# CURRICULUM GUIDE ORTHOPAEDICS 2014-2015

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Introduction & Program Overview

Welcome to the University of Hawaii Orthopaedic Residency Program! This Curriculum Guide should answer many of your questions about Program expectations and opportunities.

The Program operates in a community hospital system in which patients are admitted and treated by private surgical attending physicians. The Program Director is responsible for Program management, and delegates educational and administrative responsibilities to the Director of Orthopaedic Education or Institutional Site Coordinator at each participating hospital.

The training of orthopaedic residents takes place primarily in four affiliated Honolulu hospitals: Queen's Medical Center, Tripler Army Medical Center, Kapiolani Medical Center for Women and Children and Shriners Hospitals for Children-Honolulu. Residents assigned to clinical specialty rotations may accompany members of the teaching faculty to other facilities, including Kuakini Medical Center, Pali Momi Medical Center, and Straub Clinic & Hospital. The Physical Medicine and Rehabilitation rotation takes place at Harborview Medical Center at the University of Washington.

The Orthopaedic Residency Program seeks to prepare residents to become orthopaedic surgeons of the highest caliber by providing a rich educational experience in a variety of clinical settings. The three main program components: curriculum; research; and patient care are structured to offer the knowledge, skills, attitudes/behaviors, and clinical judgment needed for the practice of orthopaedic surgery.

The Orthopaedic Residency Program is dedicated to the development of competencies in the following areas:

1. **Patient Care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
2. **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.
3. **Practice-Based Learning and Improvement** that involves investigation and evaluation of one’s own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
4. **Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families and other health professionals.
5. **Professionalism**, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
6. **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 optimal value.
The following methods are used to assess residents learning and performance skills in the six general competencies:

1. **Focused Observation and Evaluation:**  
   *(Patient Care, Medical Knowledge, and Professionalism)*

   Attending physicians evaluate the technical skills and the professional conduct of the resident while in patient care settings; particularly in the Operating Room and Outpatient Clinics. The resident is evaluated bi-annually by attending physicians, and the Program Director. This evaluation is placed and maintained in the resident permanent file.

   The results are used for written and oral feedback to the resident; to track resident learning growth; and for promotion/progress decisions.

   This evaluation assesses the resident’s performance in the following areas: a) Pre-Operative Management of Patients; b) Performance in the O.R.; c) Post-Operative Management of Patients; d) Participation in Rounds and Conferences; e) Relationship with Peers, Attendings and Hospital Staff; f) Resident Strengths; g) Resident Weaknesses; and h) Assessment of the Resident’s Overall Performance, Attitude, and Deportment.

2. **360 Assessments:**  
   *(Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, and System-Based Practice)*

   Evaluations are completed by attending physicians, paraprofessional staff and residents on each rotation. Bi-annually, evaluations are reviewed by a group of attending physicians and the resident. This is used to determine the efficacy of our teaching methods and to determine the progress of the resident. When necessary, remedial steps are implemented.

   These results are used for written and oral feedback; individual resident education plans; to track resident learning/growth; promotion/progress decisions; assess program effectiveness; and make changes to the curriculum.

   Refer to item number one for evaluation criteria.

3. **General Performance Evaluation:**  
   *(Patient Care, Interpersonal & Communication Skills and Professionalism)*

   Written general performance evaluations are completed by residents for each rotation. These scored evaluations are reviewed by the attending staff and the residents. They are part of the resident’s permanent record.
The residents are evaluated by faculty/attending supervisors, other residents, and the nursing staff. The results are used for written and oral feedback and promotion/progress decisions.

Refer to item number one for evaluation criteria.

4. **Structured Case Discussion:**  
   *Patient Care and Medical Knowledge*

Cases are presented to the Program Director and attending staff twice weekly by the residents. Their evaluation and treatment plans are evaluated and discussed with direct feedback given at that time.

Results from this method are used in both written and oral feedback to track the resident’s learning and growth as a physician. Promotion and progress decisions are based upon these results.

5. **Standardized In-Training Exams:**  
   *Medical Knowledge*

The inservice examination (OITE) is administered once a year after several weeks of topic reviews and quizzes. The results of the exam serve as a general indication of the resident’s Orthopaedic knowledge. Low scores are likely to result in remedial learning sessions. Upon receipt of the test results and answers, discussion groups are run by the Chief Orthopaedic Residents to discuss the answers selected.

The results of this exam are used in both written and oral feedback.

6. **Review of Case or Procedure Log:**  
   *Patient Care and Medical Knowledge, Practice Based Learning and Improvement*

The tracking and recording of surgical cases (ACGME Case Log System) performed by the resident provides an assessment of the resident’s exposure and experience. During each rotation, a faculty/attending supervisor reviews the resident’s case log to ensure there is sufficient variety and volume to afford that the resident is receiving adequate experience in diagnosis and management of adult and pediatric Orthopaedic disorders.

This method is used to track resident learning/growth, assess program effectiveness and, if necessary, make changes to the curriculum.
7. **Review of Patient Chart/Record:**
   *(Patient Care, Medical Knowledge and Professionalism, Systems Based Practice)*

   Resident and attending performances are evaluated by Peer Review Committees and during Morbidity and Mortality Conferences. This information is communicated back to the resident by hospital administration and the Program Director. During each rotation, consultants or faculty/attending supervisors evaluate the written comments entered by the residents and provide oral feedback.

8. **Other – Research Evaluation:**
   *(Medical Knowledge and Professionalism)*

   Clinical and basic science research projects and the presentation of these projects, on an annual basis, are an integral part of this program. Research projects are closely followed by both the individual advisors and Director of Research. Resident performance is indicative of learning and professionalism.

   Residents are provided both written and oral feedback regarding their research projects. The projects are used to track learning/growth and in promotion/progress decisions regarding the resident.

   **The educational tenets of the Program are based on guidelines set forth by the American Board of Orthopaedic Surgery, which state:**

   *Orthopaedic surgery is the medical specialty that includes the preservation, investigation, and restoration of the form and function of the extremities, spine, and associated structures by medical, surgical, and physical methods.*

   **The following are the educational goals for each year of the residency, which define how the Program will help, the resident meet the definition stated above.**
The University of Hawaii Orthopaedic Residency Program
Educational Philosophy and Residency Training Goals

The years spent in an Orthopaedic residency program should prepare you to fulfill your personal and professional goals as an orthopaedic surgeon. The University of Hawaii Orthopaedic residency program is administered by the Hawaii Residency Programs, Inc., which oversees all non-military residency training in Hawaii.

Our program emphasizes early active (operative) participation by our residents, with gradually increasing levels of surgical and patient care responsibilities. The Hand Surgery, Sports Medicine, Total Joint, Pediatric and Spine services have fellowship trained faculty. Our strong didactic program consists of dedicated teaching days with conferences scheduled Monday afternoons and Tuesday mornings. On Tuesday afternoons, residents run our Queen Emma clinic which cares for the indigent. Attending coverage for the Queen Emma Clinic and resident surgical cases is mandatory. Wednesdays are started with Grand Rounds, or M&M conferences, presented by our chief residents. Surgical cases are covered Mondays, and Wednesdays through Fridays. Residents scrub on the main operating room and on same day cases. The clinical rotation schedule for the PGY-2 through PGY-5 years is included in this curriculum guide. The PGY-1 year consists of required general surgical rotations (General Surgery, Trauma, SICU), ACGME-mandated rotations for Orthopaedic residents (Plastic Surgery, Rheumatology and Neurosurgery), basic surgical skills training, and a six-month orthopaedic surgery rotation. You interact during your training with the Tripler Army residents during your PGY-2 through PGY-5 years at the Queen’s Medical Center and Tripler Army Medical Center. The Queen’s Medical Center runs a busy trauma service (level II), and serves as the trauma referral center for the state of Hawaii and the Pacific basin.
Our residents attend several out-of-state didactic and “hands on” educational courses during their training.

My personal educational philosophy emphasizes a collegial, non-threatening atmosphere where residents are given all the tools to become superior orthopaedic surgeons and researchers. We seek responsible, ethical residents with a superior work ethic and a desire to excel. Teaching responsibilities are gradually increased during your training. Summative performance evaluations are given after every rotation and formative feedback is provided frequently during all rotations.

By your PGY-5 year you will:

1. Be able to operate independently with minimal attending guidance.
2. Lecture to junior residents and medical students on a wide variety of orthopaedic topics
3. Run the Queen Emma Clinic service, as the Administrative Chief Resident
4. Critically evaluate the orthopaedic literature and effectively exchange information with patients, families and colleagues
5. Design and carry out clinical research projects
6. Provide excellent patient care that is compassionate, appropriate and effective.
7. Demonstrate a superior level of medical knowledge that is the foundation of excellence in medical care
8. Adhere to ethical principles and be sensitive to diverse patient population and cultures
9. Appraise and assimilate scientific evidence to improve your patient care practices

Your orthopaedic training will be a lifelong adventure. Good luck and thank you.

Robert E. Atkinson, M.D., Program Director, University of Hawaii Orthopaedic Residence Program
Orthopaedic Surgery
General Program Goals, Objectives, Implementation and Evaluation

Description of Program Goals and Objectives
In keeping with the American Board of Orthopaedic Surgery’s goals and ACGME requirements, at the end of five years of training in our program, a resident is expected to independently practice competent and caring orthopaedic surgery, with the highest standards of professionalism.

Training is competency based, and a resident is expected to achieve the following competencies:

Patient Care
Objectives
1. Respect the needs of patients and their families and provide orthopaedic care in accordance with those needs.
   Implementation: The multicultural nature of our community requires special attention to this. While a curricular approach to this aspect of training is difficult, guidance can be sought from senior residents and attending physicians.

2. Teach patients and their families about their orthopaedic disease states and health needs.
   Implementation: Before discharging a patient from hospital or clinic, remember to discuss their orthopaedic problems (fractured hip), and also the impact of comorbidities (osteoporosis). When outlining a treatment plan, always ask the patient if they understand, and if all their questions have been answered.

3. Develop experience in outpatient care, with continuity of care emphasized.
   Implementation: At Queens Medical Center (Trauma Service), evaluation of patients presenting through the emergency ward is ongoing. Efforts are made to have patients followed throughout their surgical course, including outpatient follow up. Preoperative work up of service patients is done on Tuesday afternoons, in Queen Emma Clinic. In addition, one half day is spent in the trauma attendings’ offices, seeing pre and postoperative patients.
   On subspecialty rotations (hand, spine, total joints, pediatrics, Straub Hospital, Shriners Hospital, Kapiolani Medical Center, Sports Medicine venues), operative experience is balanced with significant outpatient pre and postoperative patient contact (at least 3 half days of clinic per week).

Medical Knowledge
Objectives
1. Diagnose and manage orthopaedic disorders, based on a thorough knowledge of basic and clinical science, with emphasis on higher levels of evidence in the literature.
   Implementation: This will be achieved through daily interaction with your Senior Residents and Faculty at each of the participating sites (hospitals), with specific reference to your assigned patients.
   Focused reading centering on your patients, or a problem-based learning approach to their surgical disorders is emphasized. Basic Science conferences and all program-wide conferences will be directed toward clinical problems, but cannot replace the role of
patient-specific, problem-oriented reading. OITE exams are used as teaching tool. Preparation for the exam and self-assessment of missed items (questions) is part of the process. Didactic teaching is also an integral part of your acquisition of medical knowledge. “Resident as teacher” opportunities are provided throughout your training.

2. Demonstrate appropriate skill in those surgical techniques required of a qualified orthopaedic surgeon.
   
   **Implementation:** The large number of cases available and the devotion of our teaching faculty have produced very technically facile Chief Residents for many years. Paying close attention to the technical implementation of an operation while you are first or second-assisting is very helpful. In addition, gleaning technical advice from different faculty members in different settings will help you to develop your own “style” and approach. Residents are encouraged to include a computer based “techniques log”, as a part of their educational portfolio. These are reviewed twice a year.

3. Demonstrate the use of critical thinking when making decisions affecting the life, or quality of life, of a patient.
   
   **Implementation:** Thinking “out loud” in front of your Senior Resident or Faculty attending in the ICU, in the Emergency Room, in the Clinic, Operating Room, and so on. Ward rounds is helpful. Asking questions and keeping the lines of communication open is important in your growth and in our ability to evaluate you, and to assist you in your growth and development. Developing algorithms for complex problems is encouraged. Texts are recommended (e.g., Buholtz’s Orthopaedic Decision Making).

**Practice- Based Learning and Improvement**

**Objectives**

1. Make sound, ethical and legal judgments appropriate for a qualified orthopaedic surgeon.
   
   **Implementation:** Journal Club, which devotes several sessions each year specifically to ethical issues. Also, ethical issues are discussed routinely at Morbidity & Mortality Conferences and on teaching rounds at each of our participating Institutions. Participation occurs in hospital quality improvement measures.

2. Teach and share knowledge with colleagues, residents, students, and other health care providers.
   
   **Implementation:** The roles of teacher and “learner” are inseparable in medicine in general, and in surgery, specifically. Taking call with medical students and supervising junior residents will help to develop these skills at an early stage of your professional career.
   
   You as residents will develop these skills and emulate the teachers that you admire as you become more senior. Senior (chief) residents have significant opportunities to improve their knowledge base and teaching abilities during monthly M&M conferences, where literature reviews are emphasized.

3. Demonstrate acceptance of the value of life-long learning as a necessary prerequisite to maintaining orthopaedic surgical knowledge and skill.
Implementation: Again, our devotion to problem-based learning will become evident as time goes by. You must read about your patients’ illnesses and medical conditions. Setting goals and reviewing attainment of goals is a critical part of process. A formal (written) list of goals is required from each resident before the start of each subspecialty rotation.

4. Demonstrate a commitment to scholarly pursuits through the conduct and evaluation of research. 
   Implementation: The Program will help you to identify a mentor for clinical or basic science research. It is expected that every resident will be involved in at least one research project during their training, with the goal being the submission of either an abstract for presentation at a local, regional, or national meeting, or the submission of a manuscript to a peer-reviewed journal. The research resident is expected to produce one presentation suitable for a national meeting. Residents at the PGY-3 and PGY-5 levels are expected to present their research at the annual Hawaii Orthopaedic Association Spring Symposium.

### Interpersonal and Communication Skills

**Objectives**

1. Develop leadership, communication, and administrative skills. 
   Implementation: Being a chief resident requires the ability to delegate authority, make call schedules, communicate with administrators, faculty, and individuals in other fields of medicine. Again, the Program faculty teaches by example. Emulate those leaders, teachers and surgeons that you most admire.

