



FELLOWSHIP EMPLOYMENT MANUAL

PEDIATRIC HEMATOLOGY AND ONCOLOGY

CHILDREN'S HOSPITAL & RESEARCH CENTER OAKLAND

(dba UCSF Benioff Children's Hospital Oakland)

2019-2020

This manual is to be used in conjunction with the Common Fellowship
Employment Manual

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I. Introduction

The current Hematology Oncology Fellowship Employment Manual represents the written agreement between the fellow and the departmental fellowship program at Children's Hospital & Research Center Oakland. In accordance with the Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Pediatrics, the Fellowship Employment Manual delineates the clinical and research responsibilities of the fellows. The clinical and research curricula and educational program are also included in the manual. As all the fellows are employees of UCSF Benioff Children's Hospital Oakland (BCHO), the Common Fellowship Employment Manual should be referred to for details of the terms and conditions of employment and benefits.

II. Fellowship Program Goals and Objectives

The field of Pediatric Hematology and Oncology encompasses a broad array of disorders in children and adolescents with cancer and non-malignant disorders of the blood and blood-forming tissues. The intent of Pediatric Hematology and Oncology fellowship program is to train pediatricians in the prevention, diagnosis and management of disease so as to provide comprehensive, compassionate care for children and adolescents. Our training program is unique and diverse though holds to a common goal to provide future academic pediatricians with a foundation to become competent clinicians, researchers, and teachers. To achieve this, our training program holds to the following objectives:

- To provide the clinical experiences and educational opportunities necessary to build a solid foundation of medical knowledge, critical thinking abilities, literature review, diagnostic acumen and technical skills.
- To provide academic pediatricians the research training and experience to develop careers as physician-scientists.
- To train well-rounded, empathetic clinicians to develop skills in communication and counseling with patients and families.
- To impart to our fellows the skills necessary to become lifelong learners and teachers, develop leadership skills and work effectively with team members.
- To impart to our fellows a sense of responsibility to act as advocates for the health of children and families within our society.
- To expose our fellows to the concept of multi-institutional collaborative research as exemplified by the pediatric oncology cooperative groups and encourage them to become active members of the profession's national societies.
- To prepare future pediatric Hematologists Oncologists for the changes taking place within our health care system including managed care, limitations on resource utilization, and the shift of medical care to ambulatory settings.
- To create pediatric Hematologists Oncologists able to practice the culturally competent medical care necessary in our increasingly diverse population.

- To teach professionalism by mentorship, validating the critical roles of personal ethics, responsibility, respect, compassion, communication, and self-awareness.
- To educate our fellows on current national guidelines and evidence based recommendations.
- To train in aspects of quality care and understand microsystems and continuous processes to evaluate and determine changes/needs in order to enact and monitor outcomes.
- To provide our training in an environment of respect and support, recognizing that fellowship is a difficult and challenging time in one's life.

III. Employment Policies

A. Policies and Procedures for Fellow Recruitment and Selection

Refer to the Common Fellowship Employment Manual for fellow recruitment information.

Fellow Selection

1. First Year Appointments

- Eligible applicants shall be selected on the basis of their preparedness, ability, aptitude, academic credentials, communication skills, and personal qualities such as motivation and integrity.
- The Pediatric Hematology Oncology fellowship program participates in the National Resident Matching Program (NRMP). Applications are submitted via the Electronic Residency Application Service (ERAS) one year prior to the starting date (summer prior to July 1 start date of the following year). After the Fall match, late applications will be considered for any unfilled position. Two accredited positions will be available per year with a total of six fellows for the entire program.
- The Fellowship Director and Associate Program Directors oversee the selection of first year fellows, with the assistance of the faculty and fellows.
 - The Fellowship Director and Associate Directors, with the assistance of selected fellows and faculty, evaluate the initial applications, letters of recommendation, and personal statements. After review of completed applications, all acceptable applicants are offered interviews. Applicants with VISAs will be reviewed, but consideration will be given to the resources (cost and time) necessary to process and maintain VISAs, potential grant funding eligibility, and promise as a future clinician or scientist. Should the initial review committee deem an applicant unacceptable for interview, a denial letter is sent to the applicant.

- 2) Fellowship candidates invited for an interview spend an entire day at the facility meeting with faculty and fellows. The Fellowship Director and Associate Directors oversee this interview process. There may be one to two applicants being interviewed on the same day.
- 3) Multiple faculty members, including the Fellowship Director, Associate Fellowship Directors, Division Chief of Hematology Oncology, Directors of Oncology and the Blood and Marrow Transplant Program, and representatives from different sub-disciplines (Hematology, Oncology, Psychology, research, etc.) interview the applicant. Additionally, the applicant may have the opportunity to meet with selected scientists at the Children's Hospital Oakland Research Institute (CHORI) for a focused interview and discussion of the applicant's research potential and interests. Fellows are critical in the interview and evaluation process and spend time with the applicants over lunch, with further discussion and a tour of facility.
- 4) All interviewees submit written evaluations and scores of the interviewed applicant to the Fellowship Director. These evaluations are reviewed and tallied for the final selection process.
- 5) Following completion of all interviews for the fellowship year, the selection committee of fellows and faculty, in addition to selected research faculty, participate in a final review of each applicant. Evaluations of the applications and interview summaries are reviewed. Acceptable applicants are ranked and submitted per the guidelines of the NRMP.
- 6) The fellowship program participates in the National Resident Matching Program (NRMP) and as such adheres strictly to the guidelines for enrollment, dates for rank list certification, confidentiality and integrity.
- 7) After the NRMP rank has been completed, all matched residents are sent letters of confirmation and contracts, by the dates stipulated by the NRMP.

d. Deferment of appointment is per the discretion of the Fellowship Director.

2. Second and Third Year Appointments

- a. Fellows accepted into the Pediatric Hematology/Oncology fellowship program will be provided a length of training sufficient to meet the American Board of Pediatric requirements for certification in Pediatric Hematology and Oncology, unless their performance proves unsatisfactory. Likewise, fellows accepting a position in the training program are expected to stay in the program until completion, though the training program has no obligation to allow continuation from year to year of a fellow judged to be unsatisfactory.
- b. All fellows are required to give formal notice of their intention **not** to continue in the program at least three months prior to the start of the next academic year. It is otherwise assumed that fellows will continue their training, as long as their performance has not been judged unsatisfactory, and each shall receive individual written letters of appointment two months prior to the end of the academic year.

- c. Each returning fellow will receive an updated copy of the Fellowship Employment Manual in July. This letter shall include the current salary scale for their level of training and set forth the general terms and conditions of employment at Children's Hospital & Research Center Oakland. This letter of appointment must be signed and returned to the Fellowship Director at least two months prior to the start of the academic year.
- d. In the event that the Pediatric Hematology Oncology Fellowship Program finds it necessary to recruit and appoint one or more fellows at the second or third level from outside the program, eligible applicants shall be selected on the basis of their preparedness, ability, aptitude, academic credentials, communication skills, and personal qualities such as motivation and integrity.
- e. A subcommittee will be created by the Fellowship Director to assist and advise in the selection of transferring second and/or third year fellow(s).
 - 1) This subcommittee shall be comprised of the Division Chief, Director of Oncology, and other members appointed as deemed appropriate by the Fellowship Director.
 - 2) The subcommittee shall evaluate all eligible applicants for the available position(s) and advise the Fellowship Director as to their relative qualifications.
 - 3) The Fellowship Director shall then determine, with the advice of the subcommittee, in which order eligible applicants shall be offered available positions.
 - 4) To determine the appropriate level of training for a fellow who is transferring from another ACGME-accredited fellowship program, the Fellowship Director must receive written verification of the previous educational experiences in an ACGME accredited Pediatric Hematology/Oncology fellowship and a statement regarding the performance evaluation of the transferring fellow prior to accepting that fellow into the program.
 - 5) If an applicant is under contract to another fellowship training program, the Fellowship Director shall contact that individual's current Fellowship Director prior to formally offering the position to request release of the applicant from their contract. If such release is not forthcoming, no position shall be offered to that individual.
 - 6) The applicant's former Fellowship Director will be asked to submit a written summary report of number of completed research and clinical months in addition to an attestation of clinical and research competence. This report will be used as a basis for determining the requirements necessary to successfully complete the fellowship and meet board eligibility, and be submitted to the ABP at completion of the fellowship.

B. Letter of Appointment

Fellows matched/accepted into the program will be provided a length of training sufficient to meet the American Board of Pediatric requirements for certification in their subspecialty, unless their performance proves unsatisfactory. Likewise, fellows accepting a position in the training program are expected to stay in the program until completion. The training program has no obligation to allow continuation from year to year of a fellow judged to be unsatisfactory (see

Common Fellowship Manual, Requirements for Promotion and Disciplinary Guidelines).

C. Medical Staff Appointment

Hematology Oncology fellows are *not* required to join the Medical Staff at UCSF Benioff Children's Hospital Oakland. However, if a fellow chooses to moonlight at BCHO, the fellow will be required to join the Medical Staff and be responsible for the dues. Fellows on the Medical Staff must comply with all the medical staff rules and regulations as stipulated in the bylaws.

D. Clinical Schedules

1. Yearly Tracks

The Program Director and Associate Directors create the clinical year schedules for each first year clinical fellow at the start of the new academic year. Consideration is given to input from fellows with respect to vacations or other personal preference (boards) Components of the yearly track are discussed in the Curriculum for the Clinical Year, Section IV. I.

2. Monthly Call Schedules

The fellowship program administrative assistant and senior fellows will be responsible for creating and maintaining the fellows' call schedule. Specific scheduling requests made in advance will be considered and accommodated whenever possible. Requirements for coverage with respect to nights, weekends, and holidays are determined by the Program/Associate Program Director, and are generally distributed evenly among all fellows. Any changes or requests after posting are subject to the discretion of the Program Director.

3. Schedule Changes

All schedule changes in the distributed monthly call schedule or clinical tracks, no matter how minor, must be approved in advance by either the Program or Associate Director. Schedule change approval requires that there be no adverse impact on patient care or other fellows. All steps, including notification of telephone operators, must be followed. Subject to the above, schedule changes will not be unreasonably denied.

4. Clinical schedule

A separate schedule of clinical assignments for each fellow will be available for view on the Shared drive (K), and be posted in the outpatient clinic in the charting room. This will be created and monitored by the fellowship program administrative assistant and include dates of participation in continuity clinics, inpatient assignments, inpatient consultation, night and weekend call, and participation in the outpatient sub-specialty clinics including LTFU, comprehensive neuro-oncology, general hematology, hemophilia, sickle cell

disease and thalassemia, etc. Fellows are responsible to ensure changes made less than one month prior to the beginning of the month are communicated and approved by the Program Director and supervising faculty (e.g. continuity clinic mentor, etc.).

E. Fellow Duty Hours and the Working Environment

1. General

Providing fellows with a sound academic and clinical education must be carefully balanced with concerns for patient safety and fellow well-being. Didactic and clinical education has priority in the allotment of fellows' time and energy. Duty hour monitoring assures faculty and fellows collectively have responsibility for the safety and welfare of the patients.

a. Supervision of Fellows

- All patient care must be supervised by qualified faculty. The Program Director must ensure, direct, and document adequate supervision of fellows at all times. In addition to direct supervision, the attending staff serves as a direct back up for clinical duties and medical decision making. Fellows must be provided with rapid, reliable systems for communicating with supervising faculty.
- Faculty schedules must be structured to provide fellows with continuous supervision and consultation. This clinical schedule is available on the Shared drive (K) and posted in the departmental office. There is always an assigned attending for each fellow clinical assignment (inpatient service, consult service, outpatient clinic, night and weekend call).
- Faculty and fellows must assume a joint responsibility to recognize signs of fatigue. The Program Director should be immediately notified if the fellow or faculty expresses a concern that the fellow cannot provide competent and safe clinical care or take call due to fatigue. The Program Director will excuse the fellow until he or she is rested, for a minimum of one day, and re-evaluate the situation, in addition to any extenuating circumstances leading to the excessive fatigue (prolonged night call, emotional exhaustion, moonlighting, etc.). The fellow and Program Director will create a plan to prevent such extreme fatigue and interference with clinical duties.

b. Duty Hours

The Pediatric Hematology Oncology Fellowship Program recognizes the importance of duty hour policies that support the physical and emotional well-being of fellows, promote an appropriate educational environment and facilitate patient care. The program fully complies with the general duty hour requirements adopted by the ACGME and any additional requirements of the RRC for Pediatrics. In general, the expected work

day for all fellows is from **8am to 5pm**, Monday through Friday, though frequently fellows may work longer hours for patient care or educational activities. Fellows are expected to maintain documentation of Duty Hours and notify the Program Director if the duty hour limits are exceeded.

- Duty hours are defined as all clinical and academic activities related to the fellowship 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, research, and scheduled academic activities such as conferences. Duty hours do *not* include reading and preparation time spent away from the duty site.
- Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house **and at-home** call activities. The addition of at home call to this duty hour limit is new as of July 2017. Hematology Oncology fellows are asked to keep track of their hours and alert the Program Director if this limit is exceeded (or preferably in advance of such) as well as observe the spirit of the requirement which is to ensure no fellow too tired is to be taking care of patients.
- Fellows will be provided a minimum of 1 day in 7 free from all educational and clinical responsibilities, averaged over a 4-week period, inclusive of call. One day is defined as one continuous 24-hour period free from all clinical, educational, and administrative activities. However, fellows may stay an additional 6 hours beyond this time for certain specified circumstances (e.g. providing continuity of patient care or taking advantage of educational opportunities). No new patients may be accepted after 24 hours of continuous duty.
- Hematology Oncology fellows work an average of one weekend per 4-6 weeks. This schedule provides each fellow a minimum of 6 days (three weekends) off every 4-5 weeks, or 1-2 days in 7 free from all educational and clinical responsibilities when averaged over a 4-week period. If more than 4 fellows are in the program, call continues to be shared equally and may be less frequent than every 4th night and weekend.
- Adequate time for rest and personal activities will always be provided. This will consist of a minimum 10-hour time period provided between all daily duty periods and after in-house call.

2. On-Call Activities

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

- In-house call is defined as those duty hours beyond the normal work day when fellows are required to be immediately available in the assigned institution. Fellows in the Hematology Oncology program are **not** assigned in-house overnight call responsibilities.
- At-home call (pager call) is defined as call taken from outside Children's Hospital & Research Center Oakland and any participating institutions.
- An attending is also assigned on-call and serves as a back-up for the fellow. Fellows are encouraged to call the attending for any call or situation in which the fellow is uncertain of the advice. Fellows are asked to call the back-up attending for new patients, transfer of patients to the ICU, death of a patient, or if the fellows deems it necessary to come into the hospital after hours to see a patient.
- Hematology Oncology fellows take at-home call (pager call) approximately every 4th-6th night and weekend (equally shared between fellows). If a fellow is ill or unable to participate in the call schedule, the Program Director will make a determination of how this call will be covered. Call responsibilities include answering evening phone consultations from home and evaluating new and follow-up consultations in the hospital during the daytime (weekend and holiday) or overnight. Fellows are asked to keep track of the. The Program Director works with the fellows to monitor the demands of at-home call and makes schedule adjustments as necessary to mitigate excessive service demands and/or fatigue.
- When fellows are called into the hospital from home, the hours spent in-house are counted toward the 80-hour limit. The faculty and Program Director must ensure that, if one of the Pediatric Hematology Oncology fellows has to spend most of the evening and night in the hospital caring for a sick patient, the 24-hour work rule goes into effect. Fellows must also assume responsibility for monitoring of these hours and alert their respective attending if the duty hour limit is met or surpassed. As soon as the fellow finishes basic patient care duty and/or an essential lecture, they are released to go home for the remainder of the day. This close interaction between the attending physicians and fellows to monitor night and week-end call has worked very well and requires continual scrutiny and participation by all involved. Additionally, the Program Director monitors workload with the fellows by periodically checking in personally, especially those on the inpatient service, and those whose night call sign-out appears particularly complex with documentation of long hours in-house or by phone.

3. **Monitoring**

Violations of the duty hour rules can only occur if a fellow engages in moonlighting activities, if there is an inadvertent error in the scheduling of on-call weekends, or if fellows trade on-call nights or weekends. Moonlighting is addressed in the next section III. F. In order to prevent violation of duty hour rules resulting from scheduling mistakes or trading of on-call weekends between fellows, the following protocol has been developed:

- A preliminary on-call schedule will be developed with consideration of scheduling requests by fellows. Fellows will be assigned to take call every 4th-6th weekday (approximately one day a week) and every 4th-6th weekend, dependent on the number of fellows in the program (or if a fellow is unable to participate in the call system). This schedule must be reviewed and approved by the Program Director.
- Fellows may request changes to the call schedule such as trading of on-call weekends, but such changes must be reviewed and approved by the Program Director prior to implementation in order to ensure that duty hour limitations are not violated. Fellows must consider the duty hour limitation when making changes in the call schedule and ensure compliance with these policies.
- Prior to finalization and distribution of the on-call schedule each month, the Program or Associate Director will make a final review and approve the schedule to ensure there are no potential violations.
- If scheduling conflicts are such that the fellow is put in a situation that may violate duty hour limitations, then the Program or Associate Program Director or faculty must utilize one of the following options:
 - Instruct the fellow to take mandatory time off during the week to ensure that there is at least 1 day off in 7 days (averaged over a 4-week period); or,
 - Relieve the fellow of on-call duties for the night, holiday or weekend in question so that a violation does not occur. The on-call attending will then assume all call responsibilities without the fellow or an alternate fellow may assume the first call.

