Inpatient leukemia curriculum

Goal

The leukemia inpatient service is a clinical rotation that provides house officers exposure to the diagnosis and treatment of leukemia illness resulting in hospital admission.  This rotation is intended to provide the exposure, clinical knowledge, skills, and professional attitudes needed to care for leukemia patients with a wide variety of disease states. Emphasis is placed on learning to coordinate the care and management of complex leukemia patients.

Learning Objectives

**PGY1 (intern year):**

**Patient care:**

* Perform and obtain a thorough, accurate and pertinent History and Physical Examination
* Formulate an initial assessment and plan on the basis of the H&P and review of the pertinent data
* Evaluate leukemia patients and identify the major problems/complications contributing to patient’s presentation and hospitalization
* Work with supervising resident and attending to finalize a working diagnostic and treatment plan
* Present a case cogently and thoroughly on morning rounds
* Re-evaluate each patient daily, interpret new data, reconsider the initial plan and formulate a daily working plan
* Initiate appropriate therapy for leukemia patients in consultation with the resident and attending physician
* Formulate a prioritized differential diagnosis and problem list for each patient
* Formulate a clinical question and request consultative care

**Medical Knowledge:**

* Demonstrate sufficient medical knowledge about common leukemia problems, therapies and adverse events: acute infections, neutropenic fevers, mechanism of action of commonly used systemic agents to treat leukemia, therapy-related side effects (including immune related adverse events), GI bleeding, acute kidney injury, progression of the underlying malignancy, goals of care conversations and a wide range of metabolic disturbances.
* Describe components of common presenting symptoms, disease states or syndromes
* Identify the basic pathophysiologic mechanisms responsible for admission to the leukemia service in individual patients
* Identify the effects of social determinants of health that may contribute to admission to the leukemia service in individual patients
* Utilize the basic principles of clinical reasoning in the initial evaluation and workup of leukemia patients, including problem representation and construction of a differential diagnosis.
* Understand initial work-up and therapeutic approaches for common leukemia patient problems.
* Discuss the common medical therapies for common leukemia patient problems, including indications, contraindications and complications
* Understand principals and limitations of biomarkers in oncologic malignancies and how they impact prognosis and therapy

**Practice-based Learning and Improvement:**

* Identify themes from attending rounds, morning report and didactic conferences that are relevant for the care of individual leukemia patients
* Identify clinical questions that arise at the point of patient care and demonstrate ability to seek these answers
* Identify deficient areas of knowledge and develop personalized learning plans to improve
* Develop a systematic manner of seeking out information necessary in the care of your patients
* Use computerized sources of results and information within the electronic medical health record (EMR)to enhance patient care
* Accept feedback and develop self-improvement plans

**Interpersonal and Communication Skills:**

* Observe and participate in meetings between patients, their families and the healthcare team when end-of-life issues and complex treatment options are discussed, applying principles of shared-decision making when applicable
* Create and sustain a therapeutic and ethically sound relationship with patients and/or proxy decision-makers
* Use effective listening skills
* Work effectively with others as a member of a health care team, including the leukemia team, cross-cover and consulting teams, and interprofessional team members
* Write pertinent and organized notes that accurately convey the patients’ health status and plan of care
* Create and maintain clear and succinct written sign-out documents to aid in patient handoffs and cross-coverage
* Give and receive patient handoffs using best practices in handoff communication

**Professionalism:**

* Act as a role model for colleagues, other house staff, nurses and students: (enthusiastic and committed to patient care; receptive to differing opinions of other healthcare members; respect all members of the healthcare team).
* Demonstrate ability to organize the work day to enable sufficient time for inpatient care and resident educational activities
* Maintain an attendance record at conference that exceeds 60%
* Maintain a record of timely responses to administrative requests, pages, telephone calls, etc.
* Complete required records such as duty hours reporting and chart completion
* Develop habits of punctuality that demonstrates respect for fellow residents, faculty, and ancillary staff