2. Complete and maintain comprehensive, timely and legible medical records. This is your responsibility to your patients, the medical centers and the residency program. The program will have a mechanism in place for monitoring and evaluating this skill as well as providing timely formative feedback.

### Systems Based Practice

**Objectives**

1. Collaborate effectively with colleagues, nurses and other healthcare professionals. 
   Implementation: It is expected that you will observe the manner in which faculty attendings interact with their colleagues emulate their actions in the management of your patients by obtaining appropriate consultation, discussing your patients with nurses, physical and occupational therapists, prosthetists, and pharmacists routinely. Appropriate and timely use of consultants, and appropriate ordering of tests/procedures and blood products are taught and evaluated. Attendance at Queen’s Orthopaedic Surgery Department meetings aids in your knowledge of hospital systems and patient care improvement projects.

2. Provide cost-effective care to orthopaedic patients and families within the community. 
   Implementation: Remember that if a test is not going to affect what you do, it may not be worth ordering. You will be questioned routinely at Morbidity & Mortality Conferences, on daily Ward rounds by your Senior Residents and on teaching rounds at each of the
hospitals about the utility, or lack thereof, of tests, hospitalizations and operative indications.

**Professionalism**

**Objectives**

1. Professionalism encompasses an unwavering commitment to excellence, altruism, honesty, dependability and accountability to individual patients, colleagues and the greater society of healthcare providers/consumers. Residents must demonstrate an adherence to ethical principles and patient-centered care. Responsibility for continuity of care is also a key element of professionalism which residents must demonstrate.

   *Implementation*: Professionalism is taught primarily during clinical experiences, where role models’ behavior(s) can be adopted. Case narratives (illustrating an aspect of professionalism) are encouraged as part of the semi-annual portfolio presentation. Discussions of ethical dilemmas are included in Journal Club topics. Demonstration of consideration for medical ethics, strong sense of responsibility, and thoughtfulness and thoroughness in patient healthcare delivery are evaluated by faculty, nurse managers, and fellow residents.

2. Cultural competency is essential in Hawaii’s multicultural society. Residents will treat patients in a wide variety of settings and patients of all socio-economic levels. Residents are expected to provide quality medical care showing sensitivity to cultural, age, gender and disability issues of patients as well as of colleagues, including appropriate recognition and response to physician impairment.

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**Orthopaedic Surgery**

**Evaluation Mechanisms**

**Evaluation of Residents (Summative)**

The Program utilizes the web-based New Innovations Residency Management application for the storage of personnel data, the creation of rotation/block schedules and most importantly for the dissemination of the questionnaires used for the 360 degree residency program evaluation process. Program staff arrange for the timely distribution of evaluation materials and monitor compliance on the part of evaluators (faculty, resident, others). Evaluation instruments are made available to participants one week prior to the completion of a given rotation and reminder e-mails are generated by the New Innovations system once per week for two weeks post-rotation as needed. Delinquent evaluations are brought to the attention of administrative staff who notifies the Program Director. Communications at this level is taken outside of the automated New Innovations process and handled personally, by administrative staff. Because the program is relatively small, non-compliance is rarely an issue.

**Evaluation of Residents (Semi-Annual)**

Semiannual resident evaluation meetings are held in December and June of each academic year. Participants include the Program Director, faculty preceptors from rotations recently completed or in progress, the Program Administrator and residents. Materials reviewed include composite reports of resident 360 degree competency-based evaluations, milestones evaluations and case logs accumulated since the previous evaluation,
as well as information submitted by residents (as part of his/her portfolio; e.g., lectures given, morbidity and mortality presentations, patient evaluations, research projects, etc.). “Areas of Strength” and “Areas of Weakness” within the structure of the six competencies are covered, and recommendations to the resident based upon the competencies are made. This evaluative process determines an overall performance evaluation in competency-based format which is also documented on a written transcript (using a Likert scale) with a score of 1 (Poor) to 5 (Excellent) and whether the resident successfully completed the rotation(s). The Program Director produces a narrative of the evaluation proceedings which is then reviewed with the residents individually.

In addition to reviewing the narrative and the resident’s rotation scores, recent OITE results are also discussed. Personal and professional issues relating to morale are also discussed, as are future goals. Both the resident and the Program Director sign the semi-annual resident evaluation summary and it is placed in the resident file along with composite evaluation reports from New Innovations and ACGME case log printouts. Development and maintenance of resident portfolios is supported by residents, the Program Director and the administrative staff. Portfolios will be made available to the field staff.

PGY-1 residents, on the general surgery service (for 3-4 week blocks), are evaluated by faculty preceptors and senior residents of that program. These evaluations are provided to the Program Director and used as additional to the evaluations produced by the Orthopaedic program.

**Evaluation of Faculty/Senior Residents**

At the conclusion of each rotation or learning experience, residents are required to confidentially evaluate faculty who served as their preceptors (including senior residents if applicable). Additionally, residents are required to evaluate each rotation or learning experience which provides further data about faculty performance. The questionnaire for these evaluations is produced in and distributed by the New Innovations Residency Management application. The Program Administrator ensures that evaluations are made available and that residents complete the evaluation(s) of faculty and evaluation of rotation within two weeks of completion of the rotation.

**Evaluation of the Residency Program**

The program undergoes formative evaluation on a regular basis using the following methods: 1. PGY-2 through PGY-5 residents meet on a monthly basis to discuss issues of concern surrounding specific rotations and general matters. The Queen’s Medical Center Chief Resident addresses these matters and brings those of program-wide significance to the attention of the Program Director; 2. The Program Director conducts a dinner meeting with all residents (PGY-1 through PGY-5) two times per academic year. At this time each resident is asked specific questions about the nature of their current (and recent) rotations. General questions about the structure and the dynamics of the program are also addressed at this time. This is an ideal setting for evaluative inquiry as residents can be queried in a non-threatening environment to determine
the precise nature of any potential or ongoing matter of concern. The Program Director/Residents biannual dinner meeting is a valued mechanism for the evaluation and improvement of the program; 3. A confidential, summative evaluation of the program takes place at the conclusion of each academic year. All residents are required to evaluate the program confidentially, for its overall educational value, program conferences and didactics, the faculty as a whole, the workload, the night call schedule mechanism and the strengths/weaknesses of the program.
Orthopaedic Residency Program
Rotation Curricula, PGY 1-5

List of Institutions
1=[140429] Queen's Medical Center
2=[540405] Harborview Medical Center
3=[140371] Kapiolani Medical Center for Women and Children
4=[140425] Kuakini Medical Center
5=[140300] Shriners Hospitals for Children Honolulu
6=[140440] Straub Clinic & Hospital
7=[140426] Tripler Army Medical Center

The above rotation diagram represents requirements for all residents. There is some latitude in...
the chief year, for example a chief may request a one month elective in Foot and Ankle or Shoulder/Upper-Extremity (subject to Program Director approval and preceptor availability).

Competency-based guides for each rotation are contained in this curriculum guide which is updated annually. Prior to a specialty and subspecialty rotations, residents should read the appropriate curriculum guide carefully and be familiar with the rotation and its responsibilities. Before subspecialty rotations, residents are required to produce an enhanced list of goals and objectives specific to their own expected rotation experience. Prior to subspecialty rotations, residents are required to complete a rotation pre-test; following the rotation, completion of a post-test is required.

List of Rotations (PGY-2 through PGY-5)

- Adult Orthopaedic and Fracture/Trauma Service at Queen’s Medical Center
- Adult Orthopaedic and Fracture/Trauma Service at Tripler Army Medical Center
- Hand at Queen’s Medical Center
- Microvascular at Queen’s Medical Center
- Pediatric Orthopaedics at Kapiolani Women’s and Children’s Medical Center
- Pediatric Orthopaedics at Shriners Hospital for Children
- Bone & Joint Services at Straub Clinic & Hospital
  - Sports Medicine
  - Foot and Ankle Services
  - Minimally Invasive Total Joint Service
  - Shoulder and Elbow Service
- Physical Medicine and Rehabilitation at Harborview Medical Center
- Resident Research at JABSOM, Kaka’ako
- Spine at Queen’s Medical Center & Kuakini Medical Center
- Sports Medicine at Queen’s Medical Center
- Total Joint and Adult Reconstructive at Queen’s Medical Center
- Tumor/Oncology at Queen’s Medical Center
Typical Orthopaedic Resident Rotations and ABOS Requirements

Rotations

PGY-I: General Surgery
Multisystem Trauma
Plastic Surgery
Surgical Intensive Care
Neurosurgery
Rheumatology
Orthopaedics

PGY-II: Adult Orthopaedics, Fracture/Trauma

PGY-III: Fracture/Trauma
Clinical Specialties: Electives
Microvascular
Physical Medicine and Rehabilitation
Pediatric Orthopaedics – Kapiolani Medical Center
Research
Total Joint & Adult Reconstruction
Hand Surgery

PGY-IV: Pediatric Orthopaedics Shriners Hospital for Children Honolulu
Pediatric Orthopaedic Kapiolani Medical Center
Clinical Specialities: Sports Medicine

PGY-V: Adult Orthopaedics, Fracture/Trauma
(Chief)
Clinical Specialities: Hand & Spine Services

American Board of Orthopaedic Surgery Requirements

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<td>Additional Experiences **</td>
<td>12</td>
</tr>
<tr>
<td>TOTAL</td>
<td>60</td>
</tr>
</tbody>
</table>
Refer to the American Board of Orthopaedic Surgery website for specific requirements which must be met to sit for the ABOS Part 1 and Part 2. www.abos.org

**Content from the American Board of Orthopaedic Surgery Website**

1. **Requirements for postgraduate year one. (PGY-1)**

   The residency program director must be responsible for the design, implementation, and oversight of the PGY-1.

   Beginning July 1, 2014, the PGY-1 must include:

   1) Six months of structured education on non-orthopaedic surgery rotations designed to foster proficiency in basic surgical skills, the perioperative case of surgical patients, musculoskeletal image interpretation, medical management of patients, and airway management skills.

   A. At least three months must be on surgical rotations chosen from the following: general surgery, general surgery trauma, plastic/burn surgery, surgical or medical intensive care, and vascular surgery.

   B. The additional three months must be on rotation chosen from the following: anesthesiology, basic surgical skills, emergency medicine, general surgery, general surgery trauma, internal medicine, medical or surgical intensive care, musculoskeletal radiology, neurological surgery, pediatric surgery, physical medicine and rehabilitation, plastic/burn surgery, rheumatology, and vascular surgery.

   C. During the six months of non-orthopaedic rotations, each rotation must not exceed 2 months.

2. Six months of orthopaedic surgery rotations designed to foster proficiency in basic surgical skills, the general care of orthopaedic patients both as inpatients and in the outpatient clinics, the management of orthopaedic patients in the emergency department, and the cultivation of an orthopaedic knowledge base.

3. Formal instruction in basic surgical skills which may be provided longitudinally or as a dedicated rotation during either the orthopaedic or non orthopaedic rotations. This skills training must be designed to integrate with skills training in subsequent post graduate years and should prepare the PGY-1 resident to participate in orthopaedic surgery cases. To facilitate skills training there must be:

   a) goals and objectives and assessment metrics;

   b) skills used in the initial management of injured patients, including splinting, casting, application of traction devices, and other types of immobilization; and basic operative skills, including soft tissue management, suturing, bone management, arthroscopy, fluoroscopy, and use of basic orthopaedic equipment.
A. Program directors may transition to these requirements beginning July 1, 2013.

2. Orthopaedic requirements beyond the PGY-1.

   a) Minimum distribution. Orthopaedic education must be broadly representative of the entire field of orthopaedic surgery. The minimum distribution of educational experience must include:
      (1) 12 months of adult orthopaedics
      (2) 12 months of fractures/trauma
      (3) Six months of children’s orthopaedics
      (4) Six months of basic and/or clinical specialties

      Experience may be received in two or more subject areas concurrently. Concurrent or integrated programs must allocate time by proportion of experience.

   b) Scope. Orthopaedic education must provide experience with all of the following:
      (1) Children’s orthopaedics. The educational experience in children’s orthopaedics must be obtained either in an accredited position in the specific residency program in which the resident is enrolled or in a children’s hospital in an assigned accredited residency position.
      (2) Anatomic areas. All aspects of diagnosis and care of disorders affecting the bones, joints, and soft tissues of the upper and lower extremities, including the hand and foot; the entire spine, including intervertebral discs; and the bony pelvis.
      (3) Acute and chronic care. Diagnosis and care, both operative and nonoperative, of acute trauma (including athletic injuries), infectious disease, neurovascular impairment, and chronic orthopaedic problems including reconstructive surgery, neuromuscular disease, metabolic bone disease, benign and malignant tumors, and rehabilitation.
      (4) Related clinical subjects. Musculoskeletal imaging procedures, use and interpretation of clinical laboratory tests, prosthetics, orthotics, physical modalities and exercises, neurological and rheumatological disorders and medical ethics.
      (5) Research. Exposure to the evaluative sciences, clinical and/or laboratory research.
      (6) Basic science. Instruction in anatomy, biochemistry, biomaterials, biomechanics, microbiology, pathology, pharmacology, physiology, and other basic sciences related to orthopaedic surgery. The resident must have the opportunity to apply these basic sciences to all phases of orthopaedic surgery.

   c) Options. Twelve months of the four required years under the direction of the orthopaedic surgery residency program director may be spent on services consisting
partially or entirely of:

(1) Additional experience in general adult or children’s orthopaedics or fractures/trauma.

(2) An orthopaedic clinical specialty.

(3) Orthopaedics-related research.

(4) Experience in a graduate medical education program whose educational content is pre-approved by the director of the orthopaedic surgery residency program.
Summary of Training by Program Year PGY-1 through PGY-5

Description of Experience by PGY

PGY-I: The resident’s first year of training includes 6 months on the General Surgery Service and in non-Orthopaedic electives. Rotations include general surgery, multisystems trauma, plastic surgery, surgical intensive care, neurosurgery, rheumatology, and surgical skills training at various affiliated hospitals in Honolulu. (Competency-based curriculum guides for required PGY-1 orthopaedic rotations are available in this document).

PGY-II: The resident’s second year of orthopaedic training includes twelve months of adult traumatic and reconstructive surgery at the Queen’s Medical Center. The PGY-2 will have a one-month subspecialty rotation “break”; Hand at Queens or Total Joints at Straub. This opportunity seems to alleviate burnout and provides the PGY-3 some trauma continuity. The resident has on call duty approximately every fourth night. PGY-II residents work closely with the Chief Resident and the attending physicians. Physician extenders (PAs) are available to assist – this ensures that the resident experience maintains a high education over service value.