F. Moonlighting

Because Hematology/Oncology fellowship is a full-time endeavor, moonlighting must not interfere with the fellow's ability to achieve the goals and objectives of the educational program. Therefore, fellows of the ACGME accredited training programs sponsored by Children's Hospital & Research Center Oakland are subject to guidelines as detailed in the Common Fellowship Manual.

G. Paychecks

Hematology Oncology fellows are employees of UCSF Benioff Children's Hospital Oakland. Paychecks are issued every other Friday. Additionally, the annual stipend is paid in a separate monthly check. Fellows may elect to have their paychecks deposited directly into their bank account.

H. Salaries/Employee Contract

The salary scale followed is that determined by the Union (residents and ED fellows) and the hospital and updated on an annual basis. In addition, an annual housing stipend is added to the compensation package.

The current salary/housing stipend is reflected on the individual letter of appointment. See the packet from Human Resources (and the Common Fellowship Manual) which provides more details of the benefit package for employees. This will also be reviewed at the Human Resources Orientation.

I. Vacation

All fellows are provided a total of 4 weeks of vacation annually, and this may be taken in 1 or 2 week blocks. Requests for shorter or longer periods of time off will be considered individually. The dates of assigned vacation are included in the assigned yearly schedule tracks and changes in vacation dates are subject to the usual change procedures. Up to one week of vacation per year may be carried over to the next year, subject to the approval of the Program Director. Fellows are asked to submit their requests for time away as far in advance as possible, ideally 1-2 months prior to the start of the academic year.

J. Holidays

The following are recognized holidays at Children's Hospital & Research Center Oakland: New Year's Day, Martin Luther King, Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

Holiday coverage is similar to weekend coverage. Fellows not on call that day are not required to come into the hospital. All conferences and clinics are cancelled on recognized holidays.

Assignment of holidays will be primarily based on patient care needs but reasonable effort will be made to accommodate individual fellow requests. In general, each fellow will be assigned 1-2 holidays per year.

K. Illness

Any fellow with an illness necessitating absence from the hospital, regardless of assigned rotation, must notify the Program Director immediately. The Program Director will request documentation from a treating physician for periods of illness or disability which extend beyond three (3) consecutive days, or which appear chronic or recurring. Refer to the Human Resources Orientation packet for details of sick and disability leave.

Extended absences (\geq 1 week) due to illness which interfere significantly with the fellow's educational experience or the ABP guidelines for fellowship training may delay the fellow's graduation from the program. Fellows will be required to make up the time. The ABP requires a petition for an absence of more than 3 months (12 weeks) from the program. As fellows are allotted 3 months (12 weeks) of vacation, any time beyond 1 week during this 36 month training period

will require a petition. All absences, including extended absences, are to be reported to HR and count towards PTO (paid time off) and my cut into the allotted vacation time. Refer to Leave of Absence section.

L. Leave of Absence

Leaves of absence shall be administered within the purview of the Family and Medical Leave Act of 1993 (FMLA), the California Family Rights Act (CFRA), and the State Disability Insurance (SDI Family Leave Act). For specific information on leaves of absence please contact the Human Resources department. Also, refer to Leave of Absence in the Common Fellowship Manual. *Additionally, any leave of absence, depending on length, may require the fellow to extend their period of training to meet the ABP requirements for Board Certification. An extended absence of more than 3 months over the 36-month training period requires a submission of a waiver to the ABP by the Program Director and is subject to review by the Credentials Committee.*

M. Other Absences

Fellows are expected to remain in the hospital during the usual working hours of their assigned rotation, typically 8am to 5pm, Monday through Friday. Exceptions to this policy require the notification and approval of both the supervising faculty member and the Program Director.

Absences due to personal or family crisis (including death or illness of family members), necessity for job-related interviews, routine medical/dental/vision appointments, and other circumstances not covered above, are allowed, subject to notification and approval by the Program Director.

N. Educational Leave and Expenses

Paid educational leave is available **for fellows** (up to 5 days and \$1,500 each year) to attend medical or scientific conferences. Leave **must** be approved in advance by the Program Director. Additional leave and/or paid expenses **may** be granted to fellows to attend conferences in which they are presenting their work in an oral session, **but only if prior approval is obtained.**

Original receipts and/or cancelled checks are necessary for reimbursement and should be submitted to the administrative assistant and Program Director for approval. All monies must be spent by the end of each academic year and cannot be carried over to the next year, unless approved by the Program Director.

Approved medical education expenses include conference expenses (registration fee, travel costs, lodging, per diem meal allowance, poster/material costs and fee for the submission of presentations, etc.), review courses, research training courses, in-training exam, travel expenses between campuses, medical textbooks, medical journals, and medically related software expenses. If in doubt, contact the Program Director prior to incurring the expense

O. Insurance/Benefits

1. Health/Dental/Vision Coverage

Refer to Human Resources orientation materials.

2. Malpractice Insurance

UCSF Benioff Children's Hospital Oakland provides professional liability coverage for all fellows acting within their assigned duties while on scheduled rotations at designated institutions during their period of fellowship training. Fellows will be covered while on required rotations at other hospitals or facilities. Malpractice insurance is not provided for fellows while employed or moonlighting outside of UCSF Benioff Children's Hospital Oakland.

Details of the malpractice insurance policy including terms, limits and duration of coverage are available from the Human Resources department.

3. Life Insurance

Currently, there is no life insurance policy available. However, financial planning and assistance with choosing and purchasing life insurance is available and encouraged.

4. Disability Insurance

A Disability Insurance policy is provided by BCHO and includes both short-term and long-term components. Fellows will receive information on this policy and benefits during the HR orientation. Fellows may also obtain an additional individual disability policy (that can continue beyond the employment at BCHO) and are encouraged to seek financial advice regarding such an individual policy. Additionally, Disability Insurance is provided through the California State Disability Insurance Program with required payroll deductions of premiums biweekly.

5. Retirement/Pension Plan

BCHO participates in a pension and profit sharing plan. Information will be provided during the Human Resources orientation. Fellows are encouraged to seek independent financial advice.

P. Parking

Parking is available in the Parking Garage located adjacent to the Outpatient Center. Parking expenses for fellows are covered by BCHO.

Q. Office Space

Shared office space is provided for fellows and is located in the trailer adjacent to the Hematology Oncology Departmental office building. This office provides ample space for books, files, and personal belongings. Computers, HIS/EPIC

terminals, and phones are available for each fellow in the office. Mailboxes are located in the main departmental office.

R. Housing/Laundry/Meals

As fellows are not expected to take in-house call, no provisions have been made to offer housing, laundry facilities, or meals.

S. Employment Assistance Program (EAP) and Psychological Support

All fellows have access to confidential counseling services through BCHO's Employment Assistance Program (EAP). Fellows are urged to seek assistance as needed to maintain good mental health. Professional assistance is available for stress, depression, marital difficulties, alcoholism, drug abuse, legal, financial, and other problems. Subject to certain restrictions, these services are provided free of charge to the fellow. Participation in this program is strictly voluntary. Interested fellows should contact the EAP directly at 1-800-834-3773. All calls and services are completely confidential. Additionally, confidential counseling services are available through the mental health services available on the medical insurance plan.

The Hematology Oncology fellowship program provides fellows with instruction and opportunities to interact effectively with patients, patient's families, professional associates and others in carrying out their responsibilities as physicians in the specialty. Additionally, fellows learn to create and sustain therapeutic relationships with patients and work effectively as members or leaders of multi-disciplinary patient care teams or other groups in which they participate as researchers, educators, health advocates, or patient care providers. Skills in the recognition and management of psychosocial stressors and problems are keys to a successful career in this profession. Fellows are given the opportunity to develop skills in communication and counseling in addition to provision of comprehensive care. The availability of back-up support systems is reviewed with the fellows, to be utilized when patient care responsibilities are unusually difficult or prolonged. Several methods of communication and teaching of psychosocial skills are available for fellows. The Professionalism Noon Conference series addresses a number of these concepts. Additionally, the clinical psychologists have developed a session with the first year fellows in the Orientation Month on accessing services to assist them in patient care.

T. Evaluations/Promotional Review/Role of the Clinical Competency Committee (CCC)

1. General Policies

Evaluations and promotional review procedures in use at Children's Hospital & Research Center Oakland are in accordance with the most recent guidelines of the ACGME, known as the Next Accreditation System (NAS). Assessment of fellow performance throughout the program must be documented with the results being utilized to improve

fellow performance. The purpose of the evaluation process by the Pediatric Hematology Oncology fellowship program is to:

- Identify fellows experiencing significant difficulties as early as possible in their training so as to provide support and effective remediation. Deficiencies, if any, are immediately discussed with the fellow by the Program Director, rather than waiting for the evaluation period, so as to allow immediate guidance and correction. Refer to Common Fellowship Manual, Academic Probation.
- Provide formative feedback, in as continuous a fashion as possible during fellowship training, to allow the fellow to obtain maximum educational benefit from their fellowship training.
- Provide a consistent method to determine the appropriateness of promotion of an individual fellow from year to year.
- Provide adequate documentation to protect both the fellow and the fellowship program in the event of disciplinary proceedings.
- Provide a record of fellow performance that facilitates application for certification to the Hematology/Oncology sub-board of The American Board of Pediatrics and for the writing of future letters of recommendation that accurately reflect the fellow's strengths, weaknesses, and overall fellowship performance/competence.

The methods used for evaluation must produce an accurate assessment of the fellows' competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. The evaluation process utilizes tools that have been created in concert with the Training Committee at ASPHO (American Society of Pediatric Hematology Oncology). These evaluations are designed to assess fellows using a competency-based system in meeting the requirements of the new NAS (Next Accreditation System) for achieving milestones commensurate with level of training. Evaluation of faculty and fellow performance, in addition to program assessment, will be completed in a confidential manner and will be generated following each rotation. Mechanisms for providing regular and timely performance feedback to fellows include:

- Oral discussion and critique in real time is highly encouraged. The Fellowship Program Director and Associate Directors will facilitate this process to assure fellows have the opportunity to learn and apply critical review such as to improve their educational outcomes and performance.
- A **Clinical Competency Committee (CCC)** has been created, as per the new ACGME NAS guidelines, to provide broad input to the Program Director about each fellow's clinical performance. The CCC is comprised of a minimum of three faculty members that may

include the Program Director, Associate Program Directors, Division Chief, and any member of the Hematology Oncology faculty. The CCC functions in an advisory role and reviews all completed written evaluations for each fellow and generates a summary and recommendations with respect to the performance and promotion of each fellow. The CCC meets semi-annually and assures reporting of the Milestones evaluations, prepares a summary report of the committee's recommendations and rationale, specifically gives recommendations for promotion, remediation or dismissal, and advises the **Program Evaluation Committee (PEC)** about any specific relevant issue.

- Written fellow evaluations from faculty mentors on progressive improvements in clinical competence are requested following each rotation in the first year and at periodic intervals in the second and third year, dependent on the specific clinical rotation. Fellows and faculty are asked to review the written goals and objectives contained within this manual at the start of each rotation. Assessments are based on direct observation of clinical patient skills including history taking and physical examination, charting, communication with staff and patients/families, and general observations of personal skills (character and professionalism). A record of evaluation for each fellow is accessible for review with the Program Director at any time and kept in a confidential location. These evaluations will be obtained monthly and reviewed collectively by the Clinical Competency Committee (CCC, see below) on a semi-annual basis (unless remediative action is required). A summary of evaluations by the CCC will be reviewed by the Program Director in person with each fellow semi-annually.
- Semi-annual clinical faculty evaluations are sought from the fellows and submitted anonymously so as promote honesty and prevent the possible concern of ill will towards the fellow. Faculty have the opportunity to review the anonymous fellow evaluations and these evaluations may be used in faculty evaluation and promotion.
- 360° evaluations are requested from the clerical staff, nursing and ancillary staff, patients, and peers for each fellow on an annual basis. Clinical mentors will assist the Program Director in the distribution of patient/family evaluations of the fellow. These are currently available in Spanish and English. Alternatively, the mentor may fill it out with the patient representative if literacy is in question.
- Evaluations are requested at all required teaching sessions, including the Fellow's Hematology Oncology Educational Conference, Journal Club, Hematology Case Conference, and Resident Noon Conference. The results of these evaluations are reviewed by the CCC and shared with fellows at individual (semi-annual) evaluation sessions to discuss progress towards competence in teaching.

- Fellows will be asked to perform a self-evaluation on a semi-annual basis. Fellows should identify three (3) areas of needed improvement and work with their mentor to develop a **Professional Improvement Plan**. This is submitted to the CCC prior to each semi-annual review, along with updated fellowship documents demonstrating productivity and engagement. See Checklist below for provision of documents to the Program Director prior to each semi-annual CCC review.

- **CCC Checklist for fellows:**
 - Logs: Primary patients, Consent conferences, Procedures, Educational conferences
 - Licensure/certificates: Medical license, ensure all residency and medical school documents submitted, PALS/BLS, CITI training
 - Performance Improvement Plan, new and update on past PIP
 - Ensure all faculty and program/rotation evaluations are complete
 - Quality Improvement project plan/completed reports
 - CV with publications (and plans on publications)
 - Research plans and timeline
 - Administrative role(s) and committee participation

- Fellows and faculty are asked to perform a Program evaluation on an annual basis. The Program Director will review these evaluations in a formal manner with the Program Evaluation Committee (PEC), the faculty and fellows at departmental meetings, and integrate the findings and recommendations into program development on a yearly basis.

- A semi-annual evaluation is conducted between the Program Director and fellow. In addition, the Associate Program Directors, Division Chief, and/or clinical or research mentors may participate. During this evaluation session all clinical and research evaluations are discussed, feedback is sought, critical review is given, future goals are generated, and all is summarized in a written form. The CCC will convene prior to this evaluation session and provide a formal summative evaluation which will include review of *requested documents* including: Primary patient log, Procedure log, Educational conferences given, Quality Improvement project summary/progress, CV with publications, abstracts, posters and other writing projects, and an individualized Performance Improvement Plan (PIP). Additionally, fellows should reflect on their prior PIP and personal accomplishments. The SITE exam results are also available for the end of year CCC review. Fellows are asked to be prepared to discuss their Performance Improvement Plan and all submitted documents (see CCC Checklist above), as well as provide verbal feedback and critique to assist with future program development. Finally, goals for the up-coming year are created, and, a new educational plan is generated to address attainment of future goals and, if necessary, correct deficiencies. An annual written evaluation is generated by the CCC initially and modified as needed by the Fellowship Director and fellow.

- Research fellows (second and third year) must submit evaluations of the research faculty and the research experience. In turn, research mentors are asked to submit an evaluation of performance of research duties on a semi-annual basis. The SOC serves as an additional evaluation method to monitor progression towards the goal of attainment of scholarly activity as stipulated by the ABP. Fellows are asked to submit to the SOC a progress report and curricula vitae documenting all research activities such as abstracts, posters and oral presentations. Fellows also present their work to date to the SOC in a formalized fashion approximately every 6-9 months (see Research Competence/Scholarship Oversight Committee, Section V.).
- The Program Director conducts a final evaluation for each fellow at the completion of the 3-year fellowship program. The evaluation includes a review of the fellow's performance during their training including the final period of education. As with the semi-annual and annual evaluations, the fellow is asked to provide a progress report or final work product on the research component of training to the SOC, as well as a curriculum vitae with a listing of accomplishments. Feedback from the fellow is sought with respect to improving the educational experience for future fellows. The final evaluation verifies that the fellow has demonstrated sufficient professional ability to practice competently and independently, in either clinical or research arenas, or both. The final evaluation becomes part of the fellow's permanent record maintained by the department. Additionally, the Program Director generates a formal letter to the fellow verifying successful completion of the fellowship program, preparedness for competent, independent practice, and board eligibility.
- Written evaluations are part of the fellow's permanent record, which is maintained in a confidential manner by the Program Director. These evaluations may be utilized in the future by the director for attestation of clinical and research competence for board application and future job references.

2. Academic Probation, Non-renewal of Appointment/Contract

Refer to the Common Fellowship Manual.

3. Requirements for Promotion

Promotion from one year to the next in fellowship assumes the fellow has attained appropriate proficiency in performance of patient care duties and/or research. Following are guidelines for fellows and faculty to assist with the evaluation methods and decision with respect to promotion

a. Expectations for Clinical Skills at the End of the First Year

- Fellows are expected to appropriately handle the clinical service volume with respect to inpatient rounds, consultation requests, performance of procedures, admission of new patients, and triaging phone calls as appropriate.
- Fellows are expected to have performed independently (supervised by faculty) common procedures in Hematology Oncology which include: bone marrow aspirates, bone marrow biopsies, lumbar punctures with intrathecal chemotherapy, and peripheral chemotherapy via PIV. Indications for the procedures, familiarity with complications, obtaining informed consent, and documentation are required to be demonstrated.
- Fellows should be facile at evaluating and creating care plans for newly diagnosed patients, including participation in clinical trials as appropriate. Fellows should be able to navigate clinical trial protocols and ensure compliance with required studies and therapies, including documentation.
- Fellows should be competent to lead an Informed Consent conference independently (though supervised by faculty).
- Fellows should demonstrate responsibility for teaching of residents and students on the teams and providing appropriate supervision and instruction.
- Fellows are expected to satisfactorily take call and demonstrate in the sign-out, discussion with faculty, and follow-up that appropriate advice has been given.
- Mentors and faculty must attest to these skills in the written evaluations for promotion to the next year.
- Fellows should meet or exceed the minimum goals for NAS milestones in each core competency, as determined by the CCC during semi-annual reviews.

b. Promotion in the Research Years

- Fellows must continue to demonstrate clinical proficiency as per all the requirements in the first year, with noted improvement in knowledge base and independence, as reflected in the clinical faculty evaluations. Fellows should actively assume increased responsibility for patient care during assigned rotations/clinics/call.
- Fellows must develop a hypothesis driven research project, with appropriate guidance by the Program Director, Division Chief, and research mentor(s). This project should be developed into a full proposal early in the second year of fellowship. Fellows are encouraged to apply for extramural funds. Fellows are expected to continue to work progressively on their primary research

project in the second and third years. Presentation of the work to date at professional societies is encouraged.

