Patient counseling

- a. PGY2 residents will be begin to be able to describe the rationale for a chosen therapy and will be able to describe medication side effects in lay terms. They will assess patient understanding and provide more information when necessary. Residents will demonstrate the ability to be a patient advocate and integrate palliative care when appropriate with guidance from the Attending, fellow, and palliative care team. Residents will gain comfort with understanding end of life issues for cancer patients and an understanding of when further interventional or aggressive cancer treatment becomes futile.

B. Medical Knowledge

1. PGY-2 Residents will consistently apply current concepts in the basic sciences to clinical problem solving. They will use information from the literature and other sources including electronic databases. PGY-2 residents will demonstrate satisfactory knowledge of common hematologic and oncologic conditions, sufficient to manage urgent complaints with supervision. Residents must exhibit sufficient content knowledge of common medical conditions as encountered in the onc patient to provide care with minimal supervision by completion of the PGY2 year.
2. PGY-2 residents will demonstrate a progression in knowledge and analytical thinking in order to develop well-formulated differential diagnoses for hem/onc patients.

3. PGY-2 residents in addition to the above will demonstrate appropriate habits to stay current with new medical knowledge

C. Interpersonal and Communication Skills

1. PGY-2 residents will develop and refine their individual style when communicating with patients. They will strive to create ethically sound relationships with patients, the physician team and supporting hospital personnel. They will create effective written communications through accurate, complete, timely and legible notes. They will exhibit listening skills appropriate to patient-centered interviewing and communication. Residents will recognize verbal and nonverbal cues from patients.
2. PGY-2 residents will be able to communicate with patients concerning end-of-life decisions

D. Professionalism

All residents will demonstrate integrity, accountability, respect, compassion, patient advocacy, and dedication to patient care that supercedes self-interest. Residents will demonstrate a commitment to excellence and continuous professional development. They will be punctual and prepared for teaching sessions. Residents will demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, and informed consent. Residents are expected to show sensitivity and responsiveness to patients' culture, age, gender and disabilities.

E. Practice Based Learning and Improvement

1. PGY-2 residents will use hospital and University library resources to critically appraise medical literature and apply evidence to patient care. They will use hand-held computers, desktop PC's and Internet electronic references to support patient care and self-education.
2. PGY-2 residents will in addition consistently seek out and analyze data on practice experience, identify areas for improvement in knowledge or patient care performance and make appropriate adjustments. They will regularly demonstrate knowledge of the impact of study design on validity or applicability to individual practice.

3. PGY-2 residents will begin to model independent learning and development.

F. Systems Based Practice

1. PGY-2 residents will be sensitive to health care costs while striving to provide quality care. They will begin to effectively coordinate care with other health care professionals as required for patient needs.
2. PGY-2 residents will consistently understand and adopt available clinical practice guidelines and recognize the limitations of these guidelines. They will work with patient care managers, discharge coordinators and social workers to coordinate and improve patient care and outcomes.
3. PGY2 residents, in addition to the above, will enlist social and other out-of-hospital resources to assist patients with therapeutic plans.

Evaluations

Evaluation of the Residents by Faculty/Teaching Staff

Evaluation of the resident's clinical competence, professionalism, fund of knowledge and progress in these areas is conducted by the teaching staff throughout the rotation. Constructive feedback is provided throughout the rotation to help them in their progress. At the end of the rotation, formal evaluation is conducted using the Department of Medicine standardized evaluation system. The content of these evaluations are made available to the residents in summary form at scheduled review time points during their internal medicine residency.

Evaluation of the Faculty/Teaching Staff by the Residents

Residents complete and evaluation of the staff at the end of each rotation. The evaluations are given to the teaching staff and utilized as feedback on areas of strength and areas of needed improvement. They are also used in the overall evaluation of the rotation's progress.

Discharge summaries are the responsibility of the resident who admitted and/or followed the patient to the point of discharge. It is expected that resident's complete discharge summaries within 24 hours of a patient's discharge. Failure to complete discharge summaries in a timely manner jeopardizes the attending's privileges at the University and may result in a negative evaluation of the resident for the rotation.

It at any point in the rotation there are problems or questions, you may contact your chief resident, Oncology ward attending, or Dr. Stephen Leong, Director of Inpatient Oncology Resident Rotation at 303-266-0178 or email stephen.leong@ucdenver.edu