PGY-III: The resident’s third year of orthopaedic training includes one month at Harborview Medical Center in Seattle. This training involves adult reconstruction, foot surgery and rehabilitation as related to spinal cord injury, traumatic brain injury, stroke, amputation and other neuromuscular conditions. A four-month rotation is spent at Tripler Army Medical Center where the resident is exposed to extensive outpatient orthopaedics, including fracture and trauma, and microvascular lab training. Three months of training are spent on the Total Joint and Adult Reconstruction Service at Queen’s Medical Center. One month is spent with a pediatric orthopaedist in private practice at Kapiolani Medical Center for Women and Children and one month on the Hand Service (at Queen’s). One month is spent on the Queen’s trauma service while PGY-2’s are on subspecialty rotations (see PGY-2). The final two months are spent on resident research or elective rotations, including rotations at host institutions outside of Hawaii Residency Programs (Program Director and DIO approval is required).

PGY-IV: The resident’s fourth year of orthopaedic training includes four months of pediatric orthopaedics at Shriners Hospital for Children, two months of pediatric orthopaedics at Kapiolani Women’s and Children’s Medical Center and a six-month sports medicine rotation under the direction of attending physicians.

PGY-V: The resident’s final year of orthopaedic training, as Chief Resident, includes six months on the General Orthopaedic Service at Queen’s Medical Center and three months on both the Hand and Spine Services. The Chief Residents assume administration of specific program functions and total patient care responsibility for clinic patients under the direction of the Program Director.
The Orthopaedic Surgery Milestone Project

A Joint Initiative of
The Accreditation Council for Graduate Medical Education
and
The American Board of Orthopaedic Surgery

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The Orthopaedic Surgery Milestone Project

The milestones are designed only for use in evaluation of resident physicians in the context of their participation in ACGME-accredited residency or fellowship programs. The milestones provide a framework for the assessment of the development of the resident physician in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.
Orthopaedic Surgery Milestones

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*Acknowledgements: Special thanks to Stephen Albanese, MD and Shepard R. Hurwitz, MD, who were active members of both the Working and Advisory Groups.
Milestone Reporting

This document presents milestones designed for programs to use in semi-annual review of resident performance and reporting to the ACGME. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME competencies organized in a developmental framework from less to more advanced. They are descriptors and targets for resident performance as a resident moves from entry into residency through graduation. In the initial years of implementation, the Review Committee will examine milestone performance data for each program’s residents as one element in the Next Accreditation System (NAS) to determine whether residents overall are progressing.

For each period, review and reporting will involve selecting milestone levels that best describe each resident’s current performance and attributes. Milestones are arranged into numbered levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert. These levels do not correspond with post-graduate year of education.

Selection of a level implies that the resident substantially demonstrates the milestones in that level, as well as those in lower levels (see the diagram on page v).

**Level 1:** The resident demonstrates milestones expected of an incoming resident.

**Level 2:** The resident is advancing and demonstrates additional milestones, but is not yet performing at a mid-residency level.

**Level 3:** The resident continues to advance and demonstrate additional milestones, consistently including the majority of milestones targeted for residency.

**Level 4:** The resident has advanced so that he or she now substantially demonstrates the milestones targeted for residency. This level is designed as the graduation target.

**Level 5:** The resident has advanced beyond performance targets set for residency and is demonstrating “aspirational” goals which might describe the performance of someone who has been in practice for several years. It is expected that only a few exceptional residents will reach this level.
Additional Notes

Level 4 is designed as the graduation target but does not represent a graduation requirement. Making decisions about readiness for graduation is the purview of the residency program director. Study of milestone performance data will be required before the ACGME and its partners will be able to determine whether milestones in the first four levels appropriately represent the developmental framework, and whether milestone data are of sufficient quality to be used for high-stakes decisions.

Examples are provided with some milestones. Please note that the examples are not the required element or outcome; they are provided as a way to share the intent of the element.

Some milestone descriptions include statements about performing independently. These activities must occur in conformity to the ACGME supervision guidelines, as well as institutional and program policies. For example, a resident who performs a procedure independently must, at a minimum, be supervised through oversight.

Answers to Frequently Asked Questions about the NAS and milestones are available on the ACGME’s NAS microsite: http://www.acgme-nas.org/assets/pdf/NASFAQs.pdf.
The diagram below presents an example set of milestones for one sub-competency in the same format as the milestone report worksheet. For each reporting period, a resident’s performance on the milestones for each sub-competency will be indicated by:

- Selecting the level of milestones that best describes that resident’s performance in relation to the milestones
- For Patient Care and Medical Knowledge milestones, selecting the option that says the resident has “Not yet rotated”
- For Interpersonal and Communication Skills, Practice-based Learning and Improvement, Professionalism, and Systems-based Practice, selecting the option that says the resident has “Not yet achieved Level 1”

Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.

Selecting a response box on the line in between levels indicates that milestones in lower levels have been substantially demonstrated as well as some milestones in the higher level(s).
Anterior Cruciate Ligament (ACL) – Medical Knowledge

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
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</thead>
<tbody>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to ACL injury (e.g., mechanisms of injury)</td>
<td>• Understands pathophysiology of concomitant injuries (e.g., secondary restraints of knee [PL Corner])</td>
<td>• Demonstrates knowledge of current literature and alternative treatments</td>
<td>• Understands rehabilitation mechanics (e.g., phases of rehabilitation, closed versus open chain exercises)</td>
<td>• Primary author/presenter of original work within the field</td>
</tr>
<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies</td>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies</td>
<td>• Understands biomechanics of the knee and biomechanics of implant choices</td>
<td>• Understands controversies within the field (e.g., graft type, brace treatment, surgical technique and fixation, surgical techniques to include skeletally immature knee)</td>
<td>• Understands how to prevent/avoid potential complications</td>
</tr>
<tr>
<td>• Has knowledge of natural history of ACL injury</td>
<td>• Ability to grade instability (e.g., translations grade and end point)</td>
<td>• Understands the effects of intervention on natural history of ACL injury</td>
<td>• Applies understanding of natural history to clinical decision-making</td>
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</tr>
<tr>
<td>• Demonstrates knowledge of ACL injury anatomy and basic surgical approaches (e.g., ACL bundles)</td>
<td>• Understands basic pre-surgical planning and templating</td>
<td>• Understands alternative surgical approaches (e.g., miniopen, 2 incision)</td>
<td>• Understands how to prevent/avoid potential complications</td>
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<tr>
<td></td>
<td>• Understands advantages and disadvantages of graft types</td>
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</table>

Comments: Not yet rotated
## Anterior Cruciate Ligament (ACL) – Patient Care

<table>
<thead>
<tr>
<th>Level 1</th>
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<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Obtains history and performs basic physical exam (e.g., age, gender, history of present illness [HPI], past medical history [PMHx], social history, range of motion, effusion, neurovascular status)</td>
<td>• Obtains focused history and performs focused exam (e.g., mechanism of injury, past knee history, past treatments, Lachman, anterior drawer, pivot shift, meniscal pain)</td>
<td>• Recognizes concomitant associated injuries (e.g., lateral collateral ligament [LCL], multi ligament, osteochondritis dissecans [OCD], posterior cruciate ligament [PCL], collateral ligaments, posterolateral corner instability, reverse pivot shift)</td>
<td>• Performs graft passage and fixation</td>
<td>• Performs revision/transphyseal ACL reconstruction (e.g., hardware removal, outside in drilling techniques)</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies (e.g., knee radiographs)</td>
<td>• Appropriately interprets basic imaging studies (e.g., alignment, joint space, patella alignment)</td>
<td>• Appropriately orders and interprets advanced imaging studies (e.g., standing views, magnetic resonance imaging [MRI], Segond fracture, bone bruising)</td>
<td>• Capable of treating complications both intraoperatively and post-operatively (e.g., graft harvest failure, tunnel malposition, chondral injury)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments (e.g., range of motion [ROM], weight-bearing [WB] status)</td>
<td>• Prescribes and manages non-operative treatment (e.g., closed chain quad strengthening)</td>
<td>• Provides complex non-operative treatment (e.g., WB status, bracing as appropriate, vascular studies)</td>
<td>• Surgically treats complex complications</td>
<td></td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., neurovascular status, brace, WB status)</td>
<td>• Completes pre-operative planning with instrumentation, graft selection and implants</td>
<td>• Completes comprehensive pre-operative planning with alternatives</td>
<td>• Performs diagnostic arthroscopy, notchplasty, and/or graft harvest</td>
<td></td>
</tr>
<tr>
<td>• Lists potential complications (e.g., infection, loss of motion, graft failure, neurovascular compromise)</td>
<td>• Examines injury under anesthesia (e.g., complete ligament examination)</td>
<td>• Performs post-operative management and rehabilitation (e.g., WB status, brace, ROM, quad strength)</td>
<td>• Modifies and adjusts post-operative treatment plan as needed (e.g., loss of knee motion treatment, sport specific drills, return to sport)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Provides post-operative management and rehabilitation (e.g., WB status, brace, ROM, quad strength)</td>
<td>• Capable of diagnosis and early management of complications (e.g., graft failure, tunnel placement)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Capable of diagnosis and early management of complications (e.g., graft failure, tunnel placement)</td>
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**Comments:**

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## Ankle Arthritis – Medical Knowledge

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
</table>
| • Demonstrates knowledge of pathophysiology related to ankle/mid-foot/hind-foot arthritis  
• Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., osteophyte formation, joint narrowing, subchondral cysts and sclerosis)  
• Demonstrates basic knowledge of natural history of ankle/mid-foot/hind-foot arthritis  
• Demonstrates knowledge of gait mechanics (e.g., phases of gait) and normal limb alignment  
• Demonstrates knowledge of ankle/mid-foot/hind-foot arthritis anatomy and basic surgical approaches (e.g., anterior, lateral-transfibular)  
• Demonstrates knowledge of non-operative treatment options and surgical indications | • Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., bone loss, articular deformity, subluxation)  
• Understands the effects of intervention on natural history of ankle/mid-foot/hind-foot arthritis (e.g., effects of NSAIDs, steroid injections, brace, rocker bottom shoes)  
• Demonstrates knowledge of abnormal gait mechanics of ankle/mid-foot/hind-foot arthritis (e.g., antalgic gait, circumduction, decreased stance) and abnormal limb alignment and adjacent joint function  
• Understands alternative surgical approaches (e.g., posterior, posterolateral, posteromedial)  
• Understands basic pre-surgical planning and templating  
• Understands non-operative treatment options and surgical indications | • Demonstrates knowledge of current literature and alternative treatments (e.g., non-operative, cheilectomy, fusion, replacement, distraction)  
• Understands abnormal gait mechanics of ankle/mid-foot/hind-foot arthritis (e.g., identifies abnormal gait patterns in patient)  
• Applies general understanding of non-operative treatment options and surgical indications | • Understands controversies within the field  
• Applies understanding of natural history to clinical decision-making (e.g., considers patient-specific characteristics of disease to select most appropriate treatment)  
• Applies biomechanics to implant and procedure selection | • Primary author/presenter of original work within the field |

**Comments:**

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### Ankle Arthritis – Patient Care

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<tr>
<th>Level 1</th>
<th>Level 2</th>
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<th>Level 4</th>
<th>Level 5</th>
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</thead>
<tbody>
<tr>
<td>• Obtains history and performs basic physical exam</td>
<td>• Obtains focused history and performs focused exam and gait analysis</td>
<td>• Appropriately orders and interprets advanced imaging studies/lab studies</td>
<td>• Provides patient specific non-operative treatment (e.g., diagnostic injections)</td>
<td>• Performs complex surgical approaches and reconstruction to the ankle/mid-foot/hind-foot arthritis (e.g., posterior, posterolateral, posteromedial)</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies (e.g., three weight-bearing views)</td>
<td>• Appropriately interprets basic imaging studies</td>
<td>• Completes comprehensive pre-operative planning with alternatives</td>
<td>• Capable of performing straight forward ankle/mid-foot/hind-foot reconstruction such as Tarsometatarsal joint arthrodesis, tarsal joint arthrodesis, triple, talonavicular or subtalar joint arthrodesis and ankle fusion (e.g., with minimal deformity or bone defect)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments</td>
<td>• Prescribes and manages non-operative treatment (e.g., non-steroidal anti-inflammatory drugs [NSAIDs], steroid injections, brace, rocker bottom shoes)</td>
<td>• Modifies and adjusts post-operative treatment plan as needed</td>
<td>• Surgically treats complex complications (e.g., incision and drainage [I&amp;D])</td>
<td>• Surgically treats complex complications (e.g., nonunion, malunion)</td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., pre- and post-operative orders, labs, consults)</td>
<td>• Completes pre-operative planning with instrumentation and implants</td>
<td>• Performs one basic surgical approach to the ankle/mid-foot/hind-foot arthritis (e.g., anterior or lateral transfibular)</td>
<td>• Performs complex surgical approaches and reconstruction to the ankle/mid-foot/hind-foot arthritis (e.g., posterior, posterolateral, posteromedial)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Lists potential complications</td>
<td>• Performs post-operative management and rehabilitation (e.g., prothrombin time [PT] orders with goals and restrictions)</td>
<td>• Capable of diagnosis and early management of complications (e.g., wound healing problems, infection, deep vein thrombosis [DVT])</td>
<td>• Capable of surgically treating simple complications (e.g., incision and drainage [I&amp;D])</td>
<td>• Surgically treats complex complications (e.g., nonunion, malunion)</td>
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### Ankle Fracture – Medical Knowledge