- Fellows may elect to take the UCSF course, “Training in the Clinical Research” if relevant to their research (clinical or translational). The cost of the course will be covered by BCHO or the research mentor’s grant.
- Fellows are expected to present their research progress 2 times per year before the SOC (total 4 presentations in 2 years), an external review board, for critical review. The SOC’s evaluation should reflect progress as appropriate at each stage of training.
- Fellows should meet or exceed the minimum goals for NAS milestones in each core competency, as determined by the CCC during semi-annual reviews.

U. Disciplinary Guidelines: Probation and Dismissal, Appeal and Grievances

Refer to Common Fellowship Manual.

V. Fellowship Program Closure/Reduction

Refer to the Common Fellowship Manual.

W. Policy on Administrative Support in the Event of Disaster

The Children’s Hospital & Research Center Oakland GME committee, the Residency Director, and the Fellowship Directors have developed a policy in the event of a disaster that leads to interruption of patient care and resident/fellow education. The ACGME requires that the sponsoring institution have such a policy that addresses administrative support for the programs, including assistance in continuation of resident/fellow assignments. To the extent reasonably possible, Children’s Hospital & Research Center Oakland and the individual residency and/or fellowship programs will provide assistance in relocation and continuation of education. It is recognized such physicians may be involved in the community in disaster assistance. The Hematology/Oncology Program Director has had discussion with the Program Director at Rady Children’s Hospital in San Diego, CA to develop a reciprocal policy for fellowship training in Pediatric Hematology Oncology in the event of such a disaster. We are unable to guarantee paid positions, however, both programs will work collaboratively to provide short term or long term educational opportunities.

Refer to the Common Fellowship Manual for the policy and procedure in event of disaster.

X. Institutional Agreements

Fellows may participate in elective or required rotations outside of the sponsoring hospital, and, as such, the Program Director is required to create an Institutional Agreement with each of the participating programs with a rotation of one month

or longer. Currently, the Hematology Oncology fellows do not participate in off-site educational endeavors of 1 month or longer. The current off site rotations are: Radiation Oncology (Alta Bates Medical Center, 2 weeks), Palliative Care and Pain Service (UCSF, 2 weeks), Blood Banking (Vitalant, SF, 1 week), and Hematopathology (UCSF, 1 week). Agreements for rotations of 1 month or longer contain written objectives (as outlined in this manual), supervising physician(s), evaluation process, and confirmation that malpractice, salary and benefits will continue to be covered by the Pediatric Hematology Oncology Department.

Y. Committee Representation

Fellows are encouraged to join a Medical Staff committee. These include both standing and ad hoc committees. Appointment of fellows to a medical staff committee is at the discretion of the Program Director, the Medical Staff President, and the relevant committee chairpersons. A senior fellow representative, selected by his/her peers, is appointed yearly to the Graduate Medical Education Committee. This position rotates yearly amongst the three fellowship programs. All first year fellows are members of the Hematology Oncology department Medical Quality Improvement Committee (5 South MQIC) which meets monthly, under the direction of the Inpatient Medical Director. Additionally, a fellow representative will be asked to participate on the Program Evaluation Committee (PEC) for Hematology Oncology. All fellows are requested to participate in the fellow selection committee annually.

Z. Departmental Meetings

The Department of Hematology Oncology meets twice monthly, on the first and third Fridays from 8:00 to 9:00 a.m. Fellows are expected to participate unless specifically excused. The Division Chief oversees this meeting at which the group reviews: business planning and practice management, billing and coding, personnel management, Quality Improvement (QI), education, fellowship education and program development, and other agenda items. Fellows are asked to participate in presentation of patients for QA review at a formal QA meeting held quarterly and to present their work on QI projects (part of their portfolio). Fellows are also exposed to division or program development including outreach development, program organization and maintenance, and development of necessary collaborations within the institution (such as with other sub-specialty groups or administration) and beyond the institution (e.g. participation in national cooperative care groups, multi-center research collaborative). Exposure to administrative aspects of delivery of care appropriate for the discipline afford new opportunities for fellows to actively participate in creation of new learning endeavors, quality assessments, and acquisition of administrative and leadership skills.

IV. Clinical Responsibilities

A. Activities and Charting Requirements

Refer to the Common Fellowship Manual.

B. Informed Consent

Informed consent is an integral component of practicing clinical Hematology and Oncology. Consent is required prior to enrollment on clinical trials, transfusion support, procedures, and major changes in therapeutic plans, including End of Life care and transition. The process of Informed Consent is taught in both a didactic fashion and by direct observation. A curriculum for enrollment of patients on clinical trials has been developed (see Section, The Educational Program). Didactics will be given in the context of the first month Orientation Lecture, Professionalism Noon Conferences, inpatient resident didactics, or weekly Fellow's Hematology Oncology Educational Conferences. Fellows have the opportunity to observe informed consent conferences with faculty while on the inpatient service and in the outpatient setting. During the first year fellows should begin the process of leading such conferences in the presence of the attending, after a period of observation. During the course of the training program, fellows will assume a graduated responsibility for conducting the Informed Consent process in a mentored environment. Fellows should expect to receive valuable constructive feedback from members of the team, including the attending physicians, social workers, nurses, and interpretive staff. The clinical psychologists are available to the fellows for structured observation and critique for fellows leading consent conferences. The topic of such discussions is also part of the clinical psychology didactics.

All physicians (residents, fellows and attendings) are required to document Informed Consent Conferences in the patient's medical record, EPIC. HIPAA consents are also required for every patient registered on a research protocol (clinical or biological).

Documentation consists of:

- Original consent in the Medical Record; signed and dated by:
 - Parent/guardian;
 - Witness;
 - Physician (providing consent/performing procedures/etc.);
 - Interpreter, if applicable.
- Notation in the progress notes (date and time) of consent conference with family, and other individuals present. A short separate EPIC consent note with details of protocol identification, adverse events, options, elements of Informed Consent is also required. Summary of the discussion should be included.
- Appropriate literature given to family (i.e. Transfusion consent requires written information on risks/benefits per Paul-Gann Act to be given to the family; chemotherapy protocol consents which include descriptions of medications, side-effects; therapy roadmaps, etc.).
- Copy of consent to the family.
- Copy of consent in the clinic (brown) chart (department specific) and scan into EPIC.

Transfusion consents are required prior to all transfusions. Consents may be obtained on a yearly basis for hematology/oncology patients and other patients

with chronic transfusion needs (ensure documentation in EPIC). Patients going to the OR must have a signed consent in the chart prior to leaving the acute care unit. Ideally, the physician responsible for the procedure, or an associate, should provide consent. A parent should not be asked to sign a consent form unless they have been given ample opportunity to hear the risks and benefits of the procedure, available options, and have their questions answered. IRB (Institutional Review Board) approved consent forms for the Children's Oncology Group protocols are located in the Hematology Oncology office and on the Hematology Oncology group Shared drive (K). The CRAs (Clinical Research Associates) will provide assistance with locating appropriate consents for clinical trials.

C. Procedural Competencies

Attaining proficiency in technical procedures specific to the sub-specialty is an important goal of fellowship training. Documentation of procedural competencies during fellowship is required by the ABP and may also be used to support the fellow's application for clinical hospital privileges in the future. A core group of procedures, emphasizing those procedural skills appropriate for the pediatric sub-specialty, have been identified as a requirement for graduation for each fellowship program. An EPA (Entrustable Professional Activity) for the Hematology Oncology fellowships is to attain clinical competency in all the procedures specific to this specialty. Fellows are directly taught to perform procedures by the attending physician staff. This is done in an apprentice based system with direct observation of an experienced practitioner, and subsequent performance of multiple procedures under direct supervision with critical review.

The procedure competency system in use at Children's Hospital & Research Center Oakland includes both an initial supervision and certification of a successful procedure attempt, as well as documentation of all subsequent successful procedures performed. Supervision and documentation of skills must be by the faculty. Fellows place procedure notes in the EMR documenting the indication, consent process, details of the procedure and outcome, and identification of supervising faculty.

Fellows are asked to maintain a complete list of all procedures performed during their fellowship training and submit them semi-annually prior to the CCC reviews. The procedure log will be maintained in the Shared drive (I.) and be placed in the fellow's portfolio, to be reviewed with the Program Director at the time of semi-annual reviews.

Fellows will receive training in the performance of procedures necessary to practice independently as a Pediatric Hematologist Oncologist. They will become proficient in the indications for the procedures, associated risks, and diagnostic interpretation. The technical skills deemed required are:

- Lumbar puncture with instillation of intrathecal chemotherapy
- Bone marrow aspiration and bone marrow biopsy
- Peripheral IV for instillation of chemotherapy

Additionally, fellows may have the opportunity to: perform conscious sedation for procedures, access central venous catheters, access and instill chemotherapy via an Ommaya reservoir, perform a skin biopsy, and give intramuscular chemotherapy. Fellows are encouraged to participate in bone marrow harvests, stem cell collections, and apheresis. Competence in working through a difficult procedure (i.e. dry tap on bone marrow aspirate, bloody lumbar puncture, extravasation of chemotherapy) is related to frequency of procedure performance. Fellows should expect to perform numerous procedures and be mentored prior to being assessed as procedurally competent.

First year fellows will be assigned to procedure clinics with a designated faculty member during the first month Orientation. During this time, fellows will be supervised and signed off on competency after successfully performing 10 lumbar punctures (LP) with instillation of chemotherapy and 4 bone marrow aspirates/biopsies (BMA/Bx), including at least 2 bone marrow harvests. Additionally, the faculty should go through potential pitfalls and how to work through unexpected problems in the course of procedures. Attainment of procedural competence is a requirement and is documented in the semi-annual and annual evaluations, with final approval from the Clinical Competency Committee. First year fellows are asked to perform a minimum of **30 LPs and 10 bone marrow aspirates** and biopsies. Senior fellows are asked to perform a minimum of 10 LPs and 5 BMA/Bx in each of the subsequent two years of training. Fellows will have ample opportunity to fine tune their skills throughout the fellowship training.

D. Primary Patient and Procedure Logs

All fellows are required to maintain accurate patient and procedure logs for the duration of the fellowship and asked to submit them semi-annually prior to the CCC reviews. The patient logs should include patient identifiers (Medical Record number, initials) in addition to diagnosis, date the fellow assumed care, and the name of the supervising faculty member. Fellows will have the opportunity to acquire new patients at the time of diagnosis and initial evaluation/management, during consultation, or during routine care in the clinic or hospital stay. Fellows should gain experience in the primary care of patients with both hematologic and oncologic disease at all stages of diagnosis and therapy (including off therapy). A minimum of 15 primary patients is required by the end of the first year of fellowship.

Procedure logs should document patients by common identifiers (Medical Record number, initials) in addition to the type of procedure performed, attainment of Informed Consent, date of service, and name of the supervising attending.

E. Night/Weekend/Holiday Call and Sign-out

Call responsibilities remain the same for all fellows, all three years. Fellows take call from home, however, they may on occasion need to come to the hospital to evaluate patients experiencing complications of their disease or treatment or new patients with a suspected malignancy. Each fellow assumes a maximum of every fourth weekday night and every fourth weekend call averaged over the year, and

takes the first call. An attending is always available for back-up and should be called for any question to ensure good patient care, newly diagnosed patients, critically ill patients warranting admission or transfer to the ICU, and deaths. Fellows are expected to call the attending and come into the hospital to evaluate ICU patients (including transfers) and newly diagnosed oncology patients or to admit BMT patients. Also, any patient, in the judgment of the fellow or attending, that may require a timely assessment should be seen right away and not wait to the next morning. Fellows take sign out from both inpatient teams at the end of the workday for any patients who are unstable or likely to need attention overnight, and then sign the patients out in the morning.

Fellows are asked to keep a log of their calls, patient names, diagnoses, reason for call, and recommendations. During the weekday, patients are signed out in the morning in written form via EPIC, the hospital's electronic medical record (EMR) system, to the entire clinical department so as to allow quick follow-up by the nurses, staff, or attending staff. Fellows must also document time spent actually taking the calls and time spent in the hospital. Any unusual circumstances that may warrant immediate attention, such as admissions, new patients, and critically ill patients, should also be communicated verbally to the responsible fellow, nurse(s), and/or attending(s).

Weekend sign-out rounds occur in person on Monday mornings (Tuesday morning following Monday holidays) from 8:00 to 9:00am. The on-call fellow (and attending) gives a verbal presentation of all new admissions in addition to the current diagnostic and management issues on all hospitalized patients, including consultations. The calls and discharges are signed out in a written form utilizing the hospital's EMR system (EPIC) as per the weekday protocol. All fellows and attending physicians are *expected* to attend. This also provides an opportunity for discussion of patient management and updates on the status of primary patients. Following is a template designed to provide guidance for Monday morning sign-out rounds:

Sign-out template for fellows:

Red/Aqua patients

1. Brief line stating age, gender, diagnosis, current treatment plan, and clinical status.
2. Brief overview of why the patient was admitted and planned disposition
3. Significant weekend events and brief overview of major issues (i.e., fungal disease, typhlitis, poor nutrition, prolonged fever/neutropenia)
4. Review of the patients by systems:
 - a. FEN/GI: TPN/fluids, electrolyte issues, sludging/VOD issues
 - b. CV/Pulm: Cardiopulmonary status, antihypertensive
 - c. ID: Current antibiotics, antifungals, antivirals, why they are on them and planned length of therapies, recent significant culture or biopsy results
 - d. Hem/Onc: Counts, transfusion thresholds and need for transfusions, coagulation issues, immunosuppressant therapies and current levels, current chemotherapy and plan

- e. Neuro: Pain issues, PCA/pain medication status, anti-emetics
- f. Psych: Other relevant family/social issues
- g. Disposition

New or ongoing active consults

1. Brief description about patient and reason for admission (should know pertinent lab and exam findings that lead to admission)
2. Describe initial management, diagnosis, presumed plan and disposition (with an appropriate justification, i.e., added vancomycin because, gave transfusion because...)
3. For more complicated admissions review patient by systems

The goal of sign-out should be able to cover each service in 30 minutes. That means you must know the patients and your sign-out well enough to average 1-2 minutes per patient.

F. Teaching Conferences

Formal teaching conferences play an important role in the sub-specialty training programs. A core didactic series has been structured for the fellows (Fellows Hematology Oncology Educational Conference), in addition to other educational experiences including Journal Club, Tumor Board, Hematology Case Conference, morphology review sessions, periodic Morbidity & Mortality conferences (often in association with the PICU), and Quality Assurance (QA) reviews conducted quarterly in Departmental meetings. Fellows are expected to prepare and **give educational didactics a minimum of once per month** throughout the fellowship (includes the Fellow's Hematology Oncology Educational Conference, Journal Club, and Case Conference). Fellow attendance is required for departmental educational programs and those that pertain to the fellowship training program. Fellows are asked to make a concerted effort to attend the majority (80%) of the required conferences. CME credit is available for the Fellows Hematology Oncology Educational Conference and the Journal Club. It is imperative that the fellows ensure compliance with the regulations including disclosure of conflicts of interest, stated objectives, advance submission of the topics and speakers, and submission of evaluations. In general, the topics and goals/objectives must be submitted 72 hours in advance (minimum) and guest speakers require a 2-month notice, with submission of a curriculum vitae, conflict of interest statement, title of the didactic, and goals and objectives.

The following are the major teaching conferences at Children's Hospital & Research Center Oakland:

- **Grand Rounds** are held every Tuesday from 8:00 to 9:00 a.m. in the auditorium. Attendance by all fellows is encouraged.
- **Case Conference** is held each Thursday from 8:00 to 9:00 a.m. (except every third Thursday when PL-2/3's switch rotations). Attendance by all fellows is encouraged. Case Conference is an interactive session led by senior residents, Chief Residents or CHRCO fellows and attendings on clinical cases

with emphasis on differential diagnosis, appropriate management, and clinical problem solving.

- **Noon Conference** is a formal teaching session held every weekday from 12:00 to 1:00 p.m. in the Main Hospital Auditorium. Noon Conference teaching sessions are presented by CHRCO subspecialty attendings, fellows, or visiting lecturers. Each fellow will be assigned to give at least one noon conference each year.
- In addition to the core noon conference schedule, approximately 10 conferences a year will focus on issues relevant to all post-graduate pediatric trainees such as professionalism, ethics, legal issues, wellness, and sleep hygiene. Fellows will be expected to attend this series of **Professionalism** lectures. The Program Director will post a list of these special conferences and send e-mail reminders to the fellows and staff. The schedule is also available on the CHONet.

Following are the Hematology Oncology department specific teaching and clinical care conferences: Attendance sheets are kept for all required conferences.

