

Pediatric Orthopaedics
At Shriners Hospital for Children, Honolulu PGY-4

Description of Rotation

At Shriners Hospitals for Children – Honolulu, the residents will work with three (3) full-time academic pediatric orthopaedic surgeons at a tertiary care referral center. Shriners serves a wide variety of patients with complex spine and extremity abnormalities stemming from neuromuscular, congenital, post-traumatic and infectious etiologies. Many patients come from third world countries with neglected orthopaedic problems. The residents will participate in preoperative and postoperative care of patients in addition to participating in complex surgical cases. The residents learn to develop surgical plans, including templating, and to understand possible complications. The residents will participate in outpatient clinics where they will refine their knowledge of non-operative care and improve their pediatric physical examination. They will be responsible for learning surgical indications. They are instructed in evidence-based practice. Teaching will be performed on rounds, in the clinic and operating room. There are three (3) formal lectures per week based on the Pediatric Orthopaedic Society of North America (POSNA) recommended topics. Additional focus is centered in pre- and post-rotation knowledge mapping. Each resident completes a knowledge mapping tool based on the POSNA suggested curriculum at the beginning and end of their rotation. The data is compiled to help us refine the focus of our teaching to emphasize areas in which the residents feel a knowledge deficit. The attendings guide the residents toward developing a pattern of life-long learning. They use the RRC’s core competencies as guidelines for teaching. The residents will meet with staff three (3) times during the rotation to formally review (and receive formative feedback) and plan their progress. The residents will present goals and objectives to the preceptors at the start of a rotation. The residents are also guided through the process of initiating and completing a research project.

Length: 4 months of PGY-IV year
Location: Shriners Hospital for Children-Honolulu & Outreach Locations
Primary Supervisors: Ellen Raney, M.D. (941-4466 or 951-3694)
Jonathan Pellett, M.D. (941-4466 or 951-3694)
Craig Ono, M.D. (941-4466 or 951-3694)

Institutional Training Coordinator: Ellen Raney, M.D.

Patient Care

Competency

Residents must be able to provide patient care that is compassionate, appropriate, patient-centered and effective for the diagnosis treatment of orthopaedic problems and the promotion of health. Residents are expected to:

Objectives

1. Demonstrate caring and respectful behaviors (verbal and non-verbal) with patients and families.
2. Elicit appropriate patient medical history information using effective questioning and listening skills.

3. Efficiently assess pediatric orthopaedic patients and document clinical findings in a clear and quantitative form, including range of motion examination, strength assessment, and the results of standard test such as the Ortolani maneuver, the Ober test, the Ely, the Galleazzi, and the Trendelenburg.
4. Properly evaluate and treat common pediatric orthopaedic conditions such as Perthes, slipped capital femoral epiphysis, hallux valgus, osteomyelitis, and hip dysplasia.
5. Properly evaluate and be familiar with treatment of more complex pediatric orthopaedic conditions such as osteogenesis imperfecta, neuromuscular disorders, spinal deformity, and congenital deformities of the upper and lower extremities.
6. Be exposed to severe and neglected problems such as the sequelae of sepsis, Potts disease, polio, and untreated Ricketts.
7. Formulate appropriate treatment recommendations, including non-surgical and surgical treatment goals for the above conditions.
8. Demonstrate proper casting techniques including Ponseti and spica casting.
9. Demonstrate appropriate preoperative evaluation, including consent and surgical site marking for surgical procedures.
10. Demonstrate appropriate postoperative management, including adeptly close surgical wounds, place drains, and apply appropriate post surgical dressing.
11. Demonstrate knowledge of potential outcomes including complications of treatment.

Medical Knowledge

Competency

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents are expected to be able to:

Objectives:

1. Quantitatively assess growth potential and utilize this knowledge to devise a treatment plan that optimizes equality of limb length at the cessation of growth.
2. Understand and utilize the common classification systems applied to congenital malformations and perform common surgical procedures such as simple syndactyly release and removal of polydactylic digits.
3. Understand and utilize the basics of genetic theory to appropriately counsel parents of children with diseases transmitted by Mendelian genetic mechanisms.
4. Understand and use classification systems for Perthes and SCFE.
5. Understand spectrum of club foot, and variations in its treatment.
6. Appropriately evaluate orthopaedic literature and contribute to it by writing publishable clinical research.
7. Initiate and complete a clinical research project which will be presented to the medical staff at conference.
8. Cite levels of evidence in the orthopedic case-driven medical literature.
9. Understand and apply the basic biomedical statistics in evaluation of the medical literature.
10. Demonstrate the ability to select treatment based on evidence from literature.