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<th>Level 1</th>
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<tbody>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to ankle fractures</td>
<td>• Demonstrates ability to describe and classify fractures</td>
<td>• Demonstrates knowledge of current literature and alternative treatments</td>
<td>• Understands controversies within the field (e.g., syndesmotic fixation, indications and options)</td>
<td>• Primary author/presenter of original work within the field</td>
</tr>
<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies</td>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies</td>
<td>• Understands the effects of intervention on natural history of ankle fractures</td>
<td>• Applies understanding of natural history to clinical decision-making</td>
<td>• <strong>Not yet rotated</strong></td>
</tr>
<tr>
<td>• Demonstrates knowledge of non-operative treatment options and surgical indications</td>
<td>• Demonstrates basic knowledge of natural history of ankle fractures</td>
<td>• Understands alternative surgical approaches</td>
<td>• Understanding of biomechanics and implant choices</td>
<td></td>
</tr>
<tr>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies</td>
<td>• Demonstrates knowledge of ankle fractures anatomy and basic surgical approaches</td>
<td>• Understands basic pre-surgical planning and templating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Understands implication of open fractures and soft tissue injury</td>
<td>• Demonstrates knowledge of ankle fractures anatomy and basic surgical approaches</td>
<td>• Understands implication of open fractures and soft tissue injury</td>
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<thead>
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<th>Ankle Fracture – Patient Care</th>
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<tbody>
<tr>
<td><strong>Level 1</strong></td>
</tr>
<tr>
<td>• Obtains history and performs basic physical exam</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments</td>
</tr>
<tr>
<td>• Splints fracture appropriately</td>
</tr>
<tr>
<td>• Provides basic peri-operative management</td>
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<tr>
<td>• Lists potential complications</td>
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<tbody>
<tr>
<td>• Understands the anatomy of carpal tunnel/median nerve</td>
<td>• Demonstrates knowledge of the differential diagnosis of neuropathic surgery (e.g., pronator syndrome, cubital tunnel, thoracic outlet, cervical radiculopathy, peripheral neuropathy)</td>
<td>• Demonstrates knowledge of current literature and alternatives to surgery</td>
<td>• Understands complications of surgical management (e.g., location of median nerve [MN] with respect to superficial arch, recurrent motor branch, palmar cutaneous branch, Guyon's canal)</td>
<td>• Primary author/presenter of original work within the field</td>
</tr>
<tr>
<td>• Understands the normal physiology of the median nerve</td>
<td>• Understands risk factors associated with Carpal Tunnel Syndrome (CTS) (e.g., diabetes, inflammatory arthritis, pregnancy, hypothyroidism)</td>
<td>• Understands the capabilities and limitations of electrodiagnostic studies</td>
<td>• Understands influence of comorbidities</td>
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</tr>
<tr>
<td>• Demonstrates knowledge of median nerve motor/sensory distribution, thumb abduction, thenar numbness, anterior interosseous nerve (AIN) weakness, cervical radiculopathy</td>
<td>• Demonstrates knowledge of median nerve motor/sensory distribution, thumb abduction, thenar numbness, anterior interosseous nerve (AIN) weakness, cervical radiculopathy</td>
<td>• Demonstrates knowledge of current literature and alternatives to surgery</td>
<td>• Understands the capabilities and limitations of electrodiagnostic studies</td>
<td></td>
</tr>
<tr>
<td>• Understands natural history of CTS</td>
<td>• Understands natural history of CTS</td>
<td>• Demonstrates knowledge of current literature and alternatives to surgery</td>
<td>• Understands the capabilities and limitations of electrodiagnostic studies</td>
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</tr>
<tr>
<td>• Understands natural history of CTS</td>
<td>• Understands natural history of CTS</td>
<td>• Demonstrates knowledge of current literature and alternatives to surgery</td>
<td>• Understands the capabilities and limitations of electrodiagnostic studies</td>
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<tr>
<td>• Understands the pathophysiology of nerve compression (e.g., increased carpal tunnel pressure, nerve ischemia)</td>
<td>• Understands the pathophysiology of nerve compression (e.g., increased carpal tunnel pressure, nerve ischemia)</td>
<td>• Understands the pathophysiology of nerve compression (e.g., increased carpal tunnel pressure, nerve ischemia)</td>
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<tr>
<td>• Understands surgical options (e.g., open, endoscopic)</td>
<td>• Understands surgical options (e.g., open, endoscopic)</td>
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</tr>
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<tbody>
<tr>
<td>• Obtains basic history and performs basic physical exam</td>
<td>• Obtains focused history, including identifying night pain, paresthesias</td>
<td>• Evaluates other sites of MN compression (e.g., pronator syndrome, cervical radiculopathy)</td>
<td>• Performs Carpal Tunnel Release (CTR) (e.g., open or endoscopic)</td>
<td>• Capable of surgical management of major complications (e.g., injury to superficial arch, ulnar artery, branches of median nerve, or median nerve)</td>
</tr>
<tr>
<td>• Lists potential surgical complications (e.g., infection, scar sensitivity, neurovascular injury)</td>
<td>• Performs median nerve motor/sensory evaluation (e.g., MN numbness, thumb abduction)</td>
<td>• Interprets electrodiagnostic tests</td>
<td>• Capable of treating simple complications (e.g., infection, wound healing)</td>
<td>• Capable of opposition transfer (e.g., palmaris longus, extensor indicis pollicis [EIP], or flexor digitorum superficialis [FDS])</td>
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<td></td>
<td>• Performs provocative maneuvers (e.g., Tinel, Phalen, MN compression test)</td>
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<td>• Capable of performing complex postoperative management (e.g., worsening numbness, worsening pain, additional radiating symptoms)</td>
<td>• Capable of performing revision carpal tunnel surgery</td>
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<td>• Appropriately considers electrodiagnostic test</td>
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<td>• Prescribes non-operative treatments (e.g., night splints, steroid injection when appropriate)</td>
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<td>• Capable of diagnosing surgical complications (e.g., injury to the median nerve or its branches and vascular injury)</td>
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<td>• Provides simple post-operative management and rehabilitation</td>
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## Degenerative Spinal Conditions – Medical Knowledge

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<tbody>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to lumbar and cervical degenerative conditions</td>
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<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., cervical or lumbar radiographs)</td>
</tr>
<tr>
<td>• Demonstrates knowledge of physical exam of cervical and lumbar spine and related neurologic and provocative signs</td>
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<tr>
<td>• Demonstrates knowledge of general peri-operative patient care</td>
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<tr>
<td>• Describes specific clinical syndromes of lumbar and cervical degenerative conditions (e.g., radiculopathy from herniated nucleus pulposus [HNP] vs. stenosis vs. spondylolisthesis, back pain, cervical radiculopathy, or myelopathy)</td>
</tr>
<tr>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., magnetic resonance imaging [MRI], Myelogram/CT)</td>
</tr>
<tr>
<td>• Demonstrates knowledge of biological theories of pain generation</td>
</tr>
<tr>
<td>• Demonstrates knowledge of natural history of lumbar and cervical degenerative conditions</td>
</tr>
<tr>
<td>• Demonstrates knowledge of anatomic changes resulting from lumbar and cervical degenerative disorders and basic surgical approaches (e.g., anterior cervical, posterior cervical or lumbar)</td>
</tr>
<tr>
<td>• Demonstrates knowledge of basic presurgical planning and criteria for acceptable intra-operative result for simple primary cases (e.g., laminotomy for herniated nucleus pulposus [HNP], single-level anterior cervical discotomy and fusion [ACDF])</td>
</tr>
<tr>
<td>• Demonstrates knowledge of nonoperative treatment options</td>
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<tr>
<td>• Demonstrates knowledge of current literature and alternative treatments</td>
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<tr>
<td>• Demonstrates knowledge of biology of fusion healing</td>
</tr>
<tr>
<td>• Demonstrates knowledge of the effects of intervention on natural history of lumbar and cervical degenerative conditions</td>
</tr>
<tr>
<td>• Demonstrates knowledge of alternative surgical approaches, complications of approaches</td>
</tr>
<tr>
<td>• Demonstrates knowledge of presurgical planning and criteria for acceptable intra-operative result for cases of moderate complexity (e.g., spondylolisthesis, multi-level decompression and fusion)</td>
</tr>
<tr>
<td>• Demonstrates knowledge of surgical indications</td>
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<td>• Demonstrates knowledge of basic implant choices</td>
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<tr>
<td>• Demonstrates knowledge of controversies within the field (e.g., epidural blocks, arthroplasty vs. fusion, and fusion techniques)</td>
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<tr>
<td>• Demonstrates knowledge of cervical and lumbar biomechanics and alterations by decompression or implants</td>
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<tr>
<td>• Demonstrates knowledge of influence of natural history and comorbidity on clinical decision-making</td>
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<tr>
<td>• Demonstrates knowledge of alternative implant choices/biomaterials</td>
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<td>• Primary author/presenter of original work within the field</td>
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<tr>
<td>• Obtains history and performs basic physical exam</td>
<td>• Obtains focused history and performs focused exam; appropriately interprets neurological exam</td>
<td>• Extends examination to non-spinal differential diagnostic possibilities (vascular claudication, hip arthritis, etc.)</td>
<td>• Provides complex non-operative treatment (e.g., individualized care, shared decision making, comprehensive informed consent)</td>
<td>• Completes comprehensive pre-operative planning with alternatives and criteria for acceptable intra-operative result for highly complex cases (e.g., revision surgery)</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies</td>
<td>• Appropriately interprets basic imaging studies</td>
<td>• Appropriately orders and interprets advanced imaging studies (MRI, myelogram, CT); correlates clinical and imaging findings to form clinical diagnosis</td>
<td>• Recommends appropriate surgical procedures considering indications and contraindications, risks and benefits for complex cases (e.g., multi-level stenosis with deformity)</td>
<td>• Capable of performing decompression, posterior lumbar interbody fusion (PLIF), transforaminal lumbar interbody fusion (TLIF), places complex implants (e.g., fusion cages, pedicle screws)</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments: non-steroidal anti-inflammatory drugs (NSAIDs), rehabilitation, initiates basic care</td>
<td>• Assists in exposure for anterior and posterior cervical spine, posterior lumbar spine, performs closure</td>
<td>• Prescribes and manages non-operative treatment: injections, referrals to other professionals</td>
<td>• Completes comprehensive pre-operative planning with alternatives and criteria for acceptable intraoperative result for straightforward cases (single-level HNP)</td>
<td>• Develops unique complex post-operative management plans when indicated</td>
</tr>
<tr>
<td>• Recognizes indications for and initiates immediate additional work-up (&quot;Red Flags&quot;) or urgent surgical care (progressive deficit, cauda equina syndrome)</td>
<td>• Provides procedure and patient specific post-operative management and rehabilitation</td>
<td>• Recommends appropriate surgical procedures considering indications and contraindications, risks and benefits for simple cases (e.g., single-level HNP with radiculopathy)</td>
<td>• Capable of performing anterior and posterior cervical, posterior lumbar surgical exposure, assisting with implant placement</td>
<td>• Capable of surgical treatment of complex complications when indicated</td>
</tr>
<tr>
<td>• Provides basic/general peri-operative management</td>
<td>• Capable of diagnosis and early management of complications</td>
<td>• Completes comprehensive pre-operative planning with alternatives and criteria for acceptable intraoperative result for complex cases (e.g., multi-level stenosis with deformity)</td>
<td>• Capable of decomplicating for postolateral fusion, placing grafts</td>
<td>• Capable of surgical treatment of complex complications (e.g., drainage of hematoma, debridement of infection)</td>
</tr>
<tr>
<td>• Lists potential complications</td>
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<td>• Modifies and adjusts post-operative treatment plan according to clinical situation (e.g., modifies for comorbid conditions or complications)</td>
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<td>• Capable of treating simple complications both intra- and post-operatively (e.g., medical complications, hemostasis)</td>
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<tr>
<th>Diabetic Foot – Medical Knowledge</th>
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<tbody>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to Diabetes mellitus (e.g., neuropathy, retinopathy, renal disease, peripheral vascular disease)</td>
<td>• Understands diabetic foot conditions and staging systems (e.g., infection vs. Charcot, Eichenholz classification)</td>
<td>• Demonstrates knowledge of current literature and alternative treatments (e.g., debridement, off-loading, immobilization)</td>
<td>• Understands controversies within the field (e.g., non-operative vs. operative management of osteomyelitis)</td>
<td>• Primary author/presenter of original work within the field</td>
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<tr>
<td>• Knowledge of medical management of Diabetes mellitus (e.g., glycemic control, diabetic diet)</td>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., x-ray signs of osteomyelitis, Charcot changes)</td>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., CT and MRI signs of osteomyelitis)</td>
<td>• Applies understanding of natural history to patient-specific clinical decision-making</td>
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<tr>
<td>• Demonstrates some knowledge of natural history of Diabetes mellitus</td>
<td>• Demonstrates some knowledge of diabetic foot conditions (neuropathic ulcer risk factors) and the effects of intervention (e.g., offloading and immobilization for Charcot, debridement and antibiotics for infection)</td>
<td>• Demonstrates some knowledge of abnormal gait mechanics and limb alignment and adjacent joint function, diabetic shoe wear and orthotics (e.g., apropulsive gait, antalgic gait, loss of proprioception and balance)</td>
<td>• Understands alternative surgical approaches (e.g., Plantar approach, complex amputations of the foot)</td>
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<tr>
<td>• Demonstrates knowledge of foot anatomy</td>
<td>• Demonstrates some knowledge of gait mechanics (e.g., phases of gait and normal limb alignment)</td>
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<td>• Demonstrates knowledge of basic surgical approaches (e.g., dorsomedial and dorsolateral approaches, amputations of the foot)</td>
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<td>• Understands basic pre-surgical planning</td>
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<tr>
<td></td>
<td>• Demonstrates knowledge of non-operative treatment options and surgical indications</td>
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<td>• Understands basic science of wound healing</td>
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Diabetic Foot – Patient Care