- **Children's Hospital Oakland Research Institute (CHORI)** hosts several conferences a month, typically on Tuesday afternoons at 4 p.m., given by the CHORI staff or visiting scientists. Attendance by the research fellows is **required**.
- **Monday morning sign-in** rounds provide a review and discussion of the prior weekend (and week) patients on the inpatient service in addition to consultations and advice calls. The fellow and attending on-call the prior weekend are responsible for the presentation of patients. The conference is held every Monday from 8:00 to 9:00 a.m. All fellows are **required** to attend.
- **Tumor Board** is held weekly, on Tuesday from 12:15 to 1:30 p.m. All new solid tumor oncology patients in addition to those with new problems or recurrences are presented and discussed in this venue. Fellows are asked assume responsibility for their primary patients and present them to the Tumor Board as needed. The conference provides a forum amongst many disciplines involved in the complex care of these patients and includes: surgery, pathology, hematology/oncology, bone marrow transplant, neurosurgery, radiation oncology, data management, and nursing. Attendance by clinical fellows is **required**. Attendance by research fellows is encouraged.
- **Journal Club** is held monthly on the 2nd Friday morning from 8:00 to 9:00 a.m. The Journal Club is organized by the senior fellows. Topics for discussion and articles are chosen by the fellow and approved by the attending responsible for the Journal Club (Dr. Robert Raphael, or other faculty with particular expertise in the topic to be presented) and distributed ahead of time. A formal method for Journal Club presentation has been

created and will be taught at the beginning of each year in a didactic session. This Didactic is available on the Shared drive (K.). Fellows are expected to demonstrate the ability to use technology to access scientific evidence, interpret what is uncovered, and apply to the care of patients. Evaluation of these skills is documented via the written evaluation process. Attendance at the Journal Club is **required** for all fellows.

- **Hematology Case Conference** is held monthly on the 4th Friday morning from 8:00 to 9:00. This conference consists of hematology case presentations and literature review, in a similar format to the Journal Club. Fellows and faculty present recent cases and discuss the evidence in the medical literature to guide in medical decision making. This conference is coordinated by the senior fellows. This is a **required** conference for fellow attendance.
- **Clinical Team Meetings** are held for each sub-specialty (Oncology, Sickle Cell, Thalassemia, Bone Marrow Transplant, Hemophilia, General Hematology) and fellows are expected to attend while on the designated outpatient service or the inpatient clinical service to present their patients.
- **Scholarship Oversight Committee (SOC)** sessions are held quarterly. These sessions occur on the second or third Monday evening from 5:00 to 7:00 p.m. The SOC in June is reserved for graduating fellows and will typically be held on the first Monday of the month. All sub-specialty fellows from Children's Hospital & Research Center Oakland attend these sessions. Each fellow is given the opportunity to present their research to the group every 6 to 9 months. Clinician scientists and laboratory based scientists critically review the concepts and quality of scholarly activity and provide feedback to the fellows, mentors, and Program Directors. Presentation and review at this committee is a requirement by the ABP to document participation and completion of a scholarly work product. See Research Competence/Scholarship Oversight Committee Section V. for full details and requirements. Hematology Oncology fellows are **required** to attend the sessions, even if not presenting their research.
- **Fellows Hematology Oncology Educational Conference** is held every Wednesday morning from 8:00 to 9:00 a.m. The senior fellows assume responsibility for creating the didactic schedule. This is a structured educational program in the basic sciences and pathophysiology of disease and serves as a comprehensive board preparation course. Topics for the conferences are listed in the Clinical Core Curriculum, Section IV. H. The course should extend over a 3-year period of time to cover all these topics. Fellows should prepare and read in advance of each didactic so as to maximize the educational experience. These didactics are given primarily by fellows, but also by faculty and visiting/invited professors. Additionally, some of the sessions will address topics relevant to research (clinical and laboratory research methodology and study design, grant preparation, statistics, conduct of ethical research, critical review of literature, manuscript preparation), and senior fellows will be asked to present their research yearly at this conference. Fellow attendance is **required**.

G. The Educational Program

1. ACGME Clinical Core Competencies

Subspecialty programs must require that its fellows obtain competence in the six areas listed below to the level expected of a new practitioner:

- a. ***Patient care*** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
- b. ***Medical knowledge*** about established and evolving biomedical, clinical, and cognate (e.g., epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.
- c. ***Practice-based learning and improvement*** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
- d. ***Interpersonal and communication skills*** that result in effective information exchange and collaboration with patients, their families, and other health professionals.
- e. ***Professionalism***, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse population.
- f. ***Systems-based practice***, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

2. Scholarly activities

Both faculty and fellows must participate actively in scholarly activity. Adequate resources for such activity must be available, e.g., sufficient laboratory space, equipment, computer services for statistical analysis, and statistical consultation services. Scholarship is defined as one of the following:

- The scholarship of discovery, as evidenced by peer-reviewed funding or publication of original research in peer-reviewed journals.
- The scholarship of dissemination, as evidenced by review articles or chapters in textbooks.
- The scholarship of application, as evidenced by the publication or presentation at local, regional, or national professional and scientific society meetings, for example, case reports or clinical series.
- Active participation of the teaching staff in clinical discussions, rounds, Journal Club, Hematology Case Conference, Hematology/Oncology Educational (Fellows) Conference, and research conferences in a manner that promotes a spirit of inquiry and scholarship. Offering of guidance and technical support (e.g., research design, statistical analysis), for fellows involved in research; and, provision of support for fellow participation as appropriate in scholarly activities.

3. Professionalism

The ABP and the ACGME require that programs teach and evaluate professionalism of all pediatric residents and fellows. Professional behavior comprises those attributes and actions that serve to maintain patient interests above physician self-interest. It involves the relationships between physicians and their patients, families, colleagues, and professional organizations. It has implications in the conduct of clinical or translational research and in interactions with pharmaceutical industries. Components of professionalism integral in the lives of all physicians include:

- Honesty/integrity
- Reliability/responsibility
- Respect for others
- Compassion/empathy
- Self-improvement
- Self-awareness/knowledge of limits
- Communication/collaboration
- Altruism/advocacy

In addition to these general guidelines for the teaching and evaluation of professionalism, there are unique components in the field of Pediatric Hematology and Oncology. As physicians continually faced with life threatening and grievous medical illnesses, we are in unique clinical situations. We must be able to speak with patients and their families in times of grief and loss, always maintaining professional composure, compassion, honesty, and always bearing in mind the emotional, educational, social, and cultural status and well-being of our patients. Learning to discuss difficult information with patients and families is a critical component in the education of oncologists. Structured didactics and mentorship are instrumental in this teaching process. Additionally, caregiver health is critical to recognize during the initial training period and appropriate recognition and assistance provided on a regular basis. There is a high burn-out rate in oncology and learning to face issues early on in training, establish support networks, and improve communication are recognized effective means of prevention for burn-out.

A professionalism didactic series has been created by the fellowship sub-committee of the Graduate Medical Education committee to address the above topics. The lectures will be given during the resident noon conferences on a monthly basis (10 lectures per year). All fellows are **required** to attend.

4. Fellows College at UCSF

CHRCO pediatric sub-specialty fellows have been invited to participate in the Fellows College at UCSF. This program offers quarterly activities to assist fellows in the continuing development of teaching, education and leadership. Fellows are divided by year of training and attend specific seminars providing instruction in clinical teaching methods, assessment of educational tools, and new strategies for effective teaching. Professionalism topics common to all sub-specialties are also presented in this forum, in addition to development of skills in

assessment, portfolio building, and career development. The college will also offer opportunities to attain and enhance skills in the conduct of clinical or basic science research, in addition to networking with other fellows conducting research. All fellows are **requested** to attend all sessions relevant to current training at CHRCO, and will be relieved of their clinical or research duties for one day on a quarterly basis. The program directors will inform fellows of the Fellows College dates and place them on the e-mail list for direct contact to register for these programs.

5. Clinical Trial Consent Curriculum

Purpose: Pediatric hematology/oncology fellows must learn and demonstrate competency in the Entrustable Professional Activity (EPA) of enrolling and treating patients on clinical/translational research trials

Participants: First, second and third year pediatric hematology/oncology fellows

Objectives: By the end of the first year of training, fellows will:

- Choose an appropriate front-line trial for patients with newly diagnosed ALL
- Independently obtain proper informed consent for participation in ALL clinical trials
- Work with clinical research associates (CRAs) to review and verify eligibility requirements for enrollment on ALL clinical trials

Curriculum:

- During orientation first year fellows will attend lectures introducing the Children's Oncology Group (COG) and its clinical trials, the elements of informed consent and breaking bad news.
- All fellows will become COG members and have access to protocols.
- Additional instruction pertinent to the conduct of clinical research will be included in a rotating series of Professionalism lectures during Noon Conference, and during "Fellows' College" sessions and the Training Introduction to Clinical Research (TICR) (if taken) at UCSF. The TICR course teaches conduct of research involving human subjects. This course is optional and fellows may enroll, dependent on the nature of the research to be conducted.
- During orientation first year fellows will complete the online Collaborative Institutional Training Initiative (CITI) module for human subjects research.
- During orientation second/third year fellows will conduct a mock consent conference for an ALL clinical trial using role play, observed and evaluated by peers, first year fellows and participating faculty.
- During clinical rotations first year fellows will observe faculty conducting at least one consent conference for participation in an oncology clinical trial.
- During clinical rotations first year fellows will independently obtain proper informed consent from a newly diagnosed patient for participation in a clinical trial for ALL.
- During clinical rotations first year fellows will review and verify eligibility requirements for patient enrollment on clinical trials for ALL, in conjunction with faculty and CRA staff.

- Performance in the conduct of consent conferences will be reviewed by faculty using a standard evaluation form, mapped to core competency milestones.
- Fellows will participate in self-reflection and constructive criticism with supervising faculty following consent conferences.

H. Clinical Core Curriculum

In designing the clinical objectives for training, the program adheres to the criteria of the American Board of Pediatrics (ABP) for board certification and the American Council of Graduate Medical Education (ACGME) for training in pediatric subspecialties. Additionally, core curriculum components of training that as clinicians we believe are essential to the clinical practice of Pediatric Hematology Oncology have been added. Components of the training include: clinical care (direct and consultative), a didactic core curriculum in related basic sciences, and continuing responsibility for the care of patients with malignant disease and chronic hematologic diseases. These topics provide a basis for learning and didactics in the Fellow's Hematology Oncology Educational Conference. Trainees are expected to become facile at the recognition, diagnostic evaluation, and management of the following disorders:

Hematology

Newborn: developmental erythropoiesis and hemostasis; unique disorders such as neonatal alloimmune thrombocytopenia, autoimmune thrombocytopenia, fetomaternal hemorrhage, alloimmune hemolytic anemia, vitamin K deficiency, anemia of prematurity

Structural and quantitative disorders of hemoglobin synthesis:
hemoglobinopathies, thalassemias

Red cell diseases: membrane defects, enzymopathies, acquired

Anemias: nutritional (iron deficiency, megaloblastic), autoimmune hemolytic, blood loss, chronic disease and secondary anemia

White cells: normal myelopoiesis; alterations in primary disease states or systemic disease; neutropenia, inherited and acquired; defects of neutrophil function

Coagulation: physiology of coagulation, fibrinolysis and the vessel wall; factor deficiencies and inhibitors; hemophilia; von Willebrand disease; inherited and acquired coagulopathies

Hemostasis: platelets, thrombocytopenia – inherited and acquired, ITP, DIC, sepsis; platelet dysfunction, inherited and acquired

Hypercoagulable thrombotic states: pulmonary embolus, deep venous thrombosis, catheter associated thrombosis, stroke; congenital and acquired thrombotic disorders

Immunodeficiency states: acquired and congenital

Bone marrow failure syndromes: aplastic anemia, Fanconi's anemia, Diamond-Blackfan anemia, transient erythrocytopenia of childhood

Transfusion medicine: collection and storage and use of products, typing and cross matching for transfusion, indications and complications of transfusion; iron overload and chelation therapy

Oncology

Knowledge of the epidemiology and etiology of childhood cancer, predisposing factors, genetics, clinical presentation, diagnosis, and staging/classification of common childhood malignancies, and application of multimodal therapy for the following conditions:

Leukemias: acute and chronic; lymphoid and myeloid

Lymphomas: Non-Hodgkin lymphoma, Hodgkin lymphoma

Brain tumors: medulloblastoma, astrocytoma, ependymoma, glioma, PNET

Solid tumors: neuroblastoma; renal tumors; rhabdomyosarcoma and soft tissue sarcomas; gonadal and germ cell tumors; liver tumors; rare tumors

Bone tumors: osteosarcoma and Ewing's sarcoma

Histiocytic disorders: Langerhans cell histiocytosis, hemophagocytic syndromes

Treatment of relapsed or refractory malignancies

Chemotherapy: knowledge of the principles of chemotherapy including combination chemotherapy, pharmacology and pharmacokinetics, drug resistance, organ damage

Adjuvant therapy: applying principles of therapy to specific disease states to include biologic response modifiers, immunotherapy, chemotherapy, radiation therapy, and surgery

Supportive care: nutrition, anti-emetics, transfusion support, oral hygiene, central venous access, pain control; schooling, stress

Management of infections in immune compromised hosts: prophylaxis and treatment of viral, bacterial and fungal infections

Late effects in cancer survivors: radiation and chemotherapy related, cognitive and physical

Understanding principles and complications of radiation and surgical therapy

Applying appropriate diagnostic studies in the diagnosis, staging and monitoring of diseases, including appropriate imaging studies, procedures, biochemical markers, and immunologic studies

Palliative care: including support of the patient, family, and staff (coordination of care in the hospital, home, or end-of-life facility)

Hematopoietic stem cell transplantation

Knowledge of allogeneic, autologous, and syngeneic hematopoietic cell (marrow, peripheral blood stem cell, umbilical cord blood) transplants including biologic principles, indications, donor selection and evaluation, tissue typing, preparative therapy, and procurement and processing.

Common problems: graft rejection, graft versus host disease (acute and chronic), veno-occlusive disease, infectious complications (diagnosis and management), interstitial pneumonitis; early and late sequelae including effects of conditioning and radiation; post-transplant lymphoproliferative disease.

I. Curriculum for the Clinical (First) Year of Fellowship

The first year of the Hematology Oncology Fellowship is designed to provide a broad clinical experience. Integrated into this year will be orientation to the hospital and programs, and development of a research hypothesis with

identification of a research mentor. The first year fellows will be required to attend a daily noon lecture during the Outpatient Orientation month given by the clinical staff on basic topics in Hematology, Oncology, and BMT (Orientation Lecture Series). See Clinical Objectives for the Outpatient Orientation Rotation Section IV.W.

Following are the clinical and laboratory rotations for the **first year** clinical fellow:

- Outpatient Orientation Rotation; Daily lecture series 4 weeks
- Inpatient Rotations:
 - Aqua team (BMT, high acuity oncology) 12 weeks
 - Red team (hematology, oncology, inpatient hematology consultation) 12 weeks
- Radiation Oncology Rotation, Alta Bates/Herrick 2 weeks
- Pathology/Hematology Laboratory 1 week
- Blood Banking Rotation (Vitalant) 1 week
- Hematology/BMT/Neuro-Oncology clinic Rotation 5 weeks
- Hematopathology (UCSF) 1 week
- Palliative Care/Pain Rotations (CHRCO/UCSF) 2/2 weeks
- Formulation of Research hypothesis/QI project 5 weeks
- Continuity clinic (minimum 36 per year) one half day/week
- Call: maximum every 4th night and 4th weekend; 1-2 holidays per year
- Vacation 4 weeks

First year fellows will attend continuity clinic one half day per week. They will each attend a Tuesday General Hematology clinic each month and the remainder of the weekly clinics will be in their general Oncology continuity clinic.

J. Clinical Curriculum for the Research Years of Fellowship

Following are the clinical and laboratory responsibilities for the **second and third year** fellows:

- **Continuity clinic:**
 - Second year: one half day per week (minimum 36 per year)
 - Third year: one half day per week (minimum 36 per week)
- **General Hematology continuity clinic:**
 - All fellows will attend a monthly General Hematology Continuity clinic *in lieu of* the weekly Oncology Continuity Clinic that week.
- **General Oncology clinic:**
 - All fellows will attend Oncology clinic (assigned day of week) 3-4 days per month. They are not expected to attend this clinic on the week of their General Hematology continuity clinic. A rotating oncology clinic schedule may be created to accommodate research schedules and clinical needs.
- **Call:** Night and weekend call remains every 4th (maximum) to 6th for the duration of the fellowship. There are 1-2 call holidays per year.
- **Inpatient Hematology consultation:** Senior fellows participate in the inpatient consultation service (when the first year fellow is not on the Red

team or on the consult service). Fellows work directly with the Red team attending in providing new consultation during these weeks and following patients while hospitalized. The fellows will then sign out the consultations to the fellow covering the following week. Second year fellows will each cover 6 weeks on the inpatient consult service and third year fellows will each cover 2 weeks.

- **Transitional clinics:** Fellows will periodically participate in the sub-specialty clinics that provide comprehensive transitional care to patients. These include: Long term Follow-Up (LTFU) for survivors of childhood cancer, comprehensive Neuro-Oncology clinic, Sickle Cell, Pediatric and Adult, and Thalassemia clinics and hematopoietic stem cell transplantation.
- **Oncology Survivorship/Long Term Follow-Up (LTFU) clinic:** Third year fellows will alternately participate in this monthly cancer survivorship clinic for 6 months (a total of 6 clinics each per year), generally on the third Tuesday afternoon of each month. Fellows are expected to participate in chart review and preparation for each clinic in advance.
- **Specialty outpatient rotations:** Six week blocks have been designed to provide opportunity for fellows to gain a deeper exposure to a multi-disciplinary approach to management in Sickle Cell disease, Thalassemia, Hemophilia, Neuro-Oncology, and Bone Marrow Transplantation. Senior fellows will be assigned two of these blocks in each of the second and third year in lieu of continuity clinic for that time period. Fellows may create a clinical rotation in an area not previously created, with permission from the Program Director and a designated mentor.
- **Inpatient service:** Third year fellows are asked to spend one month on the inpatient services at the end of the academic year. Senior fellows assume the role of a “junior attending” with full responsibility for the care of the Hematology, Oncology, and Bone Marrow Transplant patients, in addition to inpatient consultation. Third year fellows are assigned two 2-week blocks on the Red and Aqua teams. Attending back-up and supervision is provided. This month reinforces the clinical experience and development of skills necessary to transition to independence in clinical management of complex Hematology, Oncology, and BMT patients.