**Systems-Based Practice:**

* Identify situations in the care of leukemia patients when the services of consultants, pharmacists, dieticians and social workers would be beneficial
* Identify system flaws that interfere with your patient’s diagnostic or treatment plan
* Be aware of the consultative and ancillary services available in the hospital and develop a familiarity working with them
* Demonstrate constructive skepticism, question consult recommendations and consider your patient’s overall well-being prior to initiation of consultant recommendations
* Be a patient advocate in navigating the complex systems that affect patient care
* Demonstrate knowledge of epidemiologic and social-behavioral sciences to the care of the patient
* Participate in all joint conferences or rounds involving consultants from other disciplines
* Coordinate activities of other non-physician team members (RN, PT, RT, OT, SW) during transitions of care

**PGY2:**

**Patient care:**

* Supervise the work of the interns and medical students on the team in all aspects of the care of leukemia patients. This supervision involves reviewing H&P’s, assessment plans and progress notes and approving the recorded data of the supervisees
* Evaluate leukemia patients and identify the majority of problems/complications that are present or likely to occur during hospitalization
* Recognize atypical presentations of common diseases in leukemia patients
* Initiate appropriate therapy, in conjunction with your attending, for the major problems in your leukemia patients
* Contribute to the depth of knowledge and understanding during morning rounds, lectures and clinical conferences
* Develop a more sophisticated plan for patient care that involves psychological, socioeconomic and historical perspectives
* Perform competently as leader when addressing the needs of acutely decompensating patients
* Interact with consultants and physicians from other disciplines to coordinate appropriate care from multiple options
* Develop competence and the ability to teach the PGY-1 resident basic procedures such as nasogastric tube and peripheral IV insertion
* Provide and role model how to provide overnight cross-coverage for hospitalized leukemia patients, including careful follow-up on assigned tasks, evaluation or reevaluation of evolving clinical scenarios, and escalation of care when applicable
* Role model how to provide effective written and verbal handoffs and give feedback to junior team members

**Medical Knowledge:**

* Demonstrate sufficient medical knowledge about common leukemia problems, therapies and adverse events: acute infections, neutropenic fevers, mechanism of action of commonly used systemic agents used to treat leukemia, therapy-related side effects (including immune related adverse events), GI bleeding, acute kidney injury, progression of the underlying malignancy, goals of care conversations and a wide range of metabolic disturbances, and incorporate this into the daily plan on rounds.
* Identify the basic pathophysiologic mechanisms responsible for acute medical illness across a wide spectrum of severity in individual patients
* Identify the effects of social determinants of health that may contribute to admission and the disease/hospitalization trajectory of patient on the leukemia service
* Role model, teach and provide feedback on the basic principles of clinical reasoning in the initial evaluation and workup of leukemia patients.
* Role model, teach and provide feedback on basic principles of diagnostic testing in the initial evaluation and workup of leukemia patients, including pre-test probability, likelihood ratios and diagnostic test characteristics.
* Understand and initiate the initial work-up and therapeutic approaches for common leukemia patient problems
* Discuss the common medical therapies for common leukemia patient problems, including an understanding of the quality of evidence underlying therapeutic options
* Educate interns and medical students about the basic pathophysiologic mechanisms of complex leukemia patients *in informal settings*
* Become an educational resource for the team by obtaining more in-depth medical information on topics that are discussed on rounds
* Develop a sufficient level of medical knowledge to teach the PGY-1 resident and medical students
* Understand and incorporate into daily rounds principals and limitations of biomarkers in oncologic malignancies and how they impact prognosis and therapy

**Practice-based Learning and Improvement:**

* Identify themes from attending rounds, morning report and didactic conferences that are relevant for the care of individual leukemia patients and implement when appropriate
* Identify clinical questions that arise at the point of patient care, seek these answers and share with the team on rounds
* Identify deficient areas of knowledge, develop and implement personalized learning plans to improve
* Role model a systematic manner of seeking out information necessary in the care of your patients
* Role model how to use computerized sources of results and information to enhance patient care
* Accept feedback and develop self-improvement plans

**Interpersonal and Communication Skills:**

* Observe and lead meetings between patients, their families and the healthcare team when end-of-life issues and complex treatment options are discussed, applying principles of shared-decision making when applicable
* Create and sustain a therapeutic and ethically sound relationship with all patients and/or proxy decision-makers, even those skeptical of the healthcare system
* Use effective listening skills
* Role model how to work effectively with others as a member of a health care team, including the leukemia team, cross-cover and consulting teams, and interprofessional team members
* Write and teach others how to prepare pertinent and organized notes that accurately convey the patients’ health status and plan of care