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<tbody>
<tr>
<td>• Obtains history and performs basic physical exam</td>
<td>• Obtains focused history and performs focused exam</td>
<td>• Appropriately orders and interprets advanced imaging studies (e.g., CT and MRI with or without contrast)</td>
<td>• Provides complex non-operative treatment (e.g., multiple co-morbidities, non-compliant, etc.)</td>
<td>• Develops unique, complex post-operative management plans</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies (e.g., three or four weight-bearing views of the foot)</td>
<td>• Appropriately interprets basic imaging studies</td>
<td>• Completes comprehensive pre-operative planning with alternatives for limb salvage (e.g., revascularization combined with reconstruction)</td>
<td>• Capable of performing alternative surgical approaches to the Diabetic foot (e.g., multiple or plantar approaches)</td>
<td>• Surgically treats complex complications</td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., pre- and post-operative orders, labs, consults)</td>
<td>• Prescribes and manages non-operative treatment (e.g., wound care, antibiotics, off-loading, immobilization, depth shoes, accommodative orthotics)</td>
<td>• Modifies and adjusts post-operative treatment plan as needed</td>
<td>• Capable of treating complications, both intra- and post-operatively</td>
<td></td>
</tr>
<tr>
<td>• Lists potential complications</td>
<td>• Completes pre-operative planning including vascular assessment and the potential for wound healing (e.g., ankle-brachial indicis [ABIs] endovascular consultation)</td>
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<td>• Performs one basic surgical approach to the Diabetic foot (e.g., medial or lateral)</td>
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<td>• Provides post-operative management and rehabilitation (PT orders with goals and restrictions)</td>
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<td>• Capable of diagnosis and early management of complications (e.g., wound healing problems, infection, DVT)</td>
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<tr>
<th>Diaphyseal Femur and Tibia Fracture – Medical Knowledge</th>
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<td><strong>Level 1</strong></td>
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<tr>
<td>- Demonstrates knowledge of pathophysiology related to diaphyseal femur and tibia fractures</td>
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<tr>
<td>- Correlates anatomic knowledge to imaging findings on basic imaging studies</td>
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<tr>
<td>- Demonstrates knowledge of medical and surgical comorbidities</td>
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| **Level 2**                                           |
| - Able to describe and classify fractures |
| - Correlates anatomic knowledge to imaging findings on advanced imaging studies |
| - Demonstrates knowledge of associated injuries and impact on surgical care (e.g., femoral neck fracture, associated skeletal injuries) |
| - Understands implication of open fractures and soft tissue injury |
| - Demonstrates knowledge of bone biology, osteoporosis and bone health management |
| - Demonstrates knowledge of natural history of diaphyseal femur and tibia fractures |
| - Demonstrates knowledge of diaphyseal femur and tibia fractures anatomy and basic surgical approaches |
| - Understands basic pre-surgical planning and templating |
| - Demonstrates knowledge of non-operative treatment options and surgical indications |
| - Demonstrates knowledge of surgical and non-operative complications (e.g., compartment syndrome, fat emboli, infection) |

| **Level 3**                                           |
| - Demonstrates knowledge of current literature and alternative treatments |
| - Demonstrates knowledge of impact on polytrauma on management of diaphyseal femur and tibia fractures |
| - Understands biomechanics and implant choices |
| - Understands the effects of intervention on natural history of diaphyseal femur and tibia fractures |
| - Understands alternative surgical approaches |
| - Recognizes surgical indications in complex fractures and the polytrauma patient |

| **Level 4**                                           |
| - Understands controversies within the field (e.g., initial management of femur fracture in the polytrauma patient) |
| - Applies understanding of natural history to clinical decision-making |

| **Level 5**                                           |
| - Primary author/presenter of original work within the field |

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Diaphyseal Femur and Tibia Fracture – Patient Care

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<td></td>
<td>Obtains history and performs basic physical exam</td>
<td>Observe and interpret basic imaging studies</td>
<td>Appropriately orders and interprets advanced imaging studies</td>
<td>Performs surgical repair to a moderately complex fracture (e.g., able to perform intramedullary nailing of segmental femur fracture)</td>
<td>Performs surgical repair to a complex fracture (e.g., able to perform intramedullary nailing of distal tibia fracture with intraarticular extension)</td>
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<td>Appropriately orders basic imaging studies</td>
<td>Performs a closed reduction</td>
<td>Performs comprehensive pre-operative planning with instrumentation and implants</td>
<td>Performs alternative surgical approaches for femur and tibia fractures (e.g., open reduction techniques)</td>
<td>Develops unique, complex post-operative management plans</td>
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<td>Splints fracture appropriately</td>
<td>Completes pre-operative planning</td>
<td>Performs surgical repair to a simple fracture</td>
<td>Performs surgical repair to a simple fracture</td>
<td>Surgically treats complex complications (e.g., treats femoral neck fracture identified after femoral nailing)</td>
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<tr>
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<td>Provides basic peri-operative management</td>
<td>Performs patient positioning for operative fixation (e.g., use of fracture table)</td>
<td>Effectively uses intraoperative imaging</td>
<td>Effectively uses intraoperative imaging</td>
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<td>Assesses for limb perfusion and compartment syndrome</td>
<td>Performs post-operative management and rehabilitation</td>
<td>Modifies and adjusts post-operative treatment plan as needed</td>
<td>Prioritizes the needs of the polytrauma patient (e.g., timing of long bone fixation, works with consulting teams)</td>
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<td></td>
<td>Lists potential complications</td>
<td>Performs basic surgical approaches</td>
<td>Capable of performing compartment release</td>
<td>Capable of treating complications both intraoperatively and post-operatively (e.g., manages post-operative infection)</td>
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<td>Performs basic open wound management and debridement</td>
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<td>Initiates management of limb reperfusion and compartment syndrome</td>
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<td>Recognizes the needs of the polytrauma patient</td>
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<td>Capable of diagnosis and early management of complications</td>
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</table>
| • Demonstrates knowledge of anatomy  
• Understands basic imaging | • Demonstrates knowledge of fracture description and soft tissue injury: angulation, displacement, shortening, comminution, shear pattern, articular parts  
• Understands mechanism of injury  
• Understands biology of fracture healing  
• Understands advanced imaging  
• Understands surgical approaches and fixation tech: percutaneous pinning, volar plating, external fixation, dorsal plating, fragment specific, combinations | • Demonstrates knowledge of current literature, fracture classifications and therapeutic alternatives  
• Demonstrates knowledge of associated injuries: median nerve injury, scaphoid fracture; scapholunate (SL) ligament injury, triangular fibrocartilage complex (TFCC) injury, elbow injuries  
• Understands natural history of distal radius fracture  
• Understands biomechanics and implant choices: understand the advantage and disadvantages of different fixation techniques | • Understands controversies within field: fixation techniques and fracture pattern, correlation between radiographic and functional outcomes in elderly patient  
• Participates in research in the field with publication | |

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### Distal Radius Fracture (DRF) – Patient Care

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| • Obtains history and performs basic physical exam  
• Orders/interprets basic imaging studies  
• Splints fracture appropriately  
• Provides basic post-operative management and rehab  
• Lists potential complications (e.g., infections, hardware failure, tendon injury, Complex Regional Pain Syndrome [CRPS], carpal tunnel syndrome, malreduction)  

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| • Obtains focused history and physical, recognizes implications of soft tissue injury (e.g., open fracture, median nerve dysfunction, distal radioulnar joint [D RUJ] instability)  
• Orders/interprets advanced imaging (e.g., CT for comminuted articular fractures)  
• Recognizes stable/unstable fractures (e.g., metaphyseal comminution, volar/dorsal Barton’s, die-punch pattern; multiple articular parts)  
• Able to perform a closed reduction and splint appropriately  
• Recognizes surgical indications (e.g., median nerve dysfunction, instability, articular step off/gap, dorsal angulation, radius shortening)  
• Performs surgical exposure  
• Modifies and adjusts post-operative plan when indicated  
• Recognizes/evaluates fragility fractures (e.g., orders appropriate work-up and/or consult)  
• Diagnoses and provides early management of complications  

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| • Performs pre-operative planning with appropriate instrumentation and implants  
• Capable of surgical reduction and fixation of extraarticular fracture  
• Interprets diagnostic studies for fragility fractures with appropriate management and/or referral  

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| • Capable of surgical reduction and fixation of simple intraarticular fractures (e.g., no more than two articular fragments)  
• Capable of surgically treating simple complications (e.g., infections, open carpal tunnel release)  

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| • Capable of surgical reduction and fixation of a full range of fractures and dislocations (e.g., comminuted or very distal articular fractures, dorsal and volar metaphyseal fractures, greater arc perilunate injuries, Scapholunate ligament injuries)  
• Capable of surgically treating complex complications (e.g., osteotomies, revision fixation)  

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**Adult Elbow Fracture – Medical Knowledge**

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<tbody>
<tr>
<td>• Demonstrates knowledge of fractures (e.g., olecranon, radial head, coronoid fracture, terrible triad fracture, distal humerus fracture, fracture dislocation)</td>
<td>• Understands mechanism of injury and knowledge of fracture classification and soft tissue injury (e.g., olecranon, radial head, coronoid fracture, terrible triad fracture, distal humerus fracture, fracture dislocation)</td>
<td>• Demonstrates knowledge of current literature and alternatives (e.g., fracture repair vs. replacement, post-operative stiffness concepts)</td>
<td>• Understands controversies within field (e.g., tension band vs. plating olecranon fractures, elbow replacement for elderly distal humerus fractures; radial head repair vs. replacement)</td>
<td>• Participates in research in the field with publication</td>
</tr>
<tr>
<td>• Demonstrates knowledge of anatomy (e.g., elbow joint, radial head, coronoid, olecranon, distal humerus, elbow ligaments)</td>
<td>• Demonstrates knowledge of imaging studies/lab studies (e.g., radiographs anteroposterior [AP]/lateral/oblique/axial)</td>
<td>• Understands surgical approaches (e.g., soft tissue envelope, cutaneous nerves, ulnar nerve treatment)</td>
<td>• Understands biomechanics and implant choices (e.g., radial head replacement, compression headless screws, elbow replacement types)</td>
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<tr>
<td>• Understands basic imaging studies</td>
<td>• Understands rehabilitation mechanics (e.g., range of motion therapy, dynamic/static stretch splinting)</td>
<td>• Understands biology of fracture healing</td>
<td>• Understands post-operative imaging studies/implant positioning</td>
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<tr>
<td>• Understands advanced imaging studies (e.g., post-operative x-rays, CT scans for fracture healing)</td>
<td>• Demonstrates knowledge of current literature and alternatives (e.g., fracture repair vs. replacement, post-operative stiffness concepts)</td>
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## Adult Elbow Fracture – Patient Care

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<tbody>
<tr>
<td>• Obtains history and basic physical (e.g., age, gender, mechanism of injury, deformity, skin integrity, open/closed injury)</td>
<td>• Obtains focused history and physical, recognizes implications of soft tissue injury (e.g., open fracture, compartment syndrome, ligamentous injury)</td>
<td>• Performs pre-operative planning with instrumentation and implants (e.g., patient positioning, plates/screws, fluoroscopy)</td>
<td>• Performs comprehensive pre-operative planning/alternatives (e.g., use of external fixation, radial head replacement, elbow arthroplasty)</td>
<td>• Capable of surgical reduction and fixation of a full range of fractures and dislocations</td>
</tr>
<tr>
<td>• Splints fracture appropriately</td>
<td>• Able to order appropriate imaging studies (e.g., radiographs, CT scan/3D reconstruction)</td>
<td>• Capable of surgical reduction and fixation of a simple fracture (e.g., olecranon fracture)</td>
<td>• Capable of surgical reduction and fixation of moderately complex fractures (extraarticular and simple intraarticular distal humerus fracture)</td>
<td>• Understands how to avoid/prevent potential complications</td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., post-operative orders, ice, elevation, compression)</td>
<td>• Performs basic surgical approach to elbow fractures</td>
<td>• Provides post-operative management and rehabilitation (e.g., increase ROM as healing progresses, adequate/proper post-operative x-rays)</td>
<td>• Modifies and adjusts post-operative plan as needed (e.g., dynamic/static stretch splinting, revise therapy)</td>
<td>• Surgically treats complex complications (e.g., elbow release for stiffness, ID infection, revision hardware failure, nonunion treatment)</td>
</tr>
<tr>
<td>• Lists potential complications (e.g., infection, hardware failure, stiffness, reflex sympathetic dystrophy [RSD], neurovascular injury, posttraumatic arthritis)</td>
<td>• Reduces fracture if necessary (e.g., provisional fixation, fluoroscopic checks)</td>
<td>• Capable of diagnosis and early management of complications (e.g., diagnosis from peri-operative x-rays, recognize infection, recognize fracture displacement/dislocation)</td>
<td>• Treat simple complications both intra-and post-operatively (e.g., revise hardware placement, recognize improper hardware position)</td>
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</table>
| • Demonstrates knowledge of pathophysiology related to hip and knee arthritis  
• Correlates anatomic knowledge to imaging findings on basic imaging studies  
• Demonstrates some knowledge of natural history of hip and knee arthritis  
• Demonstrates knowledge of hip and knee arthritis anatomy and basic surgical approaches  
• Demonstrates knowledge of non-operative treatment options and surgical indications | • Able to classify disease stage/severity and recognizes implications of disease processes (OA, Femoroacetabular impingement [FAI], inflammatory arthritis, osteonecrosis)  
• Understands the importance of comorbidities, thromboembolic prophylaxis, infection prevention and diagnosis  
• Correlates anatomic knowledge to imaging findings on advanced imaging studies  
• Understands the effects of intervention on natural history of hip and knee arthritis  
• Understands basic presurgical planning and templating  
• Understands basic implant choices (e.g., cement and uncemented fixation, levels of constraint) | • Demonstrates knowledge of current literature and alternative treatments  
• Understands biomechanics  
• Understands alternative surgical approaches (e.g., non-arthroplasty: arthroscopy, osteotomy)  
• Understands alternative implant choices/biomaterials (e.g., alternative bearings, unicompartmental approaches) | • Understands controversies within the field  
• Applies understanding of natural history to clinical decision-making  
• Understands principles of failure mechanism of total hip replacement (THR) and total knee replacement (TKR) (e.g., loosening, fracture, infection, osteolysis, instability)  
• Understands basic principles of revision THR and TKR | • Primary author/presenter of original work within the field  
• Understands revision THR and TKR implants (e.g., metaphyseal vs. diaphyseal fixation, tapered vs. fully-porous implants) |

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## Hip and Knee Osteo Arthritis (OA) – Patient Care