K. Continuity Clinic

The continuity clinic experience provides an excellent opportunity for fellows to be completely involved in all aspects of clinical care for their patients, including diagnostic evaluation, assessment, development of care plans, and management of acute and chronic complications related to their disease or effects of treatment. Additionally, fellows have the opportunity to observe the natural course of an illness over a long time period. First year fellows acquire new oncology and hematology patients, primarily during their rotations on the inpatient services, and assume the role as the primary doctor, with the supervision of the primary attending physician. Senior fellows may “pick up” new patients while on call or in the clinics as well. New primary patients do not have to be newly diagnosed patients and fellows are encouraged to pick up patients at later stages of treatment or off therapy so as to benefit from the knowledge of monitoring during this period of time. All fellows attend their respective continuity clinic for one half day per week during all three years. The fellow will maintain a continuity

experience with their patients and the clinic attending, who serves as a clinical mentor. Fellows are asked to maintain a log of primary patients, with a goal of a minimum of fifteen patients with malignant or chronic hematologic disease, and to document details of their participation or involvement with each patient (consent conferences, referrals, Tumor Board presentations, coordination of care, etc.). This primary patient log is requested for review semi-annually.

Refer to Level Specific Goals for Competency Section IV.M. for details of the expectations of fellows in the care of their patients on an outpatient basis. Many of these patients will also transition between the inpatient and outpatient services and afford many opportunities for fellows for direct patient interaction, presentation at Tumor Board, patient care conferences, etc.

Fellows are encouraged to either schedule their primary patients into their continuity clinics or arrange to see them in an alternate clinic (for example, when the patient would be due to receive therapy or as per the sub-specialty care team). Fellows may also arrange to see their primary patients when admitted to the inpatient service, even if not assigned to that service at the time (analogous to the role of the primary attending). Fellows are expected to be involved in all aspects of primary management for their patients such as: periodic assessments, meetings with the patient and family, consent conferences, evaluation and management of new problems, management of relapse or complications, referrals letters and communication with other specialists and presentation at the Tumor Board.

Fellows are assigned a specific day of the week for their Oncology continuity clinic for all three years, though there is an option to change day of the week at the beginning of each academic year to accommodate research and lab meetings. The clinic hours are generally 9am to 1pm. Fellows are expected to be present to see all assigned patients and be available to assist with emergencies and drop-in and sick patients. In the case of absence, including vacation or illness, fellows should notify both the Program Director and the clinic attending. The clinic schedule will be updated on the Shared K drive and posted in the clinic. Any changes are to be reported immediately to the Program Director and administrative assistant.

Each fellow will rotate through the General Hematology continuity clinic on an approximate every 4-week basis during all three years, and establish continuity with patients in this setting as well. This General Hematology clinic will be in lieu of the weekly Oncology clinic. This schedule may be altered dependent on number of fellows and access to clinics.

In addition to the weekly half-day continuity clinic experience throughout the 3-year fellowship, fellows have the opportunity to participate in sub-specialty multi-disciplinary clinics, such as Thalassemia, Sickle Cell Disease, Neuro-Oncology, Hemophilia, and Bone Marrow Transplant. As per many academic institutions, patients are seen in multidisciplinary clinics, affording comprehensive care for these diseases and their resultant complications. This differs from the type of experience in the traditional primary care continuity clinic. The first year fellows have 5 weekly rotations in Hematology/BMT clinics

and will be able to participate in these specialty clinics (as well as during the Orientation month). Fellows also have the opportunity to participate in the Hematology laboratories (e.g. Ektacytometry, Hemoglobin Reference Lab, HLA, coagulation) during the Pathology, Hematopathology and Blood Banking rotations in addition to the Hematology/BMT clinics rotation.

Fellows may schedule their own continuity clinic patients and continue to acquire new patients (primarily while on-call), in addition to attending these sub-specialty clinics, as long as they attend a minimum of 36 clinics in the year.

During the first year, while on the Aqua inpatient service, fellows attend the Bone Marrow Transplant clinic one to two days a week, time permitting.

L. Competency Based Learning Goals and Objectives

The overall goals and objectives for Pediatric Hematology Oncology fellows are to gain extensive experience in the diagnosis and on-going care of children with cancer and hematologic disorders, and to become researchers and teachers in the field. First year fellows spend the majority of their time providing clinical care on inpatient and selected outpatient rotations. Second and third year fellows continue to provide care on the inpatient services on call nights, weekends, and holidays, and participate in their weekly Continuity Clinics, and devote the majority of their time devoted to research activities.

The goals listed below, established for the *first* year Pediatric Hematology Oncology fellows, are primarily aimed at gaining experience in the daily management and continuity of care of children with known as well as presumed hematologic or oncologist disorders. In general, the expectations of the first year fellow involve demonstration of medical knowledge, comprehension of pathophysiology of disease, development of differential diagnoses, formulation of management plans, dissemination of plans by presentation at Tumor Board and other clinical conferences, and management of hematology and oncology patients in inpatient, outpatient, and consultative settings.

Senior fellows are expected to develop increased knowledge and independence with respect to the clinical care goals for the first year fellows. Additionally, the *second and third* year fellows are expected to develop a research project, attain appropriate IRB approval and animal research approval as necessary, apply for grant funding, carry out necessary experiments and/or clinical studies, and prepare the results for periodic presentation (to the SOC and local/regional/national meetings) and publication.

All fellows are also expected to engage in regular teaching activities for Pediatric residents and medical students.

- a) **Goal: Provide patient care** that is compassionate, appropriate, and effective for the treatment for the treatment of health programs and the promotion of health.
 - i. Demonstrate *thorough presentations* of patients seen as new patient consults, inpatient rounds, outpatient clinics, and at

- clinical conferences, and *documentation* in the medical record the ability to report a detailed and appropriate history and physical examination, pertinent diagnostic studies, and develop rationale for the diagnostic and therapeutic decision making to optimize the care of children with hematologic or oncologic disease. Fellows must demonstrate the ability to develop management plans and provide appropriate counsel to the patients and families.
- ii. Discriminate severity or changes in clinical status of patients which need to be reported to the attending immediately from those that can be presented on rounds. Discriminate between patients who may be appropriately treated on the inpatient unit and those who require escalation of care to the intensive care unit.
 - iii. Develop and provide rationale for the management plans of children with acute life threatening or major organ threatening disease or complications unique to hematology/oncology such as:
 1. Sickle cell disease and acute chest syndrome
 2. Tumor lysis syndrome
 3. Acute hemorrhage
 4. Sepsis in the hematology/oncology/BMT patient
 5. Acute neurological compromise
 - iv. Recognize indications for and the risks associated with the following therapies and develop appropriate management plans:
 1. Central venous lines
 2. Chemotherapy
 3. Transfusion therapy
 4. Apheresis
 5. Radiation therapy
 6. Surgical therapy/intervention
 7. Anti-coagulation therapy
 8. Chelation therapy
 9. Nutritional support
 10. Pain Management
 - v. When requesting consultation, demonstrate the ability to formulate the appropriate questions and rationale justified by pertinent points of the history, physical examination, and laboratory data.
 - vi. When requested to perform a consultation, demonstrate the ability to obtain the appropriate information to ascertain the urgency, perform a complete chart review and patient history, physical examination, review of pertinent laboratory data, and synthesize a cohesive summary, differential, and management plan. Demonstrate professionalism in the timeliness of the consult and personal demeanor in communicating with other health care staff and patients/families. Also include teaching residents and staff with verbal and written communication and review of the literature with appropriate materials referenced or provided.

- vii. Recognize the indications for, the common complications of, and achieve competence in performance of the following procedures:
 1. Bone marrow aspirate and biopsy;
 2. Lumbar puncture with instillation of chemotherapy;
 3. Administration of intravenous chemotherapy by peripheral venous access.

- b) **Goal: Acquire medical Knowledge** of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences as well as the application of this knowledge to patient care.
 - i. Develop a prioritized differential diagnosis for children with cancer or hematologic diseases hospitalized for acute illnesses, seen in the outpatient or continuity clinics, or during consultation.
 - ii. Fellows must demonstrate use of information technology to optimize patient care and education. Fellows should also become proficient at determining which laboratory tests are indicated and the appropriate interpretation. Supervision will be provided and it is expected that fellows will assume progressive responsibility with time and experience.
 - iii. Demonstrate knowledge of the pathophysiology of disease, review of recent advances in clinical medicine and biomedical research, dealing with complications and death, and the scientific, ethical, and legal implications of Informed Consent and confidentiality. Fellows are expected to become familiar with the hematologic, oncologic, and transplant diseases listed in the Clinical Core Curriculum, Section IV.K. These diseases will frequently be encountered in the clinical setting and form the basis of topics for the didactic program led by the fellows at the Fellows Educational Conference.
 - iv. Take the sub-specialty In-Training Examination (SITE) yearly and review the results by sub-section for feedback on general academic knowledge base and areas needed for self-improvement.
 - v. Be an active participant in teaching and learning at the Fellows Conference, Hematology Case Conference, Journal Club, Tumor Board, Monday morning sign-out rounds, and individual team discipline clinical rounds. Demonstrate a commitment to primary care responsibility with acquisition of a group of primary patients of varied hematologic/oncologic diagnoses, and continued involvement in the clinical management of these patients, to assess complications of disease or therapies, and provide appropriate interventional strategies. Remain the primary physician contact for the family and the remainder of the health care team, including the referring physician. Ensure appropriate and frequent communication, verbal and written, with consultants and primary care/referring health care providers.

- c) **Goal: Participate in Practice Based Learning and Improvement** that involves the investigation and evaluation of the knowledge, skills, and attitudes needed for continuous self-assessment, using scientific principles, methods, and evidence to investigate, evaluate, and improve one's patient care practice.
- i. Present new cases and new problems with primary patients at Tumor Board and clinical conferences with detailed literature review to support the chosen management plan.
 - ii. Critique one's practice experience to recognize strengths, deficiencies, and limits in knowledge and expertise; then identify and utilize the appropriate resources for remedying those identified deficiencies. Fellows will be asked to complete an assessment of their own clinical and research skills in addition to evaluation of their peers.
 - iii. Meet individually with the responsible attending physicians periodically during the clinical rotations to obtain feedback on performance. Meet with the continuity clinic attending/mentor at least monthly for this critique as well. Incorporate this feedback and personal career goals into development of a professional career development plan.
 - iv. Actively seek out and listen to constructive feedback from other members of the health care team as well as patients and families, and incorporate this feedback as appropriate into an individualized professional development plan.
 - v. Actively participate in the education of patients, families, Pediatric residents, medical students, and other health professionals by leading clinical rounds, providing daily direct updates on patient status and plan of care, and providing teaching points and giving scheduled didactics.
 - vi. Fellows will have the opportunity to teach and participate in continuing education activities as well as assume departmental administrative responsibilities, such as QA and QI. Fellows will learn methods of adult learning for self-education and teaching purposes, primarily by didactic at the UCSF Fellow's College and by active participation in Fellow's Hematology Oncology Educational Conference, Hematology Case Conference, Journal Club, Resident Noon Conference and inpatient Resident teaching rounds.
- d) **Goal: Develop Interpersonal and Communication Skills** that result in effective information exchange and collaboration with patients, families, staff, and professional associates.
- i. Communicate effectively in a developmentally appropriate manner with patients, and their families, to create and sustain a professional and therapeutic relationship across a broad range of socioeconomic and cultural backgrounds.
 - ii. Lead discussions with the family of a child (and/or patient as age permits) with a newly diagnosed malignancy or hematologic disease regarding the diagnosis, investigative and treatment plans and implications on health management.

- iii. Obtain Informed Consent for fellow performed procedures, and both research-based protocol therapy and non-research based therapies for malignant and non-malignant disorders.
 - iv. Effectively communicate changes in patient status with all members of the health care team.
 - v. Maintain comprehensive, timely and legible medical records on inpatient and primary continuity patients. Maintain the clinic shadow (brown) charts with appropriate roadmaps and protocols for Oncology patients.
 - vi. Communicate with attending physician (on-service attending) on a daily basis and with referral physicians on a periodic basis (new patients, discharge, change in status or plans).
 - vii. Provide timely written letters to referring physicians and consultations. Mentor should provide a structured review of such documentation and give feedback. Such feedback should be documented on the faculty evaluations of fellows.
 - viii. Assume the unique roles of team leader, team member, and consultant, as appropriate. Responsibility in these roles should increase with experience during the fellowship.
- e) **Goal: Demonstrate and Practice Professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.
- i. Consistently maintain respect, compassion, integrity, honesty, and responsiveness to the needs of patients and the health care team in a way that supersedes self-interest.
 - ii. Attend educational programs geared towards Professionalism with respect to bioethics, professional relationships (with patients, family, health professionals), conflict of interest, medical error, etc.
 - iii. Continually demonstrate accountability to all patients and the health care team, including all physicians involved in the care.
 - iv. Demonstrate a commitment to excellence and ongoing professional development by being prepared, on-time, in appropriate attire, polite, contributing to rounds without dominating, and participating/leading teaching conferences.
 - v. Exercise sensitivity to the needs of the patients and the family/guardians by applying cultural awareness, negotiation, compromise, and mutual respect in the care of the patients.
 - vi. Recognize and demonstrate an understanding of the ethical, cultural, religious or spiritual values of import of patients and families during communications and care decisions. Ensure all information is communicated in the patient/family's primary language.
 - vii. Demonstrate a commitment to confidentiality, privacy, and respect for patients and families.
 - viii. Demonstrate empathy towards the child and family in negotiating and designing goals of treatment, including relevant medical, legal, and psychological issues.
 - ix. Demonstrate advocacy for patients and families.

- x. Honestly assess one's contribution to error that are made, accept responsibility for personal mistakes, and implement plans to prevent one's self and others from making the same mistake.

f) **Goal: Practice Systems Based Practice** as manifested by actions that demonstrate an awareness of and responsiveness to the health care system and the ability to call upon resources to provide high quality health care and advocate for patients within the context of the health care system.

- i. Prioritize the various modes of diagnostic testing and select the most appropriate testing modality, with a goal toward preventing unnecessary laboratory or imaging studies.
- ii. Demonstrate the ability to work effectively with other members of the health care team, including, but not limited to, other physicians, nurses, pharmacists, dietitians, interpreters, social workers, child life specialists, and chaplains. This includes effective working relationships during very stressful times for the patient and family such as at initial diagnosis and implementation of new therapy plans or surgical procedures, arranging home care or discharge, and making a pain management plan.
- iii. Acknowledge medical errors in a forthright manner, and report observed medical errors (real or potential) to the appropriate member of the care team, then work with the team to develop a plan for preventing future errors. Participate in the 5 South MQIC (Medical Quality Improvement Committee) to draft policies and procedures and present the findings/outcomes in interdisciplinary meetings and conferences as well as provide in-service teaching to implement new methods.
- iv. Comply with institutional systems that have been developed to prevent errors in the administration of "high-risk" medications such as chemotherapy or other immunosuppressive medications or transfusions.
- v. Avoid use of ambiguous or unacceptable abbreviations in the medical record, prescriptions, and medical orders.
- vi. Participate in the departmental business meetings to gain knowledge and experience with regards to resource allocation, quality improvement, practice management, and current economics of health care.
- vii. Gain skill in working with the EMR (EPIC) for accurate patient documentation, coding and billing.

M. Pediatric Hematology/Oncology Milestones and Level Specific Goals for Competencies

Twenty-Six Pediatric Competencies are evaluated during core curriculum for each fellow. Expected level of achievement by level of training is highlighted below.

NOTE: Unfortunately, the ABP numbering of milestones and GME numbering of milestones are not the same. GME numbers are in **BOLD**; old ABP numbers are not bolded.

For a full listing and description of the 51 Pediatrics Milestones go to <https://www.abp.org/abpwebsite/publicat/milestones.pdf>.

PC1 (PC3) Provides transfer of care that insures seamless transitions.