Practice- Based Learning and Improvement

Competency

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life long learning. Residents are expected to develop skills and habits to be able to:

Objectives:

1. Evaluate one's own knowledge, incorporating feedback from others.
2. Modify self-directed learning appropriately including feedback provided from the OITE results.
3. Appraise and assimilate evidence from scientific studies to enhance patient care.
4. Effectively use information technology to access and manage patient information.
5. Effectively use information technology and other resources to support one's own ongoing self-education (DVDs, CDs, etc) and consultants.
6. Reading prior to performing surgical procedures will be considered mandatory.
7. Be familiar with literature regarding patient disorders presented at Weekly Grand Rounds. Propose and defend a treatment plans for patients.
8. Contribute to discussions concerning patient care with other health care professionals, attendings, including the pediatrics team and consultants.
9. Attend and participate in teaching conferences and rounds.
10. Produce a pre-rotation list of specific goals and objectives for the rotation; share these goals with the Program Director and faculty preceptors; track progress towards achieving these goals and objectives; and report on the accomplishments.

Systems Based Practice

Competency

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as be able to effectively call on other resources in the system to provide optimal health care. Residents are expected to:

Objectives

1. Collaborate with and maintain appropriate professional attitudes and behaviors toward other medical professionals and allied health personnel.
2. Assess how one's own actions affect others, especially in the pediatric setting.
3. Use diagnostic and therapeutic procedures appropriately and judiciously.
4. Evaluate risks, benefits, limitations, and costs of patient care.
5. Provide data for M&M conferences to positively affect patient care.
6. Participate in clinical pathways designed to improve patient outcomes.
7. Serve as patient advocates in dealing with system complexities.
8. Serve as patient advocates for quality patient care.
9. Work effectively with other services, health care providers, and case managers.
10. Work to improve the system of medical care at the Shriners Hospital for Children, Honolulu.

Professionalism

Competency

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:

Objectives

1. Exemplify and display an observable respect and compassion toward patients.
2. Exemplify reliability, punctuality, integrity and honesty.
3. Accept responsibility for one's own actions and decisions.
4. Apply sound ethical principles in medical practice, including issues of patient confidentiality and informed consent.
5. Consider the effects of personal, social, cultural, and age appropriate development factors in the disease process and patient management.
6. Demonstrate non-judgmental sensitivity and responsiveness to the age, culture, disability status, and gender of patients and colleagues.

Interpersonal and Communication Skills

Competency

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

Objectives

1. Establish trust and maintain rapport with patients and families.
2. Complete dictations and chart notes in a timely manner.
3. Discuss diagnoses, prognoses and treatment options clearly and accurately to patients.
4. Synthesize information and present clinical and diagnostic information clearly to colleagues.
5. Utilize effective listening skills
6. Communicate and interact with staff/team in respectful, responsive manner.
7. Promote teamwork, and coordinate the work up of orthopedic pediatric patients.

Teaching Methods

The PGY-4 resident on the Shriners Pediatric Orthopaedic rotation function with a better than 1:1 faculty/resident ratio. The University of Hawaii Orthopaedic Resident is the only orthopaedic resident on-site. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences, and resident lectures.

Assessment Method (residents)

Evaluations

1. The evaluation of residents is an ongoing process, including daily formative evaluation in the operating room, inpatient ward and the clinic. The residents will

meet with staff three (3) times during the rotation to formally review and plan their progress. The objectives are to ensure that the residents are performing at a satisfactory level in carrying out their patient care responsibilities as well as identifying areas of weakness/deficiency as well as strengths.

2. At the end of the rotation, residents are given the opportunity to evaluate the attending surgeons on their teaching proficiency.
3. At the end of the rotation, residents are given the opportunity to evaluate and review the proficiency of the teaching staff using a form provided by the medical staff office.

The program conducts a 360 degree evaluation process (using faculty, nurse managers, residents, and medical student evaluations) at the end of each quarter. Semi-annual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

Assessment Method (Program Evaluation)

Several methods are used to evaluate the effectiveness of this educational experience. In addition to the rotation evaluation, focus is centered in pre- and post-rotation knowledge mapping. Each resident completes a knowledge mapping tool based on the POSNA suggested curriculum at the beginning and end of their rotation. The data is compiled to help us refine the focus of our teaching to emphasize areas in which the residents feel a knowledge deficit.