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<tbody>
<tr>
<td>• Obtains history and performs basic physical exam</td>
<td>• Obtains focused history and performs focused exam</td>
<td>• Appropriately orders and interprets advanced imaging studies (e.g., MRI, CT, nuclear medicine imaging, and advanced radiographs views)</td>
<td>• Capable of performing alternative surgical approaches to the hip and knee arthritis</td>
<td>• Competently performs two or more approaches to the hip and knee</td>
</tr>
<tr>
<td>• Appropriately orders basic imaging studies</td>
<td>• Appropriately interprets basic imaging studies</td>
<td>• Appropriately recommends surgical intervention</td>
<td>• Capable of performing complex primary and simple revision THR and TKR (e.g., hip dysplasia, hip protrusio, valgus knee, loose components, uniartthroplasty)</td>
<td>• Capable of performing complex primary and simple revision THR and TKR (e.g., hip dysplasia, hip protrusio, valgus knee, loose components, uniartthroplasty)</td>
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<tr>
<td>• Prescribes non-operative treatments (e.g., NSAIDs, physical therapy, assistive devices)</td>
<td>• Manages non-operative treatment (e.g., NSAIDs, physical therapy, assistive devices, injections)</td>
<td>• Completes comprehensive pre-operative planning with alternatives</td>
<td>• Capable of treating complications both intra- and post-operatively (e.g., peri-prosthetic fractures, infections, instability)</td>
<td>• Competently performs two or more approaches to the hip and knee</td>
</tr>
<tr>
<td>• Provides basic peri-operative management (e.g., pre- and post-operative assessment)</td>
<td>• Completes pre-operative planning with instrumentation and implants (e.g., implant templating, instruments needed)</td>
<td>• Modifies and adjusts post-operative treatment plan as needed</td>
<td>• Capable of performing complex primary and simple revision THR and TKR (e.g., hip dysplasia, hip protrusio, valgus knee, loose components, uniartthroplasty)</td>
<td>• Capable of performing complex primary and simple revision THR and TKR (e.g., hip dysplasia, hip protrusio, valgus knee, loose components, uniartthroplasty)</td>
</tr>
<tr>
<td>• Lists potential complications (e.g., infections, dislocations, thromboembolic disease, peri-prosthetic fracture, neurovascular compromise)</td>
<td>• Capable of performing one basic surgical approach to the hip and knee</td>
<td>• Capable of surgically treating simple complications (e.g., closed reduction, irrigation, and debridement)</td>
<td>• Provides prophylaxis and manages thromboembolic disease</td>
<td>• Competently performs two or more approaches to the hip and knee</td>
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<td>• Provides post-operative management and rehabilitation (e.g., orders appropriate peri-operative medications and mobilization)</td>
<td>• Provides prophylaxis and manages thromboembolic disease</td>
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<td>• Capable of diagnosis and early management of complications (e.g., infections, dislocations)</td>
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<td>• Assesses for risk of thromboembolic disease</td>
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## Hip Fracture – Medical Knowledge

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<tr>
<td>- Demonstrates knowledge of pathophysiology related to hip fracture</td>
<td>- Able to describe and classify fractures</td>
<td>- Demonstrates knowledge of current literature and alternative treatments</td>
<td>- Understands controversies within the field (e.g., hemiarthroplasty vs. total hip for displaced femoral neck fracture)</td>
<td>- Primary author/presenter of original work within the field</td>
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<tr>
<td>- Correlates anatomic knowledge to imaging findings on basic imaging studies</td>
<td>- Correlates anatomic knowledge to imaging findings on advanced imaging studies</td>
<td>- Understands the effects of intervention on natural history of hip fracture</td>
<td>- Applies understanding of natural history to clinical decision making</td>
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<tr>
<td>- Demonstrates knowledge of non-operative treatment options and surgical indications</td>
<td>- Demonstrates knowledge of bone biology, osteoporosis and bone health management</td>
<td>- Understands alternative surgical approaches</td>
<td>- Understands biomechanics and implant choices</td>
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<tr>
<td>- Demonstrates knowledge of natural history of hip fracture</td>
<td>- Demonstrates knowledge of hip fracture anatomy and basic surgical approaches</td>
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<tr>
<td>- Demonstrates knowledge of hip fracture anatomy and basic surgical approaches</td>
<td>- Understands basic presurgical planning and templating</td>
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<td>- Understands comorbidities and impact on fracture treatment</td>
<td>- Understands comorbidities and impact on fracture treatment</td>
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### Hip Fracture – Patient Care

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| • Obtains history and performs basic physical exam  
• Appropriately orders basic imaging studies  
• Prescribes non-operative treatments  
• Provides basic peri-operative management  
• Lists potential complications | • Obtains focused history and performs focused exam  
• Appropriately interprets basic imaging studies  
• Prescribes and manages non-operative treatment  
• Recognizes and evaluates fragility fractures (e.g., orders appropriate workup and/or consult)  
• Interacts with consultants regarding optimal patient management (e.g., timing of surgery, medical management)  
• Completes pre-operative planning with instrumentation and implants  
• Capable of performing a basic surgical approach to the hip fracture  
• Provides post-operative management and rehabilitation  
• Capable of diagnosis and early management of complications  
• Assesses risk for thromboembolic disease | • Completes comprehensive assessment of fracture patterns on imaging studies – recognizes reverse obliquity fractures  
• Interprets diagnostic studies for fragility fractures with appropriate management and/or referral  
• Arranges for long-term management of geriatric patients (e.g., management of bone health, discharge planning to long-term care)  
• Completes comprehensive pre-operative planning with alternatives  
• Capable of surgical repairs to a simple fracture (e.g., stable intertrochanteric femur fracture, minimally displaced femoral neck fracture)  
• Modifies and adjusts post-operative treatment plan as needed  
• Provides prophylaxis and manages thromboembolic disease | • Capable of surgical repair to moderately complex fractures (e.g., unstable intertrochanteric femur fracture)  
• Capable of treating complications both intra- and post-operatively (e.g., manages a post-operative infection) | • Capable of surgical repair of complex fractures (e.g., open reduction internal fixation of femoral neck fracture)  
• Capable of surgical treatment of complex complications (e.g., revision fixation after failed ORIF, intertrochanteric osteotomy) |

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<tr>
<td>◦ Demonstrates knowledge of normal bone development</td>
<td>◦ Demonstrates knowledge of pathophysiology related to destructive bone lesion (e.g., understands the function of receptor activator of nuclear factor kappa-B ligand [RANKL], osteoprotegerin [OPG] and osteoclasts in the bone turnover in skeletal metastasis)</td>
<td>◦ Demonstrates knowledge of current literature and alternative treatments (e.g., alternative treatments, including external beam radiation, radiofrequency ablation, cryoaulation, bisphosphonate use)</td>
<td>◦ Understands controversies within the field (e.g., resection/prosthetic reconstruction vs. intramedullary fixation; short vs. long stem hip reconstruction; bipolar vs. total hip arthroplasty (THA) for hip lesions; resection of solitary bone metastasis)</td>
<td>◦ Primary author/presenter of original work within the field</td>
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<tr>
<td>◦ Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., plain radiographs)</td>
<td>◦ Demonstrates anatomic knowledge to imaging findings on advanced imaging studies (e.g., CT scan of chest/abdomen/pelvis, MRI of spine)</td>
<td>◦ Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., CT scan of chest/abdomen/pelvis, MRI of spine)</td>
<td>◦ Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., CT scan of chest/abdomen/pelvis, MRI of spine)</td>
<td>◦ Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., CT scan of chest/abdomen/pelvis, MRI of spine)</td>
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<td>◦ Demonstrates knowledge of most common sites of metastatic disease and primary sites of disease (e.g., primary sites breast, prostate, lung, kidney, thyroid)</td>
<td>◦ Demonstrates some knowledge of natural history of destructive bone lesion (e.g., understands behavior of various histologies [i.e., lung vs. breast cancer]; understands the different behavior of primary bone sarcoma vs. bone metastasis)</td>
<td>◦ Demonstrates some knowledge of natural history of destructive bone lesion (e.g., understands behavior of various histologies [i.e., lung vs. breast cancer]; understands the different behavior of primary bone sarcoma vs. bone metastasis)</td>
<td>◦ Demonstrates some knowledge of natural history of destructive bone lesion (e.g., understands behavior of various histologies [i.e., lung vs. breast cancer]; understands the different behavior of primary bone sarcoma vs. bone metastasis)</td>
<td>◦ Demonstrates some knowledge of natural history of destructive bone lesion (e.g., understands behavior of various histologies [i.e., lung vs. breast cancer]; understands the different behavior of primary bone sarcoma vs. bone metastasis)</td>
</tr>
<tr>
<td>◦ Demonstrates knowledge of destructive bone lesion anatomy and basic surgical approaches (e.g., understands the location of neurovascular anatomy)</td>
<td>◦ Demonstrates knowledge of destructive bone lesion anatomy and basic surgical approaches (e.g., understands the location of neurovascular anatomy)</td>
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<tr>
<td>Structures in upper/lower extremities and pelvis; understand basic surgical approach to humeral and femoral nails</td>
<td>Hormonal therapy, bisphosphonates for common primary cancers that spread to bone</td>
<td>Demonstrates knowledge of alternatives for primary sarcoma of bone (e.g., understands role of resection vs. palliative care; understands role of limb salvage vs. amputation)</td>
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<tr>
<td>- Understands basic pre-surgical planning and templating</td>
<td>- Demonstrates knowledge of non-operative treatment options and surgical indications (e.g., understands non-operative options, including protected weight-bearing/radiation of lower extremity lesions, as well as bracing of upper extremity lesion)</td>
<td>- Understands biomechanics and implant choices (e.g., understands concepts of failure in compression vs. tension; understands the benefit of supplemental methylmethacrylate; understands the pros/cons of plate vs. rod fixation)</td>
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### Metastatic Bone Lesion – Patient Care

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</table>
| • Obtains history and performs basic physical exam (e.g., pain, function, past medical/surgical/social/family history, review of systems, heart, lungs, extremity exam, including range of motion, strength, sensation, skin changes, tenderness) | • Obtains focused history and performs focused exam (e.g., history: specific questions re: past history of cancer or radiation, prior treatments, pre-existing pain, smoking or chemical exposure, constitutional symptoms such as fever; physical exam: notes lymph node involvement, lumps/nodules)  
  • Appropriately interprets basic imaging studies (e.g., able to describe the radiographic appearance [osteolytic, osteoblastic, etc.])  
  • Prescribes and manages non-operative treatment (e.g., understands when to have the patient back to clinic for follow-up; understands when to order new radiographic imaging studies)  
  • Completes pre-operative planning with instrumentation and implants  
  • Performs one basic surgical approach to the destructive bone lesion  
  • Provides post-operative management and rehabilitation (e.g., understands weight-bearing issues and role of physical/occupational therapy [PT/OT]) | • Appropriately orders and interprets advanced imaging studies/lab studies (e.g., 3D radiographic studies to include CT and MRI, lab studies including role of serum protein electrophoresis [SPEP]/urine protein electrophoresis [UPEP], prostate specific antigen [PSA], other tumor markers)  
  • Recommends complex non-operative treatment (radiofrequency ablation [RFA] or cryoablation, bisphosphonates kyphoplasty or vertebroplasty)  
  • Completes comprehensive pre-operative planning with alternatives  
  • Completes pre-operative preparation and consultation (e.g., oncology, radiation oncology, counseling)  
  • Modifies and adjusts post-operative treatment plan as necessary | • Recommends appropriate biopsy, including biopsy alternatives and appropriate techniques (e.g., understands role of open biopsy vs. needle biopsy)  
  • Capable of performing prophylactic fixation based on diagnosis and risk (e.g., able to perform prophylactic intramedullary stabilization of femur, prophylactic bipolar hemiarthroplasty of the hip)  
  • Capable of performing internal fixation on impending or actual pathologic fractures (e.g., able to perform intramedullary stabilization of pathologic femoral or humeral fracture, bipolar hip hemiarthroplasty for pathologic femoral neck fracture)  
  • Capable of performing alternative surgical approaches to the destructive bone lesion (e.g., understands potential complications, including infection, wound complications, neurovascular) | • Discusses prognosis and end-of-life care with patients and family  
  • Independently performs open biopsy  
  • Performs endoprosthetic reconstruction for periarthritic lesions (options include: megaprosthesis of proximal humerus, proximal femur, distal femur, proximal tibia)  
  • Develops unique, complex post-operative management plans  
  • Surgically treats complex complications (e.g., surgical treatment of hardware failure, periprosthetic fracture, progression of disease) |
| Progression, prosthetic hip dislocation, DVT/ pulmonary embolism [PE], pneumonia | (e.g., able to diagnose: infection, DVT/PE, wound breakdown, neurovascular compromise, hardware failure) | • Capable of treating post-operative complications (e.g., non-operative treatment of: infection, wound breakdown, DVT/PE) | for prosthetic reconstruction; understands approaches for resection of proximal humerus, distal femur and proximal tibia)  
• Capable of surgical treatment of infection or wound breakdown |

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<tbody>
<tr>
<td>• Demonstrates knowledge of pathophysiology related to meniscal tear</td>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., tear personality, chondral injury/changes)</td>
<td>• Demonstrates knowledge of current literature and alternative treatments</td>
<td>• Understands controversies within the field (e.g., repair techniques)</td>
<td>• Primary author/presenter of original work within the field</td>
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<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., joint space height, Fairbank changes)</td>
<td>• Understands biology of meniscal healing</td>
<td>• Understands rehabilitation mechanics (e.g., quad strength closed vs. open chain)</td>
<td>• Understands how to prevent/avoid potential complications</td>
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<td>• Understands mechanism of injury</td>
<td>• Understands the effects of intervention on natural history of meniscal tear</td>
<td>• Understands biomechanics and implant choices</td>
<td>• Applies understanding of natural history to clinical decision-making</td>
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<tr>
<td>• Demonstrates some knowledge of natural history of meniscal tear</td>
<td>• Demonstrates knowledge of meniscal anatomy and basic surgical approaches</td>
<td>• Understands alternative surgical approaches (e.g., repair vs. debridement)</td>
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<td>• Demonstrates knowledge of non-operative treatment options and surgical indications</td>
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### Meniscal Tear – Patient Care