Shows frequent errors of both omission and commission in the transfer of care.	Shows less frequent errors. Neither anticipates nor attends to the needs of the receiver of information.	Shows minimal errors. Begins to anticipate potential issues for the receiver. Year 1	Adapts transfer of care to increasingly complex situations and ensures open communication. Years 2,3	Provides appropriate transfer of information and communication with patients, families and health care team.
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PC2 (PC6) Makes informed diagnostic and therapeutic decisions that result in optimal clinical judgment

Presents clinical facts without filtering, reorganization, or synthesis.	Focuses on features of clinical presentation but is unable to develop or prioritize a differential diagnosis.	Shows emergence of pattern recognition leading to focused differential diagnosis and management plan. Year 1	Shows well established pattern recognition leading to effective and efficient work up and plan. Years 2, 3
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PC3 (PC7) Develops and carries out management plans

Carries out directed plan from others.	Begins to form plan based on own knowledge but shows lack of prioritization.	Begins to incorporate patient values and draws on some experience when developing plan.	Develops and carries out plans for moderately complex patients. Incorporates patient and family values. Years 1, 2	Develops and carries out plans for complex and rare patients. Incorporates patient and family values while excluding personal biases. Year 3
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PC4 (PC12) Provides appropriate role modeling

Works in isolation. Has no awareness of impact on others. Shows no reflection on actions.	Sometimes teaches by example. Occasionally reflects on events as they occur.	Is conscious of being a role model some of the time. Teaches by example at times. Reflects privately.	Is a more consistent role model. Routinely teaches by example. Frequently reflects on actions. Shares reflections. Years 1, 2	Is a role model and teaches by example. Routinely reflects on actions to teach others. Year 3
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MK1 (MK2/PBLI6) Locates, appraises, and assimilates evidence from scientific studies related to their patient's health problems

Doesn't apply EBM to clinical situations.	Utilizes EBM when asked but is not efficient at searching literature.	Begins to independently seek and apply EBM when needed.	Is self motivated to practice EBM and teaches it to others. Years 1, 2, 3	Is a role model for practicing EBM and teaching it to others.
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SBP1 (SBP 1) Works effectively in various health care delivery settings and systems relevant to their clinical specialty

Is frequently frustrated by system processes but makes no effort to change them due to limited understanding of systems.	Develops workarounds for individual situations. Does not improve systems.	Fixes system problems in one setting but cannot apply to other settings. Years 1, 2, 3	Adapts learning from one system to problems in other systems.	Leads system changes.
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SBP2 (SBP2) Coordinates patient care within the health system relevant to their clinical specialty

Does not communicate care plans or coordinate with the medical team. Informs family of plans but does not involve them in discussion.	Involves family with care plans but communicates poorly with medical team members.	Coordinates care with medical team. Assists and involves families in decision making with few omissions. Years 1, 2, 3	Effectively serves as the medical care coordinator. Participates in shared decision making leading to culturally appropriate care.
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SBP3 (SBP 3) Incorporates considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate

Has difficulty processing cost and risk benefit information.	Uses cost containment analysis only when prompted to do so.	Integrates cost analysis while optimizing risk/benefit for individual patients. Years 1, 2, 3	Understands risk/benefit in context of systems.	Integrates cost analysis into one's practice while minimizing risk and optimizing benefits for whole systems.
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SBP4 (SBP5) Works in interprofessional teams to enhance patient safety and improve patient care quality

Responds only to physician colleagues. Dismisses input from other professionals.	Begins to understand input from other professionals but is unlikely to seek out their opinion.	Is aware of unique contributions of other professionals and seeks out their opinion. Is an excellent team player. Years 1, 2, 3	Is a role model for interdisciplinary work.
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SBP5 (SBP6) Participates in identifying system errors and implementing potential system solutions

Is defensive or blaming. Has no perception of personal responsibility.	Is occasionally open to discussion of both individual and system error correction. Has some awareness of personal responsibility.	Is usually open to discussion of error. Takes an analytical approach, including identification of personal responsibility.	Takes responsibility for both individual and system error correction. Begins to adopt a systemic approach. Years 1, 2	Takes an individual and systems approach to all error analysis. Engages other team members for system correction and improvement. Year 3
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PBLI1 (PBLI 1) Identifies strengths, deficiencies, and limits in one's knowledge and expertise

Has limited self-awareness of knowledge or skills.	Analysis of self performance is limited to completion of tasks.	Seeks elaboration, clarification or expansion on patient care related tasks.	Self-identifies gaps in knowledge and skills. Seeks to broaden knowledge beyond task. Years 1, 2, 3	Is a self-directed life-long learner, independent of patient care.
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PBLI2 (PBLI4) Systematically analyzes practice using quality improvement methods with the goal of practice improvement

Lacks reflection on practice. Is defensive when provided feedback on performance. Does not understand QI methodology.	Uses improvement strategies at individual patient but not systems level. Depends on external prompts to define QI opportunities.	Expands QI opportunities from individuals to populations. Understands QI methodologies. Years 1, 2, 3	Analyzes own data on a continuous basis. Uses PDSA process for improvement. Is able to lead a team in improvement.	Extends QI to systems beyond one's own practice and implements change.
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PBLI3 (PBLI7) Uses information technology to optimize learning and care delivery

Is reluctant to use information technology. Is unable to prioritize information retrieved.	Has basic EBM and EHR skills but is not able to use them with ease and facility.	Efficiently retrieves and utilizes information for medical decision making. Year 1	Habitually uses information for medical decision making for patients and populations. Year 2, 3	Contributes to development and improvement of information technology for patient care and/or professional learning.
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PBLI4 (PBLI 9) Participates in the education of patients, families, students, residents, and other health professionals

Knowledge gaps result in rigid education that does not meet patient needs. Doctor-centered.	Begins to meet needs of patients. Does not check for patient understanding.	Individualizes teaching to meet needs of patient. Checks for patient understanding inconsistently.	Is a flexible educator. Is typically patient-centered. Empowers and motivates patients. Years 1, 2	Is habitually patient-centered. Empowers and motivates to make healthy changes. Always checks patient understanding. Year 3
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PROF1 (P-Con) High standards of ethical behavior which includes maintaining appropriate professional boundaries

Shows repeated lapses in professional conduct.	Shows periodic lapses in professional conduct under conditions of stress or fatigue.	Shows professional behavior in most circumstances. Shows insight into actions.	Shows professional behavior in nearly all circumstances. Helps others with issues of professionalism. Years 1, 2	Serves as a model of professional conduct. Exhibits excellent emotional intelligence. Maintains high
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				ethical standards. Year 3
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PROF2 (PPD5) Demonstrates trustworthiness in the care of patients

Shows lapses in data- gathering and follow-through. Occasionally misrepresents data.	Shows occasional lapses in follow-up. Does not recognize limits.	Takes ownership for focused needs of patient care. Is reliable. Is able to prioritize. Recognizes limits. Year 1	Assumes full responsibility for all aspects of patient care. Anticipates problems. Years 2, 3	Is a master clinician.
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PROF3 (PPD 6) Provides leadership that enhances team functioning, the learning environment and/or health care system/environment with the ultimate intent of improving care of patients

Is disorganized and inefficient in team management. Manages by mandate.	Is somewhat organized but is indecisive. Sometimes engages team members in decision making.	Manages in an organized manner. Is focused and decisive. Advocates somewhat effectively for team. Year 1	Is organized and efficient. Encourages team members to take ownership. Advocates effectively for team. Years 2, 3	Shows inspirational, strong and consistent organization and team leadership skills. Advocates proactively.
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PROF4 (PPD 8) Recognizes that ambiguity is part of clinical medicine and respond by utilizing appropriate resources in dealing with uncertainty

Avoids engaging family in decision-making in the face of uncertainty.	Overwhelms family with medical jargon. Does not take their needs into account.	Utilizes additional information to address uncertainty but doesn't incorporate family perspective.	Balances delivery of information with individual patient health care goals. Years 1, 2, 3	Partners with family to develop and continually revise plans in the face of uncertainty.
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ICS1 (ICS1) Communicates effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds

Uses standard medical interview template. Is uncomfortable asking personal questions.	Uses interview to establish rapport and focus on information exchange. Identifies but cannot manage	Begins to develop a standard approach to difficult scenarios. Is able to mitigate	Establishes a therapeutic alliance. Tailors communication and approach to the individual. Handles majority of difficult	Fosters trusting and loyal relationships. Educates patients and families. Intuitively
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	barriers to communication.	barriers.	situations. Years 1, 2, 3	handles difficult situations.
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ICS2 (ICS4) Works effectively as a member or leader of a health care team or other professional group

Passively follows the lead of others. Shows little initiative within team.	Puts self before team but attempts to integrate.	Sees self as an integral part of the team. Recognizes team roles but does not seek leadership. Year 1	Seeks out and takes on a leadership role. Initiates problem solving. Years 2, 3	Creates a high-functioning team or joins a poorly functioning team and facilitates improvement.
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ICS3 (ICS5) Acts in consultative role to other physicians and health professionals

Performs an accurate H&P. Limited knowledge makes it difficult to focus on question asked.	Differential diagnosis and recommendations are focused on question but not comprehensive. Takes some ownership of patient outcomes.	Shows advanced knowledge in area. Recognizes limitations. Recommendations are consistent with best practice. Shares good relationship with referring physician. Years 1, 2, 3	Is a content expert. Vast experience and clinical judgment allow for succinct answers to questions asked. Shares a collaborative relationship with referring physician.	Is a master clinician. Lends practical wisdom to consultation.
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Milestones below are not required in the GME report worksheet. However, the ASPHO Program Director Task Force felt these were important milestones to evaluate for the Pediatric Hematology/Oncology subspecialty.

(PC8) Prescribes and performs all medical procedures

Is unclear about appropriate indications or procedure technique. Shows limited technical ability. Does not seek informed consent. Does not appropriately coordinate care or preparation.	Shows some understanding of indications. Is able to perform parts of the procedure. Has limited ability to troubleshoot. Is able to get informed consent.	With few exceptions, chooses correct procedure. Is able to completely perform procedures under most circumstances and to overcome most challenges.	Always chooses correct procedures. Has complete understanding of indications. Obtains appropriate informed consent. Performs technically correct procedure under most circumstances. Years 1, 2, 3	Is able to troubleshoot, teach skills and supervise others.
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(PC13) Provides appropriate supervision

Finds it difficult to step back from direct care.	Is unable to delegate appropriately based on level of competence of supervisee.	Micromanages.	Is able to delegate, especially when prompted by supervisee. Sometimes recognizes teaching opportunities for others. Years 1, 2, 3	Delegates optimally. Recognizes professional growth of others.
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(ICS3old) Communicates effectively with physicians, other health professionals, and health related agencies

Does not take context or audience into account when communicating.	Begins to adjust to context though still includes excess detail.	Usually chooses appropriate modality and strategy for communication. Begins to improvise in unfamiliar situations. Year 1	Distills complex information succinctly for any audience. Improvises in difficult communication scenarios. Years 2, 3	Is a master of improvisation. Is recognized as an effective public speaker. Is a role model for difficult conversations.
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(PPD2) Uses healthy coping mechanisms to respond to stress

Stressors lead to significant impairment in performance.	Has limited coping mechanisms with emotional outbursts or blaming of others.	Coping mechanisms more developed but behavior occasionally is compromised under significant stressors. Year 1	Reflects on prior experiences to develop healthy strategies to respond to stress. Years 2, 3	Anticipates one's own stressors. Helps to alleviate stress for others.
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(P-Hum) Professionalism: Humanism

Is detached. Is not sensitive to the needs of the patient.	Has a general pattern of lack of sensitivity but shows compassion at times.	Consistently responds with kindness and compassion to needs of families. Years 1, 2, 3	Anticipates non-medical needs and shows altruism.	Is a proactive advocate on behalf of those in need in our society.
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Legend

Standard competency achievement level stated by end of each academic year of fellowship is highlighted in yellow or blue.

N. Entrustable Professional Activities and Milestones

Entrustable Professional Activities (EPAs) have been developed by the American Board of Pediatrics as a framework to help supervisors decide when trainees are ready for unsupervised practice. With EPAs, increased entrustment of the trainee to independently perform clinical care occurs as they are determined to have achieved progressively higher levels of the Milestones associated with the Pediatric Competencies. Following are EPAs that have been developed for all Pediatric sub-specialty trainees in addition to those specific to Pediatric Hematology Oncology. EPAs are linked to specific Pediatric Competencies and their Milestones in the evaluation process. Milestones refer to the developmental progression of knowledge, skills and attitudes for each sub-competency.

EPAs for Pediatrics, all sub-specialties:

- Provide for and obtain consultation with other health care providers caring for children.
- Manage information from a variety of sources for both learning and application to patient care.
- Contribute to the fiscally sound and ethical management of a practice.
- Lead and work within interprofessional health care teams.
- Facilitate handovers to another healthcare provider either within or across settings.
- Engage in mindful practice.
- Lead within the subspecialty profession.
- Apply public health principles and improvement methodology to improve the health of populations, communities and systems,
- Engage in scholarly activities through discovery, application, and dissemination of new knowledge (broadly defined).

EPAs for Hematology Oncology:

- Manage patients with hematology oncology conditions, whether acute or chronic, simple or complex, in an ambulatory, emergency, or inpatient setting.
- Provide a medical home for patients with complex, chronic, or special health care needs.
- Facilitate the transition from pediatric to adult health care.
- Demonstrate competence in performing the common procedures of Pediatric hematology oncology.
- Introduce and transition patients to palliative care and manage patients with terminal disease.
- Enroll and treat patients on clinical and translational research trials.

O. Program Evaluation Committee

The goal of the Program Evaluation Committee (PEC) is to oversee curriculum development and program evaluation for the Children's Hospital & Research Center Oakland Pediatric Hematology Oncology Fellowship Program.

The PEC will meet annually. The PEC will have at least three members, two program faculty and one trainee from the program. Faculty members may include physicians and non-physicians from Children's Hospital & Research Center Oakland Pediatric Hematology Oncology Fellowship Program.

The committee's responsibilities are to:

- Plan, develop, implement and evaluate educational activities of the program;
- Review and make recommendations for revision of competency-based curriculum goals and objectives;
- Address areas of non-compliance with ACGME standards;
- Review the program annually using evaluations of faculty, residents or clinical fellow and others;
- Document on behalf of the program formal, systematic evaluation of the curriculum at least annually and render a written Annual Program Evaluation (APE), which must be submitted to the GMEC annually in the Annual Program Director Update;
- Monitor and track each of the following:
 - Resident/fellow performance;
 - Faculty development;
 - Graduate performance including performance on certifying examination;
 - Program quality; and
 - Progress in achieving goals set forth in previous year's action plan.
- Review recommendations from the Clinical Competency Committee

The PEC will be provided with confidential resident/fellow and faculty evaluations data by the program's administrative staff in order to conduct their business.

The Program Director is ultimately responsible for the work of the PEC. The program director must assure that the annual action plan is reviewed and approved by the program's teaching faculty. The approval must be documented in meeting minutes. The program's annual action plan and report on the program's progress on initiatives from the previous year's action plan must be sent to the GME committee annually.

P. Quality Improvement Project

Fellows will become members of the Department's Quality Improvement committee, the 5South MQIC, which meets on the second Thursday afternoon of the month. The Chair of this committee is the Inpatient Medical Director, Dr. Anu Agrawal. First year (clinical) fellows will be expected to attend the meetings and actively participate in the planning, implementation, and analysis of an intervention on a practice outcome. Alternatively, they may choose a QI project that is more disease based. Dr. Agrawal will provide oversight for this task and assist with the identification of a suitable project. Fellows will be asked to write a summary of the QI project and present it at the Departmental physician meetings. The respective fellows will also be responsible for the educational component of the project, such as new teaching or dissemination of

information to other departments or staff at the hospital. This summary will become part of the fellow's portfolio.

Q. Mentorship

A mentor is one of the most influential figures in the life of an aspiring doctor. Mentoring is a reciprocal relationship between an advanced career incumbent (the mentor) and a junior faculty member or physician in training (the mentee) aimed at fostering the professional and personal development of the mentee. Many successful clinicians and scientists identify early positive role models as mentors critical to their success. At various times, the mentor serves as a teacher, sponsor, advisor, and role model. The most critical function of the mentor is to support and assist the junior person to succeed. Mentoring in academics is traditionally divided into several categories: clinical, research, and career. Additionally, there may be personal mentors for navigating through difficult times and situations, relationship building, and offering guidance in "balancing" personal and career objectives. It is important to distinguish between these types of mentors as they differ in goals, skills, and the fundamental relationship between the mentor and mentee.

The goal of the clinical mentor is to assist the fellow in acquisition of clinical skills, knowledge base, and development of relationships with colleagues, staff, and patients and their families. The mentor provides guidance in reaching academic goals and improving basic skills in communication. The mentor and fellow mentee should work together to formulate specific goals for success in the field, such as improving presentations at Tumor Board, giving Informed Consent, and formulation of clinical care plans.

The goal of the research mentor is to assist the mentee in the development of a research career. This involves the acquisition of research skills, selecting and conducting research projects, presenting research findings at national meetings, ensuring completion and submission of manuscripts, assisting in networking, and teaching the mentee how to obtain extramural funding. See Section V.I. SOC: Guidelines for Committee Members for more details.

The goal of the career mentor is to focus on more global aspects of an academic career, including balancing family demands and work, career promotion, juggling different aspects of academic life (teaching administration, clinical care, and research), and major career decisions, such as changing institutions or research direction. Career mentors typically have accumulated years of experience and wisdom in academia.

The responsibilities of the mentor include:

- Being available;
- Acting as an advocate for the mentee;
- Insisting on completion of project(s);
- Assisting with networking; and
- Being proactive in seeking extramural funding.

Undoubtedly, the single most important ingredient in the mentor-mentee relationship is a sufficient on-going time commitment from the mentor. Effective mentoring requires regular formal, scheduled meetings and informal discussions.

The mentee also has certain responsibilities. The mentee must hold the mentor accountable for various details of the relationship such as time commitment, reading manuscripts and grants in a timely fashion, etc. Mentees must seek out and be willing to hear criticism and be prepared to discuss how to improve themselves. Mentees must also commit appropriate time and effort to analyze data, complete and submit written reports, abstracts or manuscripts per a mutually agreed upon timetable. Mentees are encouraged to foster relationships with more than one mentor in order to gain various perspectives, including colleagues outside the department or institution. The mentor-mentee relationship needs to mature over time, as the mentee transitions to more independence.