**Professionalism:**

* Act as a role model for colleagues, other house staff, nurses and students: (enthusiastic and committed to patient care; receptive to differing opinions of other healthcare members; respect all members of the healthcare team), even in stressful/challenging situations.
* Organize the team’s work day to enable sufficient time for inpatient care and resident educational activities
* Maintain an attendance record at conference that exceeds 60%
* Role model for others how to respond in a timely fashion to administrative requests, pages, telephone calls, etc.
* Role model how to complete required records such as duty hours reporting and chart completion
* Role model habits of punctuality that demonstrates respect for fellow residents, faculty, and ancillary staff

**Systems-Based Practice:**

* Seek the input of consultants, pharmacists, dieticians and social workers in situations where their expertise would be beneficial for individual patients
* Identify and report system flaws that interfere with your patient’s diagnostic or treatment plan
* Utilize consultative and ancillary services available in the hospital and develop a familiarity working with them
* Demonstrate constructive skepticism, question consult recommendations and consider your patient’s overall well-being prior to initiation of consultant recommendations
* Seek out opportunities to be a patient advocate in navigating the complex systems
* Apply knowledge of epidemiologic and social-behavioral sciences to the care of the patient
* Actively advocate for your patients in all joint conferences or rounds involving consultants from other disciplines
* Role model for junior members of the team how to coordinate activities of other non-physician team members (RN, PT, RT, OT, SW) during transitions of care

**PGY3:**

**Patient care:**

* Supervise the work of the interns and medical students on the team in all aspects of the care of leukemia patients. This supervision involves providing feedback on H&P’s, assessment plans and progress notes and approving the recorded data of the supervisees
* Evaluate leukemia patients and identify a comprehensive list of problems/complications that are present or likely to occur during hospitalization
* Recognize atypical presentations of common diseases and know when uncommon/rare diagnoses need to be a diagnostic consideration
* Initiate appropriate therapy, in conjunction with your attending, for all the clinically relevant problems in your leukemia patients
* Seek opportunities to expand the team’s depth of knowledge and understanding during morning rounds, lectures and clinical conferences
* Implement a plan for patient care that involves psychological, socioeconomic and historical perspectives
* Perform competently as leader when addressing the needs of acutely decompensating patients and effectively transition care to other providers when appropriate
* Interact with consultants and physicians from other disciplines to coordinate appropriate care even when there are dissenting opinions about patient care needs
* Teach the PGY-1 resident basic procedures such as nasogastric tube and peripheral IV insertion
* Provide overnight cross-coverage for hospitalized leukemia patients, including careful follow-up on assigned tasks, evaluation or reevaluation of evolving clinical scenarios, and escalation of care when applicable
* Teach junior team members how to provide effective written and verbal handoffs and give feedback

**Medical Knowledge:**

* Demonstrate knowledge of and teach about diseases and hospitalization trajectories of common and uncommon leukemia problems, and incorporate this into the daily plan on rounds. Typical topics include: acute infections, neutropenic fevers, mechanism of action of commonly used systemic agents to treat leukemia, therapy-related side effects (including immune related adverse events), GI bleeding, acute kidney injury, progression of the underlying malignancy, goals of care conversations and a wide range of metabolic disturbances.
* Identify and teach about the basic pathophysiologic mechanisms responsible for acute medical illness across a wide spectrum of severity in individual patients
* Identify and teach about the social determinants of health that may contribute to admission and the disease/hospitalization trajectory of patient on the leukemia service
* Role model, teach and provide feedback on the basic principles of clinical reasoning in the initial evaluation and workup of leukemia patients.
* Role model, teach and provide feedback on basic principles of diagnostic testing in the initial evaluation and workup of leukemia patients, including pre-test probability, likelihood ratios and diagnostic test characteristics.
* Discuss and teach about medical therapies for common leukemia patient problems, including an understanding of the quality of evidence underlying therapeutic options
* Educate interns and medical students about the basic pathophysiologic mechanisms of complex leukemia patients *in informal settings*
* Become an educational resource for the team by teaching the team what you have learned from your reading about topics and patients that are discussed on rounds
* Teach the PGY-1 resident and medical students about common problems seen on the inpatient leukemia service
* Teach interns and students about the principals and limitations of biomarkers in oncologic malignancies and how they impact prognosis and therapy