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<tr>
<td>• Obtains history and performs basic physical exam (e.g., age, gender, HPI, PMHx, social history, ROM, joint tenderness, effusion, neurovascular status)</td>
<td>• Obtains focused history and performs focused exam (e.g., McMurray, Steinmann, applies compression)</td>
<td>• Appropriately orders and interprets advanced imaging studies (e.g., MRI findings)</td>
<td>• Capable of performing meniscal repair—all techniques open and arthroscopic</td>
<td>• Capable of performing revision of meniscal repair or meniscal transplant</td>
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<tr>
<td>• Appropriately orders basic imaging studies (e.g., plain film radiographs)</td>
<td>• Appropriately interprets basic imaging studies (e.g., standing radiographs as needed, Fairbank changes)</td>
<td>• Provides complex non-operative treatment (e.g., concomitant injuries—ligament, fractures)</td>
<td>• Capable of performing alternative surgical approaches to a meniscal tear</td>
<td>• Capable of treating complex complications</td>
</tr>
<tr>
<td>• Prescribes non-operative treatments</td>
<td>• Prescribes and manages non-operative treatment (e.g., quad strength closed chain)</td>
<td>• Provides diagnostic arthroscopy and meniscal debridement</td>
<td>• Capable of performing complications both intra- and post-operatively</td>
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<tr>
<td>• Provides basic peri-operative management (e.g., neurovascular status, ROM, brace)</td>
<td>• Injects/aspirates knee</td>
<td>• Modifies and adjusts post-operative treatment plan as needed (e.g., knee arthrofibrosis, continued pain)</td>
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<tr>
<td>• Lists potential complications (e.g., pain, infection, neurovascular injury, loss of motion, degenerative joint disease [DJD])</td>
<td>• Examines knee under anesthesia</td>
<td>• Capable of performing diagnostic arthroscopy and meniscal debridement</td>
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<tr>
<td>• Performs post-operative management and rehabilitation (e.g., ROM, quad strength closed chain, WB status)</td>
<td>• Provides post-operative management and rehabilitation (e.g., ROM, quad strength closed chain, WB status)</td>
<td></td>
<td>• Modifies and adjusts post-operative treatment plan as needed (e.g., knee arthrofibrosis, continued pain)</td>
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</tr>
<tr>
<td>• Capable of diagnosis and early management of complications</td>
<td>• Capable of diagnosis and early management of complications</td>
<td>• Capable of performing diagnostic arthroscopy and meniscal debridement</td>
<td>• Capable of performing alternative surgical approaches to a meniscal tear</td>
<td>• Capable of treating complex complications</td>
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<tr>
<td>• Demonstrates knowledge of common presentation of hip septic arthritis</td>
<td>• Demonstrates knowledge of pathophysiology of joint damage related to septic arthritis</td>
<td>• Demonstrates knowledge of the vascular supply in the skeletally immature hip</td>
<td>• Demonstrates knowledge of options and anatomy for surgical approaches</td>
<td>• Participates in research in the field with publication</td>
</tr>
<tr>
<td>• Demonstrates knowledge of basic hip anatomy</td>
<td>• Demonstrates knowledge of basic surgical approach</td>
<td>• Demonstrates knowledge of microbiology and antibiotic choices</td>
<td>• Demonstrates knowledge of atypical infecting organisms and management options</td>
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<tr>
<td>• Demonstrates knowledge of basic imaging studies</td>
<td>• Demonstrates knowledge of the differential diagnosis of the irritable hip</td>
<td>• Demonstrates knowledge of potential complications</td>
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<tr>
<td>• Demonstrates knowledge of appropriate laboratory studies</td>
<td>• Understands natural history and the effects of intervention</td>
<td>• Demonstrates knowledge of potential complications</td>
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<tr>
<td>• Demonstrates knowledge of advanced imaging studies</td>
<td>• Demonstrates knowledge of the differential diagnosis of the irritable hip</td>
<td>• Demonstrates knowledge of potential complications</td>
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**Pediatric Septic Hip – Patient Care**

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<tr>
<td>• Obtains history and performs basic physical exam</td>
<td>• Obtains focused history and physical, recognizes findings commonly</td>
<td>• Recognizes factors that could predict complications or poor outcome</td>
<td>• Assimilates all diagnostic testing and make a decision about the need</td>
<td>• Able to develop a comprehensive pre-operative plan</td>
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<tr>
<td>• Orders appropriate initial imaging and laboratory studies</td>
<td>• associated with hip septic arthritis</td>
<td>• Appropriately orders and capable of performing hip aspiration</td>
<td>for surgical drainage</td>
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<tr>
<td>• Provides initial management</td>
<td>• Orders appropriate advanced imaging studies (e.g., MRI, ultrasound)</td>
<td>• Interprets advanced imaging studies and results of hip aspiration</td>
<td>• Capable of performing hip arthrotomy and drainage</td>
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</tr>
<tr>
<td>• Lists potential complications</td>
<td>• Interprets basic imaging and laboratory studies</td>
<td>• Able to develop a basic pre-operative plan</td>
<td>• Modifies post-operative plan based on response to treatment (e.g.,</td>
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<td></td>
<td>• Selects appropriate antibiotics</td>
<td></td>
<td>patient fails to improve post-operatively)</td>
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<td></td>
<td>• Diagnoses complications (e.g., drug reactions)</td>
<td></td>
<td>• Capable of treating simple complications; repeat incision for</td>
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<td>persistent wound drainage, drug reaction</td>
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### Rotator Cuff Injury – Medical Knowledge

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<tr>
<td>• Understands surgical anatomy (e.g., rotator cuff muscles/tendons, deltoid, axillary nerve position, acromion, biceps, labrum)</td>
<td>• Demonstrates knowledge of surgical indications (e.g., non-operative management, therapy, injections, rotator cuff repair, subacromial decompression)</td>
<td>• Demonstrates knowledge of current literature and alternatives</td>
<td>• Understands pathophysiology of concomitant injuries (e.g., biceps tendinitis, acromioclavicular joint disease, labral pathology, arthritis)</td>
<td>• Participates in research in the field with publication cites/teaches junior residents appropriate outcomes studies</td>
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<tr>
<td>• Understands pathophysiology related to rotator cuff injury (e.g., impingement, partial thickness cuff tears, extrinsic versus intrinsic theory of cuff tearing)</td>
<td>• Demonstrates knowledge of basic surgical approaches and portal placement (e.g., anterior, subacromial, posterior, accessory posterior)</td>
<td>• Understands pathophysiology of failed rotator cuff disease (e.g., symptomatic vs. asymptomatic cuff tears, impingement, intrinsic versus extrinsic mechanisms)</td>
<td>• Understands end stage rotator cuff tear arthropathy and treatment options</td>
<td>• Understands treatment for massive/irreparable tears</td>
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<tr>
<td>• Understands biology of soft tissue tendon healing</td>
<td>• Demonstrates knowledge of basic imaging studies: radiographs (e.g., true AP, axillary, supraspinatus outlet)</td>
<td>• Understands natural history of rotator cuff disease (e.g., L-shaped, concentric, U-shaped, tissue quality, biceps subluxation)</td>
<td>• Understands tear pattern, appropriate repair, biceps tenodesis (e.g., misalignment of suture anchor, poor exposure, hemostatis, tuberosity fracture, and anchor breakage)</td>
<td>• Understands treatments of intra-operative complications (e.g., misalignment of suture anchor, poor exposure, hemostatis, tuberosity fracture, and anchor breakage)</td>
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<td>• Demonstrates knowledge of advanced imaging studies/lab studies (e.g., MRI, ultrasound, CT arthrogram)</td>
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<th>Rotator Cuff Injury – Patient Care</th>
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<tr>
<td>• Obtains history and performs basic physical examination (e.g., age, gender, smoker, trauma, night pain, weakness, inspection for atrophy, ROM)</td>
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<tr>
<td>• Lists surgical complications (e.g., infection, stiffness, RSD, retear)</td>
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<td><strong>Level 2</strong></td>
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<td>• Obtains focused history and performs physical examination (e.g., provocative tests, Neer/Hawkins, O’Briens, lag signs, pseudoparalysis, lift-off, belly press, scapular dyskinesia)</td>
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<tr>
<td>• Orders basic imaging studies</td>
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<tr>
<td>• Performs basic surgical approaches and portal placement (e.g., anterior, subacromial, posterior, accessory posterior)</td>
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<td>• Performs simple shoulder procedures (e.g., subacromial injection)</td>
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<td>• Prescribes non-operative treatment</td>
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<td>• Provides basic post-operative management (e.g., phases of cuff repair rehab, Phase 1-3)</td>
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<td>• Diagnoses surgical complications</td>
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<tr>
<td>• Interprets basic imaging studies (e.g., rotator cuff tear on MRI, muscle atrophy on MRI, proximal humeral migration on x-ray)</td>
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<tr>
<td>• Completes pre-operative planning with instrumentation and implants (e.g., patient positioning, arthroscopic equipment, anchors)</td>
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<tr>
<td>• Capable of performing diagnostic arthroscopy, subacromial decompression, distal clavicle resection, biceps tenotomy</td>
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<td><strong>Level 4</strong></td>
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<tr>
<td>• Able to order and interpret advanced imaging studies (e.g., tear size, muscle atrophy, labral tears, arthritis, subscapularis tears)</td>
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<tr>
<td>• Completes comprehensive pre-operative planning and alternatives</td>
</tr>
<tr>
<td>• Capable of performing rotator cuff repair</td>
</tr>
<tr>
<td>• Appropriately interprets post-operative imaging studies/implant positioning</td>
</tr>
<tr>
<td>• Modifies and adjusts post-operative rehabilitation plan as needed (e.g., modify for massive cuff repairs, post-operative stiffness)</td>
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<td>• Treats complications both intra- and post-operatively (e.g., irrigation/debridement for infections, proper infection treatment protocol, infectious disease consultation)</td>
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<tr>
<td>• Capable of performing complex arthroscopic rotator cuff repairs, revision rotator cuff repair, tendon transfers</td>
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<tr>
<td>• Surgically treats complex complications (e.g., revision rotator cuff repair with tendon transfer, reverse shoulder replacement for anterosuperior escape)</td>
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## Pediatric Supracondylar Humerus Fracture – Medical Knowledge

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<tr>
<td>• Demonstrates knowledge of pathophysiology related to supracondylar humerus fracture (e.g., fall on outstretched hand, extension mechanism most common; fracture occurs initially on tension side with disruption of periosteum and soft tissues on convexity)</td>
<td>• Understands the biology of fracture healing (e.g., hematoma formation, inflammation, early soft callus, hard callus, remodeling) and the importance of periosteum and periosteal bone formation in pediatric fractures</td>
<td>• Demonstrates knowledge of current literature and alternative treatments (e.g., immobilization for non-displaced fractures; closed reduction and pinning for displaced fractures; alternatives rarely used—olecranon traction for severe swelling)</td>
<td>• Understands controversies within the field; indications for reduction of mildly angulated type II fractures, indications/criteria for open reduction in closed fractures; management of perfused pulseless supracondylar fracture</td>
<td>• Primary author/presenter of original work within the field</td>
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<td>• Demonstrates knowledge of elbow anatomy (e.g., ossification centers in growing elbow, bone anatomy, soft tissue anatomy)</td>
<td>• Correlates anatomic knowledge to imaging findings on advanced imaging studies (e.g., rare need for arthrogram/MRI to assess articular surface)</td>
<td>• Demonstrates knowledge of nerve anatomy relative to pin fixation (e.g., location of ulnar nerve and changes with elbow position; locations of median and radial nerves)</td>
<td>• Understands how to avoid/prevent potential complications (e.g., malunion, nerve injury, vascular complications, ischemic contracture, compartment syndrome, pin tract infections)</td>
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<tr>
<td>• Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., location of fracture, involvement of articular surface or not)</td>
<td>• Understands mechanism of injury and fracture classification (e.g., extension vs. flexion types, Gartland classification, elbow hyperextension common in 4-7-year old children)</td>
<td>• Understands rehabilitation protocol (e.g., regaining motion over six weeks-to-six months)</td>
<td>• Applies understanding of natural history to clinical decision making (e.g., intervention to improve outcome, prevent complications)</td>
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<tr>
<td>• Demonstrates knowledge of non-operative treatment options and surgical indications (e.g., safe casting/splinting principles to minimize risk of compartment syndrome/vascular insufficiency)</td>
<td>• Demonstrates knowledge of natural history of supracondylar humerus fracture (e.g., high incidence malunion in displaced fractures treated closed, vast majority of nondisplaced fractures and displaced fractures treated with closed reduction and</td>
<td>• Understands the effects of intervention on natural history of supracondylar humerus fracture; avoid malunion, Volkmann’s ischemic contracture</td>
<td>• Understands alternative surgical approaches (e.g., anterior, anteromedial, anterolateral, medial, posterior approaches)</td>
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<tr>
<td>• Demonstrates knowledge of non-operative treatment options and surgical indications (e.g., safe casting/splinting principles to minimize risk of compartment syndrome/vascular insufficiency)</td>
<td></td>
<td>• Understands biomechanics and implant choices (e.g., impact of pin size, pin placement [spread at</td>
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<tr>
<td>Percutaneous pinning [CRPP] function well, and possible vascular injury</td>
<td>Demonstrates knowledge of supracondylar humerus fracture anatomy and basic surgical approaches (e.g., direction of displacement and neurological/vascular structures at risk affects choice of approach)</td>
<td>Understands basic pre-surgical planning; anticipates obstacles to reduction, understands reduction maneuvers</td>
<td>Fracture, fracture pattern/comminution</td>
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**Comments:**

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<tr>
<td>• Obtains history and performs basic physical exam (e.g., injury mechanism, radial and ulnar pulse assessment)</td>
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<tr>
<td>• Appropriately orders basic imaging studies (e.g., AP and lateral elbow radiographs, oblique views if concern for condylar component)</td>
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<tr>
<td>• Prescribes non-operative treatments</td>
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<tr>
<td>• Provides basic peri-operative management</td>
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<td>• Lists potential complications</td>
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- Capable of diagnosis and early management of complications, including compartment syndrome, pin tract sepsis, cast problems.