Identifying appropriate mentors can be a frustrating task. Mentees need a certain level of self-awareness to be able to articulate the type of colleague they would be able to work with and assure success. Mentees should meet with a number of prospective mentors to discuss goals and expectations, and in addition, should meet with other junior faculty or fellows who have worked with this individual in a mentor-mentee relationship. Also, all need to recognize that sometimes, despite the best of intentions, the relationship is not working and they need to change mentors.

In the Hematology Oncology fellowship program, the Continuity Clinic attending often serves as a clinical and/or career mentor for the fellow. However, any of the clinical faculty can serve as this mentor. Ideally, a 3-year relationship is established with this faculty member, and opportunity for frequent interaction, discussion, and development of a personal relationship often fosters this natural mentor-mentee relationship. Additionally, first year fellows will often conduct short literature reviews, write and submit abstracts on retrospective data, and/or write review articles or case reports with a number of the faculty. These ventures, in addition to specific academic interests, often also lead to a natural alliance between a particular member of the faculty and the fellow.

Fellows are asked to seek mentorship and establish formal relationships during the first year. If the fellow has not chosen a mentor by mid-year, a mentor may be assigned by the Program Director. Fellows will meet periodically with the Program Director, to discuss goals (program and personal), check in on progress in clinical and research topics, review evaluations, and be offered support. Mentors are also invited to participate per request of the fellow. In the middle of the first year, the fellow will begin to pursue an area of investigation for the second and third years. A major part of this research development is to identify a research mentor, who shares a common interest in the research question and is willing to commit the time and attention needed to assure completion of the project and research success. The research mentor assists the fellow in development of the research question, review of background materials, research methodology, periodic reviews at the Scholarship Oversight Committee, and preparation of work for written or oral presentation at national meetings. Mentors will be asked to be involved with evaluation sessions of fellow performance with the Program Director and Department Director.

R. Teaching Responsibilities and Curriculum

The Pediatric Hematology Oncology fellow serves a role as a primary teacher for Pediatric residents and medical students on the inpatient and outpatient services, and additionally provides education and guidance to ancillary staff and families/patients. The fellows oversee the clinical care aspects of teaching (leading rounds, performing joint

physical examinations, reviewing and interpreting diagnostic studies) in addition to giving formal didactic presentations. During the inpatient experience, the fellow provides direct supervision related to patient care to the residents and medical students on the team and provides guidance for self-education in the form of providing relevant medical literature and citing appropriate references for review. The fellow serves as the primary orchestrator of patient care as well as the primary educator. In the clinic setting, the fellow also provides direct supervision and teaching to Pediatric residents and medical students. In addition, the fellow actively participates in a formal educational program for the Pediatric residents. Each fellow is asked to prepare at least one Noon Conference on a topic in Hematology or Oncology, participate in Resident Case Conference and present cases or lead discussions for the inpatient unit didactic series. Each fellow is expected to review specific disease topics for presentation at the Fellow's Hematology Oncology Educational Conference, Hematology Case Conference, and Journal Club, and **give a minimum of 12 prepared didactics per year**. Pediatric residents currently on the Hematology Oncology services are encouraged to attend these teaching conferences.

Fellows are **required** to attend the quarterly UCSF Fellows College, which provides instruction in basic teaching principles. These principles include preparation of materials, development of teaching tools, knowledge of adult learning techniques, use of information technology, skills to participate effectively in curriculum development, and the assessment of efficacy in teaching.

A formal teaching curriculum on topics in Professionalism has been developed under the auspices of the Graduate Medical Education Program at CHRCO. Topics may include: sleep hygiene, the art of consultation, communication, ethical challenges, medical error, quality improvement, and practice management. These sessions will primarily be in the form of monthly noon conferences and all fellows are **required** to attend.

S. Supervision and Supervisory Lines of Responsibility

All patients seen at or admitted to UCSF Benioff Children's Hospital Oakland will have a designated Attending Physician who is a member of the medical staff.

As required by the Medical staff Rules and Regulations, the Attending Physician is ultimately responsible for all decisions related to the patient's diagnostic and treatment plan and outcomes. The diagnostic and treatment plan must be discussed with the Attending Physician at the time of admission and subsequently on a daily basis. Ideally "discussion" will be by verbal communication, but may as circumstances dictate, occur by entries into the Progress Note section of the EMR/EPIC. Any significant changes in the diagnostic or treatment plan must be communicated to and be approved by the Attending Physician, unless a delay in intervention might compromise the patient's course.

Pediatric Hematology Oncology fellows are supervised for all clinical care and decision making. Fellows are given progressive responsibility under the close supervision of the Attending Physicians. All diagnostic and therapeutic procedures performed by fellows are also directly supervised by the Attending Physician.

While on-call, the fellow is expected to consult the on-call Attending Physician for any situation in which the patient is critically ill, the fellow needs to come in to the hospital such as for a newly diagnosed oncology patient, or if the fellow is inexperienced or uncertain of how to proceed with a certain patient or illness. See Night/Weekend/Holiday Call and Sign-Out, Section IV.E. As the first year progresses, fellows are expected to assume more responsibility in patient care and decision making. Fellows are given feed-back and encouragement by the faculty supervisors with respect to independent decision making.

While on the inpatient services, fellows assume a supervisory role for medical students and Pediatric residents. They are expected to assume the role of a junior attending physician and provide general teaching and instruction in patient care, examination, procedural performance, interpretation of laboratory and diagnostic studies, and creation and monitoring of clinical care plans. See Level Specific Competency Based Aspects of Training and Evaluation, Section IV. M. Second and third year fellows provide supervision while on call, in the clinics, and during the third year inpatient rotation, for first year fellows, in addition to residents and medical students.

T. Clinical Objectives for the Outpatient Orientation Rotation

The first year fellows spend the first four to five weeks of the fellowship in an Outpatient Orientation Rotation. During this rotation, the fellows attend and participate in all aspects of the outpatient clinics and procedures. These clinics include the general hematology and oncology clinics, sub-specialty clinics such as Thalassemia, Sickle Cell, Neuro-Oncology, Hemophilia and Thrombophilia, in addition to comprehensive sub-specialty clinics. During this month, the fellows become oriented to the staff, hospital setting, computer systems, EMR systems, and routine clinical protocols. They will take the necessary didactic and online courses to allow participation in patient care and clinical trial involvement including EPIC training, the CITI course, and any other requirements for clinical trial participation as determined by the NIH and/or COG. Daily lectures are given by the faculty, ancillary staff and senior fellows on common topics that may be encountered while on-call, with a specific emphasis on common strategies for evaluation and management. The senior fellows provide an over view of call responsibilities and sign-out procedures. The clinical psychologists meet with the first year fellows during this time to discuss common clinical situations and strategies for enhanced communication and psychosocial assessment of patients and their families. The fellowship director and associate directors allocate several sessions to provide global orientation to the program.

Specific objectives of this rotation are:

- Fellows should recognize common hematologic problems encountered in an outpatient setting and on-call, including immune thrombocytopenia purpura, anemia and neutropenia and initiate diagnostic and evaluation strategies in common disease states.
- Fellows should become knowledgeable regarding navigation of oncology protocols, including the Children's Oncology Group (COG) and Head Start therapeutic protocols. Complete the CITI course as required by the IRB for conduct of clinical trials.

- Fellows will gain an understanding of common problems encountered by patients with Sickle Cell disease, such as pain events, infections, strokes, and iron overload.
- Fellows will participate in multi-disciplinary rounds, conferences, and clinics, and understand the contribution of such specialized care in complex medical disease.
- Fellows will develop a good understanding and comfort with respect to navigation of the hospital communication systems, general program requirements, and educational goals.
- Fellows will initiate training in the performance of common procedures (lumbar puncture with instillation of chemotherapy, bone marrow aspirates and biopsies) and maintain a log of procedures.
- Fellows will participate in EPIC training with the goal of being able to efficiently and competently utilize the EMR in patient care and communication.

U. Clinical Objectives and Responsibilities for the Inpatient and Consultation Rotations

While on the clinical inpatient services (Red or Aqua teams) fellows assume primary care responsibility for all the patients on their service. Direct supervision is provided by the attending on the inpatient service. During the course of the three years, it is anticipated that many of the topics listed in the Clinical Core Curriculum (Section IV.H.) will be covered by direct clinical experience. Fellows participate in the evaluation (medical history and physical examination), assessment (clinical, laboratory, radiographic), and management of patients with creation and implementation of care plans. Fellows assess newly diagnosed patients primarily in the first year while on the clinical inpatient services. Fellows then have the opportunity to co-manage these patients (primary patients) with an attending throughout the course of their training. In this way, experience in management throughout and off therapy may be attained. Additionally, fellows are involved in the care of on-going patients in both the inpatient and outpatient areas and attain experience in managing acute illnesses, relapses, chronic illnesses, and late effects of disease and treatment. First year fellows will spend approximately 6 months on the inpatient services. Following are the general goals of the *first year* training program:

- The fellow should become competent in the delivery of quality patient care involving the evaluation and management of children and adolescents with common pediatric hematologic and oncologic disorders.
- The fellow should develop a strong fund of knowledge in these areas (also see Section IV.H. Clinical Core Curriculum).
- The fellow should develop and demonstrate effective interpersonal and communication skills.
- The fellow should understand and become competent in participation in the clinical trial process.
- The fellow should recognize and manage the psychosocial aspects of severe, chronic and life-threatening diseases using, when appropriate, institutional and community resources.

- The fellows should develop technical proficiency of the procedures associated with the subspecialty and an appreciation of the key laboratory methodologies and result interpretation.

Fellows in their *second year* of fellowship do not have a specific inpatient assignment. However, fellows take night and weekend call to provide continuous fellow coverage. It is expected second year fellows will have mastered the goals as stipulated for first year fellows and be able to function more independently in medical decision making. Supervision by attending staff is, however, always expected. At this stage of training fellows are also expected to be able to perform procedures and consultations independently with assistance by the attending as needed for complicated or unusual cases. Fellows will also be expected to independently lead resident rounds and provide resident supervision.

Third year fellows are assigned four weeks on the inpatient services. During this time they are to assume “attending” responsibilities, though an attending will round with them and see the patients. Fellows are expected again to have mastered the goals expected of first and second year fellows and be able to demonstrate an increase in knowledge base and independence in the diagnosis and management of complex patients. Third year fellows will lead rounds, evaluate all the patients, institute care plans, provide team leadership, and directly supervise medical students, residents, and first year fellows on the team. The third year fellow will also perform all procedures and be expected to assume a teaching role for junior fellows and residents who desire to attain procedural competence.

Following are specific responsibilities for fellows on the inpatient services:

Patient Care

- Assume primary care responsibility for all patients on the service.
- Evaluate each patient daily with a careful medical history and physical examination.
- Determine necessary diagnostic studies and interpret results.
- Develop and implement a care plan for each patient. Review prior care plans for established patients and update as needed.
- Write chemotherapy orders.
- Perform all procedures.
- Provide Informed Consent to all patients, including new diagnoses.
- While on the Red service, see inpatient consultations with appropriate documentation and communication.
- While on the Aqua service, assume primary responsibility (if no assigned resident) for BMT patients (see Section IV.BB. Clinical Objectives for the 1st Year Hematopoietic Cell Transplant/BMT service).
- Chart all interactions; assessments in the form of admission notes, progress reports, and discharge summaries; management plans; procedure notes, and consents every day.
- Sign out all patients to the on-call fellow, including consultations and ICU patients. Sign out BMT patients to the on-call residents.
- Attend the BMT clinic with the team while on the Aqua Inpatient rotation

Teaching and Leadership

- Communicate with the patient and family all aspects of assessment and management, including leading formal Informed Consent conferences for therapy and participation in clinical trials.
- Interact with the multidisciplinary team.
- Lead rounds and provide direct supervision and teaching for the residents (see also Supervision and Supervisory Lines of Responsibility, Section IV.S.).
- Prepare didactic/case presentations for the residents on the service.

All fellows participate in a rotating schedule of **inpatient Hematology/Oncology Consultation**. The time commitment for this service is as follows: 1st year fellows—18-19 weeks each; 2nd year fellows—6 weeks each; 3rd year fellows—2 weeks each. First year fellows see inpatient Hematology Consultations while on Red team and during additional clinical rotations. New probable Oncology Consults may be seen by fellow/attending on the Aqua team. The appropriate team attending serves as the supervisor for this consultative service. Senior fellows are able to continue to develop consultative skills and have more time and experience to do these effectively, which include assessment of the chart, history, examination, and review of the relevant medical literature. A detailed written consultation note is generated by the fellow and discussed with the referring team, and appropriate educational materials provided.

Fellows will be expected, **at a minimum**, to write a brief note on every consult patient on both Mondays and Fridays. The Monday/Friday notes don't necessarily have to be full-length notes with exams. They can be brief communications, intended more to communicate with the primary teams as well as the oncoming Hematology Oncology consult providers. More complete follow-up notes, with exams, should be written when clinically appropriate. Fellows should maintain daily communication with the clinical teams providing care to active consult patients.

The fellows will maintain an updated Consult list in EPIC. The consults will be signed out by the consult fellow in person on Mondays and Fridays with the on-call teams, and a detailed email will be updated weekly (Fridays) on the active and inactive consult patients.

V. Clinical Objectives for the 1st year Pathology Rotation

The Pathology Rotation provides laboratory training in conjunction with UBCHO's pathology department and special hematology laboratory facilities. The on-service pathologist provides direct mentorship and supervision during this 1-week rotation at CHRCO and the UCSF hematopathologist will provide supervision during the one week hematopathology portion at UCSF.

Upon completion of the training program at CHRCO and UCSF, fellows are expected to independently review and interpret a **peripheral blood smear** and **bone marrow aspirate/biopsy** in a setting of hematologic or oncologic disease. Fellows are taught the proper use of laboratory techniques, including the performance and interpretation, for diagnostic purposes.

Educational opportunities are provided in the following areas:

- Tissue pathology (solid tumor)
- Bone marrow aspirate/biopsy (morphology, flow cytometry, special stains)
- CSF cytology
- HLA laboratory
- Hemoglobin Reference laboratory (electrophoresis, genotyping)
- Ektacytometry

Specific objectives of the pathology and laboratory rotation include:

- Prepare and stain high quality bone marrow aspirate smears and CSF slides.
- Perform accurate cell counts and morphologic assessment of bone marrow aspirates and peripheral blood smears.
- Interpret special stains on bone marrow aspirates and apply these data to the classification of leukemia.
- Determine the appropriate use of ancillary techniques such as flow cytometry, cytogenetics, immunohistochemistry and molecular genetic analysis.
- Describe the separate but complimentary roles of bone marrow aspirates, core biopsies and flow cytometry in the evaluation of hematopoietic disorders.
- Recognize the major limitations of each of these techniques in evaluating hematopoietic disorders.
- Identify the specimen requirements and turnaround times for each of these techniques.
- Outline the current classification nomenclature for neuroblastoma, rhabdomyosarcoma, peripheral primitive neuroectodermal tumors, nephroblastoma, and lymphoma.
- Describe the main techniques used in the evaluation of solid tumors of childhood and the specimen requirements and turnaround times for each method.
- Understand the role of frozen section evaluation of suspected pediatric neoplasms, including indications, limitations of the technique, and diagnostic accuracy.
- Outline the clinician's responsibilities in obtaining an autopsy.
- Describe the routine autopsy procedure and turnaround times.

The attainment of these objectives will be evaluated by practical and written examinations. Laboratory mentors will be asked to submit a written evaluation of the fellow's performance at the conclusion of the rotation.

W. Clinical Objectives for the 1st year Blood Banking Rotation

A 1-week rotation in Blood Banking has been created in partnership with Shannon Kelly, MD, Director of Apheresis at BCHO and staff physician scientist at Vitalant Research Institute in San Francisco. Fellows will have the opportunity to work with Dr. Kelly and colleagues at Vitalant (in San Francisco) in addition to staff in the blood bank at BCHO.

Specific objectives of the Blood Banking rotation are:

- Understand methods of donor recruitment, collection and storage, safety and testing.

- Understanding of blood component modification including volume reduction, washing, irradiation
- Perform basic blood typing and extended phenotyping, cross matching and DAT, antibody screens, and understanding of RBC antigen genotyping.
- Become knowledgeable about appropriate indications for blood product transfusion.
- Be able to recognize and manage platelet transfusion refractoriness, transfusion reactions, and transfusion acquired infections.

X. Clinical Objectives for the 1st year Radiation Oncology Rotation

The Radiation Oncology rotation will be at Alta Bates Medical Center under the direction and supervision of Christine Chung, MD, Director of Pediatric Radiation Oncology and her colleagues.

The goals and objectives will be to introduce fellows to:

- The basics of radiation biology and physics, through readings in the textbooks recommended by Dr. Chung and mentors. Clinical applications of radiation oncology through initial examinations of new patients (adult and pediatric) seen in the Department of Radiation Oncology. Fellows will see these patients with the attending radiation oncologist, discuss the evaluation and management of each case, and follow these patients during their daily treatment visits and follow-up.
- Specific understanding of the role of radiation oncology in the current open Children's Cancer Group studies.
- Knowledge of short-term and long-term toxicity of radiation alone or in combination with chemotherapy.