 **Practice-based Learning and Improvement:**

* Identify themes from attending rounds, morning report and didactic conferences that are relevant for the care of individual leukemia patients and implement when appropriate
* Identify clinical questions that arise at the point of patient care, role model how to seek these answers and share with the team on rounds
* Develop and implement personalized learning plans to improve after identifying deficient areas of knowledge
* Role model and teach interns/students a systematic approach to seeking out information necessary in the care of your patients
* Role model and teach interns/students how to use computerized sources of results and information to enhance patient care
* Accept feedback and develop self-improvement plans for yourself and others on the team, when appropriate

**Interpersonal and Communication Skills:**

* Lead and teach junior members of the team how to lead meetings between patients, their families and the healthcare team when end-of-life issues and complex treatment options are discussed, applying principles of shared-decision making when applicable
* Create and sustain a therapeutic and ethically sound relationship with all patients and/or proxy decision-makers, even those skeptical of the healthcare system
* Use and teach other team members effective listening skills
* Role model and teach how to work effectively with others as a member of a health care team, including the leukemia team, cross-cover and consulting teams, and interprofessional team members
* Teach others how to prepare pertinent and organized notes that accurately convey the patients’ health status and plan of care and give appropriate feedback when necessary

**Professionalism:**

* Act as a role model for colleagues, other house staff, nurses and students: (enthusiastic and committed to patient care; receptive to differing opinions of other healthcare members; respect all members of the healthcare team), even in stressful/challenging situations.
* Organize the team’s work day to enable sufficient time for inpatient care and resident educational activities
* Maintain an attendance record at conference that exceeds 60% and ensure that other members of the team are also able to attend conferences
* Role model and teach how to respond in a timely fashion to administrative requests, pages, telephone calls, etc.
* Role model and teach how to complete required records such as duty hours reporting and chart completion
* Role model habits of punctuality that demonstrates respect for fellow residents, faculty, and ancillary staff

**Systems-Based Practice:**

* Teach other team members when to seek the input of consultants, pharmacists, dieticians and social workers in situations where their expertise would be beneficial for individual patients
* Identify and teach other team members how to report system flaws that interfere with your patient’s diagnostic or treatment plan
* Utilize consultative services and teach other team members about the ancillary services available in the hospital
* Teach other team members how to maintain a constructive skepticism, question consult recommendations and to consider your patient’s overall well-being prior to initiation of consultant recommendations
* Seek out opportunities to be a patient advocate in navigating the complex systems
* Apply knowledge of epidemiologic and social-behavioral sciences to the care of the patient
* Teach other team members how to actively advocate for your patients in all joint conferences or rounds involving consultants from other disciplines
* Teach other members of the team how to coordinate activities of non-physician team members (RN, PT, RT, OT, SW) during transitions of care

Clinical Experience

The leukemia curriculum consists of multiple components, described below. The purpose of the structured curriculum is to be certain that you are exposed to a wide variety of patients with leukemia conditions.

Trainees will provide care for a wide variety of patients with general medical problems and illness related to their underlying diagnosis of cancer from the time of presentation to the time of recovery and transfer to other facilities, or to the time of death. Your care will be integrated with that of the attending physician. Interns and residents also have an opportunity to interact with specialists and consultants in radiology, pathology, general surgery and surgical specialties, and all medicine subspecialties in the care of leukemia patients.

Educational methods and evaluation tools

**Educational opportunities:**

Multidisciplinary rounds with attending, fellows, residents and bedside nurses each morning

IM morning report (11:30 a.m. – 12:15p.m.) Monday through Friday

Core Internal Medicine lecture series (12:30 p.m. – 1:00 p.m.) Mon., Wed. and Thurs.

DOM Grand Rounds Tues. at noon

Afternoon didactic sessions, ~2:00 – 3:00 p.m., but times and days of the week will vary

**Assessment Method(s) or Evaluation Tool:**

(C) Clinical records review

(D) Direct observation

(E) Evaluation by non-faculty

(G) Global faculty evaluation

(L) Case log review

(P) Portfolio review

(PTS) Patient survey

(PES) Peer survey

(S) Skills checklist

(SA) Self-assessment form

(T) In-training exam

(O) Other (specify)

On the leukemia rotation interns and residents will be evaluated by:

 C, D, G, and PES.