Level of Supervision

Under supervision of the attending staff, residents will provide inpatient and outpatient care for children with pediatric orthopaedic disorders. Duties will include outpatient assessment, history, and physical examinations, pre and post operative ward care, supervised performance of surgical and non-surgical procedures, and participation in outpatient and outreach clinics.

Outpatient

a. **Supervision**
 Resident outpatient supervision is provided by the attending surgeon who is in attendance; all new cases are presented to the attending surgeon after a diagnosis and treatment plan is formulated by the resident. Additions and revisions are made as indicated after presentation to the attending surgeon. The resident conducts a timely review of all treatment plans for those patients with chronic problems and those patients being seen on a return basis.

b. **Progressive Responsibility**
 The resident is given the opportunity to assume increasing responsibility in the outpatient setting by allowing him/her to diagnose and manage patients based upon his experience and demonstrated competence. As experience and competence is demonstrated, the resident is given additional responsibilities in terms of the complexity of the case he is asked to diagnose and manage.

Inpatient

a. Supervision

Resident inpatient supervision is provided by the attending surgeon. All cases are supervised by the surgeons and the residents are required to evaluate the patient, establish a working diagnosis and formulate a treatment plan which is presented to the attending. The resident then follows his patient with the attending surgeon on a daily basis until the patient is discharged. Follow-up care is provided in the outpatient clinics.

b. Progressive Responsibility

Each resident is given the opportunity to assume increasing responsibilities on inpatients assigned to his care, based upon his/her level of experience and competence. Direct supervision is provided by appropriate attending surgeon during all phases of the educational process. The supervision role of the attending surgeon may diminish according to the abilities of the resident. The level of supervision is tailored to fit the needs of the particular resident and patient.

Operative

a. Supervision

Supervision in surgery is provided in all instances. The level of supervision by the attending surgeon may vary from case to case and is tailored to meet the needs of the patient and the resident, based upon the difficulty of the procedure and the experience and competence of the resident.

b. Progressive Responsibility

Progressive responsibilities are determined based upon the complexity of the case and the demonstrated competence of the resident. As experience and competence increases, the residents are allowed to perform those parts of the operation in which they demonstrate competence.

Educational Resources

Educational Conferences:

Weekly educational conferences include lectures, journal clubs, patient presentations, morbidity and mortality conferences, radiology conferences and a resident lecture series. Conferences are held in an auditorium equipped with a computer, presentation projection, video teleconferencing, x-ray view boxes, and other visual aids. Video teleconferencing is used 2-3 times per month for the Shriners Pediatric Orthopaedic Conferences between Shriners Hospitals for Children-Honolulu (SHCH) and the residents assigned to the Queen's Medical Center. A weekly radiology conference, conducted by a Radiologist, is held in the Radiology Department which is fully equipped with x-ray view boxes and a computer. Weekly resident lecture series is an informal series held in an open air setting.

Library Space/Resources:

The Medical Staff at SHCH have access to peer reviewed journals and textbooks 24/7, including on-line access to most journals and textbooks. Resources are housed in three locations: 1) Hospital Library, 2) Medical Staff Office and 3) Outpatient Department treatment area. Reference DVD, virtual textbooks/anatomy programs, SAE's and CDs are stored in a computer in the library for access to all residents. A video library which contains journals, recorded lectures, and technique videos is also available.

Research Support/Personnel/Space:

Full support is provided to residents for clinical research at SHCH. This includes three full-time Orthopaedic Staff Surgeons, one full-time Research Coordinator, one full-time Medical Photographer, one or more part-time Volunteers, and between one and six Medical Students assigned to research projects with the staff and orthopaedic residents. Each resident has a desk in the medical staff area.

SHCH has budgeted \$1,500 annually for resident presentation of their research at a national meeting. Shriners Hospitals has funding available to all hospital sites through their grant program. Residents may work with the SHCH Orthopaedic Staff as a co-Investigator in applying for such grants, including: 1) Planning Grants up to \$75,000 maximum, 2) Small Studies Grants up to \$67,000 maximum and 3) Project Grants up to \$500,000 maximum. There is \$5000 budgeted annually to support small research projects at the discretion of the medical staff without the necessity of formally applying for a grant.