Y. Clinical Objectives for the 1st year Palliative Care/Pain Service Rotations

A 2- week clinical rotation has been developed, in conjunction with The Palliative Care program and Pain Service at BCHO, to impart to fellows understanding and appreciation for concepts in hospice and end of life care. Supervision and teaching will be provided by members of the Palliative Care team, Hematology Oncology and Anesthesia services. Additionally, there is an opportunity for fellows to spend two weeks on the Pain and Palliative Care service at UCSF. The following objectives have been created for this rotation:

- Understand the importance of and learn strategies for effective communication between team members, families and patients to provide optimal comfort care in a respite or end of life setting.
- Understand the symptoms commonly encountered in providing palliative care and learn appropriate pharmacologic and other interventions.
- Understand the unique resources available to families through palliative care services and the physician's role in these services.
- Understand the death/dying process, including common signs and physiologic changes near the time of death and physician roles and responsibilities when a patient expires.

- Become familiar with ethical and cultural issues that may arise at the end of life for children and adolescents, and understand the normal process of grief for families after a loss.
- Work as part of a multidisciplinary team for the management of pain
- Learn medical and complimentary therapies that are important for pain management (acute and chronic) as related to palliative care and/or chronic pain syndromes

*This rotation will include opportunities to participate in new consultations, follow-up visits and interdisciplinary meetings by the Children's Hospital Palliative Care Team. In addition, fellows will have the opportunity to spend some time at the George Mark Children's House, the first freestanding pediatric hospice/palliative care facility of its kind. There may also be opportunities to participate in home visits through regional hospice agencies. There will be lectures on core pediatric palliative care topics as well as focused reading materials and videos.

Each fellow will be asked to create a didactic presentation at the weekly Fellow's Hematology Oncology Educational Conference on some aspect of their experience on this rotation. Dr. Beach at Children's Oakland, as well as Dr. Kim and Dr. Sun at UCSF, will provide an evaluation of the fellow's performance at the conclusion of the rotation.

Z. Clinical Objectives for the 1st year Bone Marrow Transplant Rotation

First year fellows will spend 3 months (12 weeks) of clinical time on the inpatient Aqua service, and participate directly in the care of patients undergoing bone marrow transplantation. Fellows spend an additional month (5 weeks) in the outpatient setting attending Hematology, BMT and Neuro-Oncology clinics and have the opportunity to see pre- and post-transplant patients, as well as address medical issues unique to these patients. Mark Walters, M.D., the Director of the Blood & Marrow Transplant Program, will provide supervision for parts of these rotations, as will faculty on service.

During inpatient rotations on the Aqua service, first-year fellows will have the following responsibilities:

- Assume responsibility as the primary caregiver of BMT patients (usually 1-2) on 5-South (the immunocompromised unit).
- Act in a supervisory capacity of 2nd year residents caring for oncology and/or BMT patients on the Aqua service.
- Attend the BMT clinic on a Monday/Thursday schedule, and act as primary caregiver of 1-2 patients in the clinic. These encounters will focus on the management of chronic graft-versus-host disease, pre-transplant assessments, and long-term follow-up evaluations.
- Prepare one interactive teaching session per week with the residents on the ward service. This responsibility is shared with all the fellows for the duration of the fellowship. In general, 2-3 lectures per week will be given to all Hematology Oncology residents.
- Attend and participate in all BMT consultations, long-term follow-up, and departure conferences during the rotation.
- Attend and participate in all BMT patient-care conferences and meetings during the rotation.

First year fellows attending the BMT clinics, either during the inpatient or outpatient rotations, will have the opportunity for more extensive reading and integration of newly acquired knowledge in the care of their patients. The BMT program has prepared materials to be available for fellows. Fellows will review the BMT clinical practice guidelines, seminal journal articles, and textbook chapters to familiarize themselves with common transplant principles.

Following are teaching objectives for the clinical fellows on the transplant service:

- Understand about hematopoietic stem cell sources – procurement, processing, indications, and donor registries
- Understand about the scientific basis for transplantation – histocompatibility, methodology of HLA typing, high-dose chemotherapy, mechanisms of tolerance, immunosuppressive therapy, and assessment of chimerism.
- Understand and perform pre-transplant patient evaluations, including assessments of appropriate patient eligibility and studies related to the underlying disease and general organ function.
- Understand how to administer growth factors for hematopoietic stem cell mobilization and for post-transplant hematopoietic cell reconstitution.
- Learn basic principles of infusion of the hematopoietic stem cell infusion and patient management.
- Learn to document and report on patients enrolled on investigational protocols.
- Participate in the harvest of bone marrow stem cells and/or apheresis procedures.
- Perform routine procedures on the BMT patients for assessment and treatment (lumbar puncture and intrathecal chemotherapy, bone marrow aspirates and biopsies, skin biopsies).
- Understand and diagnose common transplant-related complications and learn about their management:
 - Neutropenic fever;
 - Nausea and vomiting;
 - Hemorrhagic cystitis;
 - Thrombocytopenia and bleeding;
 - Pain;
 - Graft-versus-host disease, acute and chronic, – prevention and treatment;
 - Infection prevention and treatment, including fungal and viral infections;
 - Nutritional support;
 - Hepatic (VOD), renal, and gastrointestinal complications;
 - Blood group incompatibilities; and
 - Pulmonary complications (infectious and non-infectious);
 - Engraftment failure;
 - End of life management.
- Understand, recognize, and manage late effects of transplantation:
 - Immunological reconstitution: evaluation and intervention;
 - Development of long term follow-up plans.

- Understand concepts regarding transplantation for acquired diseases, indications for transplantation, preparative regimens and donor selection, and published outcomes for the following diseases:
 - Acute leukemias;
 - CML;
 - Myelodysplastic syndromes and JMML;
 - Solid tumors of childhood; and
 - Hemophagocytic lymphohistiocytosis.
- Understand concepts for transplantation in hereditary diseases, the indication for transplantation, preparative regimens and donor selection, and published outcomes for the following diseases:
 - Sickle cell anemia and thalassemia major;
 - Marrow failure syndromes – severe aplastic anemia, Fanconi’s anemia;
 - Lysosomal storage diseases; and
 - Immunodeficiency syndromes.

AA. Clinical Objectives for the 1st year Neuro-Oncology Rotation

First year fellows have an opportunity to spend two weeks on the Neuro-Oncology service. Fellows will participate in outpatient consultation and care of patients with tumors of the spine and brain, in addition to seeing new consultations and on-going care for hospitalized patients. Reading materials will be provided during the rotation. Fellows are encouraged to observe neuro-surgery should the opportunity arise during this rotation.

Specific objectives of this rotation are:

- Fellows will participate in neuro-imaging rounds and learn basic neuro-anatomy, classic appearance of common brain tumors (brain stem gliomas, post fossa masses, ependymal tumors, spinal tumors, etc.), and common tumor related issues such as edema, pressure changes, gliosis, etc.
- Fellows will learn about common brain tumors such as primitive neuroectodermal tumors, medulloblastomas, ependymomas, high grade gliomas, low grade gliomas (juvenile pilocytic gliomas, optic pathway gliomas), with respect to clinical presentations, diagnostic studies, staging, and treatment concepts.
- Fellows will integrate into the neuro-oncology team and learn to work collaboratively in the management of patients with complex medical issues and late effects of therapy. Fellows will have the opportunity to participate in the monthly comprehensive multi-disciplinary neuro-oncology clinic.

BB. Clinical Objectives for the 1st year Hematology/BMT Clinics Rotation

Fellows in the first year have five weeks focused on the outpatient care and management of patients in the general hematology, sub-specialty hematology, and bone marrow transplant clinics in addition to the monthly hematology clinic. They will attend the clinics in Sickle cell, Thalassemia, Hemophilia, Thrombophilia, and General Hematology, in addition to twice weekly BMT clinics as well as neuro-oncology during

this time period. Fellows will have the opportunity to integrate into the clinical teams and participate in clinical care and consent conferences, team meetings, and comprehensive multi-disciplinary clinics. Fellows will also have the opportunity to learn about laboratory integration in the diagnostic evaluation of their patients. This includes review of peripheral blood smears, coagulation testing, hemoglobin reference laboratory testing, and Ektacytometry. They will also learn about unique imaging studies developed to evaluate patients with iron overload (SQUID, MRI), pulmonary hypertension (ECHO), and stroke risk in Sickle Cell disease (transcranial Doppler).

Specific responsibilities and objectives of this rotation are (in addition to Clinical Objectives for the 1st Year the Bone Marrow Transplant Rotation, Section III.Z.):

- Fellows will participate in multi-disciplinary care of patients with complex hematologic disease and appreciate individual roles in the management of such patients.
- Fellows will learn aspects of continuity of care of patients with chronic hematologic disease, such as Sickle Cell disease (chronic pain, iron overload, school performance issues, growth retardation, recurrent infection, chronic lung disease, pulmonary hypertension, neuropsychological issues) and Thalassemia (transfusion dependence, nutritional issues, endocrinopathies).
- Fellows will learn to evaluate, diagnose and manage children and adolescents with bleeding or clotting disorders. They will develop an understanding of common acute problems and therapies in addition to chronic problems and potential interventions.
- Fellows will learn to utilize specialized diagnostic testing (laboratory, imaging) for initial diagnosis of hematologic disease in addition to monitoring of chronic complications.

CC. Clinical Objectives for the 2nd/3rd year Sub-Specialty Clinic Block Rotations

Fellows in the 2nd and 3rd year will have the opportunity to participate in the following sub-specialty clinics: Bone Marrow Transplantation, Hemophilia, Neuro-Oncology, Sickle Cell Disease, and Thalassemia. These rotations will provide deeper and more concentrated exposure to these disciplines, with an emphasis on outpatient management and a multidisciplinary approach to care. Fellows will be assigned 2 sub-specialty rotations per year in their 2nd and 3rd years, scheduled as six-week contiguous blocks. They will attend a minimum of 1 half-day clinic per week throughout each block, in lieu of their regular continuity clinic in Oncology or General Hematology. Participation is also expected in any associated multidisciplinary team meetings during the rotation. A syllabus of reading materials relevant to each rotation will be provided. A final project will be completed during or after completion of each rotation, consisting of a presentation at either Fellow's Conference or Journal Club on a topic of interest pertinent to the learning objectives of the rotation. Fellows may also choose to complete an alternative project or presentation with the approval and oversight of the physician supervising the rotation.

Following are the learning objectives for each rotation:

1. Bone Marrow Transplantation Clinic

- Understand the indications for stem cell transplantation in malignant and non-malignant disorders
- Understand the basic principles of donor selection, including:
 - HLA testing and interpretation
 - Differences between stem cell sources:
 - Bone marrow
 - Umbilical cord blood
 - Peripheral blood
 - Process of unrelated donor identification through registries
- Understand factors affecting the choice of preparative regimen for transplantation
- Understand the timeframe and assessment of immune reconstitution
- Understand the risks of infectious complications during different time periods after transplantation
- Understand the assessment and management of acute graft-versus-host disease
- Understand the assessment and management of chronic graft-versus-host disease
- Recognize the potential late toxicities of stem cell transplantation

2. Hemophilia Clinic

- Understand the elements of a multidisciplinary approach to management of hemophilia
- Understand the components of routine health maintenance and surveillance for children with hemophilia and other bleeding disorders
- Develop a rational approach to diagnosis of patients with suspected bleeding tendency
- Understand the approach to managing joint disease in hemophilia
- Recognize the differences between recombinant and plasma-derived factor products for hemophilia and gain a working knowledge of new products in development
- Understand the indications and options for prophylaxis in hemophilia
- Understand the management of hemophilia patients with inhibitors:
 - Diagnosis, interpretation of laboratory studies
 - Low-titer vs. high-titer management
 - Strategies for immune tolerance induction
 - Use of bypassing agents
- Understand the approach to diagnosis of von Willebrand disease
- Understand the options for management of gynecologic bleeding in hemophilia and von Willebrand disease
- Understand the options for management of minor bleeding complications in hemophilia and von Willebrand disease
- Understand the options for prophylaxis of minor surgical/dental procedures in hemophilia and von Willebrand disease
- Understand the options for management of major surgical procedures in hemophilia and von Willebrand disease
- Understand the management of patients receiving chronic anticoagulation

3. Neuro-Oncology Clinic

Learning Objectives

- Identify the elements of a multidisciplinary approach to management of CNS tumors

- Describe the epidemiology of CNS tumors in children and adolescents
- Understand the relative prognosis of different CNS tumors
- Describe the characteristics of and general approach to treatment for:
 - Low grade astrocytoma
 - High-grade astrocytoma
 - Medulloblastoma/PNET
 - Ependymoma
 - Optic pathway glioma
 - Brain stem glioma
 - Craniopharyngioma
 - Intracranial germ cell tumors
 - Spinal cord tumors
- Outline the late toxicities of CNS tumor treatment
 - Conventional chemotherapy
 - Bone marrow transplantation
 - Radiation therapy
- Describe how the management of CNS tumors differs in children with neurofibromatosis

Expectations

- Fellow will attend Friday Neuro-Oncology clinics weekly.
- Fellow will be responsible for seeing at least 30% of the patients scheduled in all Neuro-Oncology clinics other than the monthly comprehensive clinic, reviewing the patients with the appropriate attending, and completing the required documentation for the visit, including dictated reports to referring physicians. Fellow will select two patients for each comprehensive clinic attended and will be responsible for presenting these patients during the preclinical conference, evaluating these patients during the clinic, presenting the patients to the appropriate attending, discussing the patients in the post clinic conference, and completing the required documentation for each patient, including dictated reports to the referring physician.
- Fellow will be available to participate in new patient consultations as allowed by his/her research commitments.
- Fellow will complete successfully a final project as outlined below.

Final Project/Presentation

- Fellow will present at either Fellow's Hematology Oncology Educational Conference or Journal Club on a topic of interest pertinent to the Learning Objectives of this rotation.
- Fellow may complete an alternative project or presentation with the approval and oversight of the physician supervising this rotation.

4. Sickle Cell Disease Clinic

- Understand the components of a multidisciplinary approach to care of sickle cell disease patients
- Understand the components of routine health maintenance and surveillance for children, adolescents, and adults with sickle cell disease
- Gain knowledge of transition of care from pediatric to adult services
- Understand the monitoring and management of chronic complications of sickle cell disease
 - Cerebrovascular disease

- Avascular necrosis
- Pulmonary hypertension
- Leg ulcers
- Chronic pain
- Understand the outpatient management of vaso-occlusive pain crises
- Understand the use of hydroxyurea in sickle cell disease: indications, toxicity, monitoring, dose adjustment
- Understand the use of transcranial Doppler ultrasound in sickle cell disease
- Gain knowledge of emerging therapies in SCD including gene therapy and bone marrow transplantation
- Understand the use of chronic transfusion therapy in sickle cell disease
 - Indications for chronic transfusion
 - Management of complications
 - Differences between exchange and straight transfusion regimens

5. Thalassemia Clinic

- Understand the components of a multidisciplinary approach to care of thalassemia patients
- Recognize the consequences and management of chronic transfusional iron overload
 - Cardiac complications
 - Endocrine complications
 - Orthopedic complications
 - Infectious complications
 - Hematologic complications
- Understand the use of iron chelation therapy, including:
 - Indications for initiating therapy
 - Monitoring the effect of therapy
 - Toxicities
 - Differences between currently available agents
 - Strategies for managing noncompliance
- Understand the approach to utilizing blood products in chronically transfused patients
- Understand the epidemiology and genetics of the thalassemia syndromes
- Become familiar with current translational and clinical research in thalassemia at our institution including novel approaches such as gene therapy
- Gain knowledge of transition of care from pediatric to adult care

DD. Clinical Objectives for the 3rd year Long-Term Follow-Up (LTFU) for Survivors of Childhood Cancer

Third year fellows will participate in the LTFU clinic for survivors of childhood cancer for 6 continuous months. This clinic meets monthly for a half day, preceded by a multi-disciplinary review and discussion of the patients. The primary mentors are Dr. Jim Feusner and Dr. Robert Raphael. The following objectives have been developed for this clinical experience:

- Identify the potential late effects of common treatment modalities in pediatric oncology, including:
 - Specific chemotherapeutic agents

- Radiation
- Surgery
- Bone marrow transplantation
- Participate actively in a multidisciplinary team approach to pediatric cancer survivorship
- Become familiar with LTFU recommendations and guidelines from the Children's Oncology Group and other organizations
- Use existing guidelines to create individualized plans and recommendations for off-therapy surveillance of late effects and general health maintenance
- Efficiently review, summarize and present the relevant history of complex pediatric oncology patients
- Understand the process of transitioning care of young adult survivors of childhood cancer from pediatric to adult health care providers
- Recognize the importance of a comprehensive LTFU approach for all survivors of childhood cancer

V. Research Competence/Scholarship Oversight Committee (SOC)

The ABP (American Board of Pediatrics) requires all sub-specialty Pediatric residents (fellows) to participate in scholarly activities during fellowship training. These activities include: participation in a core curriculum, scholarly activities resulting in a work product, and periodic review by the scholarship oversight committee (SOC). The ABP requests that ensuring such activity be the responsibility of the program directors and be reviewed by the RRC (Residency Review Committee) of the ACGME (Accreditation Council for Graduate Medical Education). Please see ABP requirements for scholarly activity at: <https://www.abp.org/content/scholarly-activity>. Fellowship trainees will be required to submit documentation of this training and review at the time of application for the sub-specialty certifying examination.

Fellowship trainees are required to demonstrate a meaningful accomplishment in research. The duration of fellowship training is currently 3 years, with 2 years typically being devoted to this endeavor. Fellows are required to present their research periodically over the course of their training. Hematology Oncology fellows present to the SOC on at least 4 occasions during the course of their training, consisting of an initial presentation in the fall of the second year, followed by 2 interim presentations of their on-going work and a final presentation in June of their graduating year.

Refer to the Common Fellowship Manual for details of the SOC process.