**Comments:**

- Not yet rotated
Compassion, integrity, and respect for others as well as sensitivity and responsiveness to diverse patient populations, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation. Knowledge about respect for and adherence to the ethical principles relevant to the practice of medicine, remembering in particular that responsiveness to patients that supersedes self-interest is an essential aspect of medical practice – Professionalism

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<tr>
<td>Consistently demonstrates behavior that conveys caring, honesty, and</td>
<td>Demonstrates an understanding of the importance of compassion, integrity,</td>
<td>Exhibits these attitudes consistently in complex and complicated</td>
<td>Develops and uses an integrated and coherent approach to understanding</td>
<td>Demonstrates leadership and mentoring regarding these principles of</td>
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<td>genuine interest in patients and families</td>
<td>respect, sensitivity, and responsiveness while exhibiting these</td>
<td>situations</td>
<td>and effectively working with others to provide good medical care that</td>
<td>bioethics</td>
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<tr>
<td>Recognizes the diversity of patient populations with respect to gender,</td>
<td>attitudes consistently in common and uncomplicated situations</td>
<td></td>
<td>integrates personal standards with standards of medicine</td>
<td>Manages ethical misconduct in patient management and practice</td>
</tr>
<tr>
<td>age, culture, race, religion, disabilities, sexual orientation, and</td>
<td>Consistently recognizes ethical issues in practice; discusses,</td>
<td></td>
<td>Consistently considers and manages ethical issues in practice</td>
<td></td>
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<tr>
<td>socioeconomic status</td>
<td>analyzes, and manages in common and frequent clinical situations</td>
<td></td>
<td>Consistently practices medicine as related to specialty care in a</td>
<td></td>
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<tr>
<td>Recognizes the importance and priority of patient care, with an</td>
<td>including socioeconomic variances in patient care</td>
<td></td>
<td>manner that upholds values and beliefs of self and medicine</td>
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<tr>
<td>emphasis on the care that the patient wants and needs; demonstrates a</td>
<td></td>
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<tr>
<td>commitment to this value</td>
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Comments: Not yet achieved Level 1
### Accountability to patients, society, and the profession; personal responsibility to maintain emotional, physical, and mental health – Professionalism

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<tr>
<td>• Understands when assistance is needed and willing to ask for help</td>
<td>• Recognizes limits of knowledge in common clinical situations and asks for assistance</td>
<td>• Consistently recognizes limits of knowledge in uncommon and complicated clinical situations; develops and implements plans for the best possible patient care</td>
<td>• Mentors and models personal and professional responsibility to colleagues</td>
<td>• Develops organizational policies and education to support the application of these principles in the practice of medicine</td>
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<tr>
<td>• Exhibits basic professional responsibilities, such as timely reporting for duty, being rested and ready to work, displaying appropriate attire and grooming, and delivering patient care as a functional physician</td>
<td>• Recognizes value of humility and respect towards patients and associate staff</td>
<td>• Assesses application of principles of physician wellness, alertness, delegation, teamwork, and optimization of personal performance to the practice of medicine</td>
<td>• Recognizes signs of physician impairment and demonstrates appropriate steps to address impairment in colleagues</td>
<td>• Practices consistent with the American Academy of Orthopaedic Surgeons (AAOS) Standards of Professionalism</td>
</tr>
<tr>
<td>• Aware of the basic principles and aspects of the general maintenance of emotional, physical, mental health, and issues related to fatigue/sleep deprivation</td>
<td>• Demonstrates adequate management of personal, emotional, physical, mental health, and fatigue</td>
<td>• Seeks out assistance when necessary to promote and maintain personal, emotional, physical, and mental health</td>
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**Comments:**

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### Self-Directed Learning – Practice-based Learning and Improvement

1. Identify strengths, deficiencies, and limits in one’s knowledge and expertise.
2. Assess patient outcomes and complications in your own practice.
3. Set learning and improvement goals.
4. Identify and perform appropriate learning activities.
5. Use information technology to optimize learning and improve patient outcomes.

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</table>
| • Acknowledges gaps in personal knowledge and expertise, and frequently asks for feedback from teachers and colleagues  
• Demonstrates computer literacy and basic computer skills in clinical practice  
• Continually assesses performance by evaluating feedback and assessments  
• Develops a learning plan based on feedback with some external assistance  
• Demonstrates use of published review articles or guidelines to review common topics in practice  
• Uses patient care experiences to direct learning  
| • Accurately assesses areas of competence and deficiencies and modifies learning plan  
• Demonstrates the ability to select an appropriate evidence-based information tool to answer specific questions while providing care  
| • Performs self-directed learning without external guidance  
• Critically evaluates and uses patient outcomes to improve patient care  
• Incorporates practice change based upon new evidence  |

#### Comments:

Not yet achieved Level 1
### Locate, appraise, and assimilate evidence from scientific studies to improve patient care – Practice-based Learning and Improvement

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| • Describes basic concepts in clinical epidemiology, biostatistics, and clinical reasoning  
• Categorizes the study design of a research study | • Ranks study designs by their level of evidence  
• Identifies bias affecting study validity  
• Formulates a searchable question from a clinical question | • Applies a set of critical appraisal criteria to different types of research, including synopses of original research findings, systematic reviews and meta-analyses, and clinical practice guidelines  
• Critically evaluates information from others: colleagues, experts, industry representatives, and patient-delivered information | • Demonstrates a clinical practice that incorporates principles and basic practices of evidence-based practice and information mastery  
• Cites evidence supporting several common practices | • Independently teaches and assesses evidence-based medicine and information mastery techniques |

Comments:

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### Systems thinking, including cost-effective practice – Systems-based Practice

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<tr>
<td>• Describes basic levels of systems of care (e.g., self-management to societal)</td>
<td>• Gives examples of cost and value implications of care he or she provides (e.g., gives examples of alternate sites of care resulting in different costs for individual patients)</td>
<td>• Orders and schedules tests in appropriate systems for individual patients balancing expenses and quality</td>
<td>• Effectively manages clinic team and schedules for patient and workflow efficiency</td>
<td>• Leads systems change at micro and macro level (e.g., manages operating room [OR] team and patient flow in a multi-case OR day)</td>
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**Comments:**

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### Resident will work in interprofessional teams to enhance patient safety and quality care – Systems-based Practice

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<tr>
<td>• Recognizes importance of complete and timely documentation in teamwork and patient safety</td>
<td>• Uses checklists and briefings to prevent adverse events in health care</td>
<td>• Participates in quality improvement or patient safety program and/or project</td>
<td>• Maintains team situational awareness and promote “speaking up” with concerns</td>
<td>• Incorporates clinical quality improvement and patient safety into clinical practice</td>
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### Uses technology to accomplish safe health care delivery – Systems-based Practice

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<td>• Explains the role of the Electronic Health Record (EHR) and Computerized Physician Order Entry (CPOE) in prevention of medical errors</td>
<td>• Appropriately and accurately enters patient data in EHR</td>
<td>• Reconciles conflicting data in the medical record</td>
<td>• Contributes to reduction of risks of automation and computerized systems by reporting system problems</td>
<td>• Recommends systems re-design for faculty computerized processes</td>
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<td>Communicates with patients about routine care (e.g., actively seeks and understands the patient’s/family’s perspective; able to focus in on the patient’s chief complaint and ask pertinent questions related to that complaint)</td>
<td>Communicates competently within systems and other care providers, and provides detailed information about patient care (e.g., demonstrates sensitivity to patient— and family—related information gathering/sharing to social cultural context; begins to engage patient in patient-based decision making, based on the patient’s understanding and ability to carry out the proposed plan; demonstrates empathic response to patient’s and family’s needs; actively seeks information from multiple sources, including consultations; avoids being a source of conflict; able to obtain informed consent [risks, benefits, alternatives, and expectations])</td>
<td>Communicates competently in difficult patient circumstances (e.g., able to customize emotionally difficult information, such as end-of-life or loss-of-limb discussions; supports patient and family; engages in patient-based decision making incorporating patient and family/cultural values and preferences)</td>
<td>Communicates competently in complex/adversarial situations (e.g., understand a patient’s secondary motivations in the treatment of his or her care—drug seeking, disability issues, and legal cases; able to sustain working relationships during complex and challenging situations, including transitions of care—treatment of a metastatic pathologic fracture; able to manage conflict with peers, subordinates, and superiors)</td>
<td>Demonstrates leadership in communication activities (e.g., coaches others to improve communication skills; engages in self-reflection on how to improve communication skills</td>
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Comments:  
Not yet achieved Level 1
| **Teamwork** (e.g., physician, nursing and allied health care providers, administrative and research staff) – Interpersonal and Communication Skills |
|---|---|---|---|---|---|
| **Level 1** | **Level 2** | **Level 3** | **Level 4** | **Level 5** |
| • Recognizes and communicates critical patient information in a timely and accurate manner to other members of the treatment team | • Supports and respects decisions made by team | • Able to facilitate, direct, and delegate team-based patient care activities | • Leads team-based care activities and communications | • Seeks leadership opportunities within professional organizations |
| • Recognizes and communicates role as a team member to patients and staff | • Actively participates in team-based care; Supports activities of other team members, communicates their role to the patient and family | • Understands the Operating Room team leadership role and obligations | • Able to identify and rectify problems with team communication | • Able to lead/facilitate meetings within organization/system |
| • Responds to requests for information | **Examples:** Hand-offs, transitions of care, communicates with other health care providers and staff members | **Examples:** Leads daily rounds, communicates plan of action with OR personnel | **Example:** Organizes and verifies hand-off rounds, coverage issues |

**Comments:**

Not yet achieved Level 1
Categorical PGY-1 Orthopaedic Resident
Under the Auspices of the General Surgery Program

Overview
The Resident is assigned to the General Surgery Residency Program during the first year of residency. The Resident spends six months on the Orthopaedic service and does one month block in each of Anesthesia, Neurosurgery, and Plastic Surgery*. PGY-1 residents are not on general surgery call during these subspecialty rotations. PGY-1 residents participate in the general surgery call schedule otherwise, except while on the orthopaedics rotation (at which time they are on the orthopaedics call schedule). PGY-1 residents will spend at least one block on the general surgery trauma rotation, a block in the SICU, and a block on general surgery. PGY-1 residents participate in the general surgery didactics (Wednesdays from 7:00 a.m. – 11:00 a.m.) schedule except when on the orthopaedics rotation and non-orthopaedic surgery rotations at which time they take part in the various orthopaedic didactic sessions (primarily Tuesdays from 7:00 a.m. – 1:00 p.m.).

PGY-1 Specific Goals and Objectives
At the end of the first year of Surgical Residency training, the Resident will be able to:

1. Demonstrate progress in the understanding of basic and clinical sciences as outlined in the ACS Guide for Graduate Surgical Education (Medical Knowledge).
2. Explain basic ethical principles inherent in surgical practice (Medical Knowledge, Professionalism, Systems-Based practice).
3. Present a coherent and precise patient case history, which includes the history and physical examination, differential diagnosis, and treatment plan (Patient Care, Medical Knowledge, Professionalism).
4. Demonstrate and document competence in performing basic invasive diagnostic and therapeutic procedures (Patient Care, Medical Knowledge).
5. Demonstrate the proper use of sterile techniques when performing or assisting with operative procedures (Patient Care, Medical Knowledge, Professionalism).
6. Demonstrate the ability to teach patients and their families about disease processes and their health (Patient Care, Practice-Based Learning and Improvement, Professionalism, Interpersonal and Communications Skills).
7. Recognize responsibility for teaching fellow Residents, Medical Students, and other health care providers, and develop effective teaching skills (Professionalism, Interpersonal and Communications Skills, Professionalism, Systems-Based Practice).
8. Develop and implement plans for study, reading, and research that promote personal and professional growth. (Medical Knowledge, Practice-Based Learning and Improvement.)
9. Use available technological resources to survey current surgical research. (Medical Knowledge, Professionalism, Systems-Based Practice and Improvement).
10. Coordinate and manage the basic care of the surgical patient. (Patient Care, Medical Knowledge, Systems-Based Practice).
11. Demonstrate understanding of cost-effective patient care. *(Patient Care, Medical Knowledge, Systems-Based Practice, Professionalism).*

12. Attend all Program-sponsored conferences unless excused. *(Professionalism, Medical Knowledge, Practice-Based Learning and Improvement).*

13. Prepare for and take the American Board of Orthopaedic Surgery In-Training Examination (OITE). *(Medical Knowledge, Practice-Based Learning and Improvement).*

14. Develop experience in the outpatient setting and continuity of patient care. *(Patient Care, Medical Knowledge, Systems-Based Practice, Practice-Based Learning and Improvement).*

* Guidelines, Goals and Objectives for the Neurosurgery, Plastic Surgery and Rheumatology rotations are included in this Curriculum Guide. Guidelines, logistics and principles of other general surgery rotations (including Trauma and SICU) can be found in the General Surgery program curriculum guide (http://hawaiiresidency.org/surgery/index.html)
Competency-Based Curriculum Guides by Rotation and Program Year
Plastic Surgery
at Queen’s Medical Center, PGY-1

Description of Rotation
During the general surgery training year, Orthopaedic Residents are provided an opportunity to investigate and experience the field of plastic surgery and to glean from it principles which will assist them as orthopaedic surgeons in practice, especially if they will be exposed to trauma. During this one-month rotation, the Resident will have the opportunity to evaluate, pre- and postoperatively, patients who are eligible for or who have undergone plastic surgical procedures. Residents will also gain competence in the use of microsurgical techniques and instruments. A 4-week Plastic Surgery rotation is required for Categorical Orthopaedic residents during the first year of training.

Length: 4 weeks of PGY-1 year
Location: The Queen’s Medical Center
Primary Supervisor: F. Don Parsa, M.D.
Contact Telephone #s: (808) 526-0303 (Office)
(808) 524-2575 (Physician’s Exchange)

Goals of the Rotation
Upon completion of the Plastic Surgery rotation, the Resident will be able to:

1. Demonstrate knowledge of the nature and principles of correction and reconstruction of congenital and acquired defects of the head, neck, trunk and extremities.
2. Manage the treatment of acute, chronic, and neoplastic defects not requiring complex reconstruction.

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. Significant leadership in running a patient centered service is expected. Residents are expected to:

Objectives
1. Outline the components necessary to develop a treatment plan, after completing a focused history and physical examination pertinent to the evaluation of congenital or acquired defects amenable to surgical correction or reconstruction, including a description of the appropriate diagnostic studies and any additional consultations needed to supplement the physical examination.
2. Review the surgical repair of superficial, incised, and lacerated wounds of the head, neck, trunk, and extremities.
3. Demonstrate knowledge of the systematic examination of the hand to assess motor and sensory function.
4. Demonstrate ability to appropriately harvest and apply skin grafts.
5. Contribute to the overall care of the plastic surgery patient including pre-operative evaluation, intra-operative intervention, and post-operative management.
6. Participate in the evaluation and formulation of treatment plans for hand injuries.
7. Act as a member of the surgical team, assisting or performing surgery as appropriate.
8. Apply and remove dressings of the head, neck, hand, trunk, and extremities, including:
   a. Occlusive
   b. No-occlusive
   c. Wet to dry
   d. Casts
   e. Alginate
   f. Colloidal
9. Debride and suture major non-facial wounds and burns

**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. Demonstrate an accurate and thorough understanding of various therapeutic options for vascular surgery conditions (conservative, endovascular, operative).
2. Demonstrate an understanding of the pathophysiology of thermal, chemical, and electrical burns, and describe the initial management for each type.
3. Acquire an understanding of resuscitation of a burned patient.
4. Acquire an understanding of the various types and indications for flaps, including an understanding of the anatomy of commonly used flaps in plastic surgery, especially in extremity reconstruction.
5. Acquire an understanding of various suture materials and various suturing techniques.
6. Demonstrate an understanding of normal skin anatomy.
7. Describe the physiology of various techniques of skin transplantation and the circulation of skin, entailing the use of tissue transplantation (including skin grafts or local skin flaps) in the management of traumatic or excised wounds.

**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. Appropriately use hospital information technology systems, to manage patient care and to access online medical information to effect high quality care.
3. Effectively use information technology and other resources to support one’s own ongoing self-education (DVD’s, CD’s, Vumedi, Etc.).
4. Facilitate the learning of medical and nursing students, and surgical technician students rotating in the Operating Rooms.
5. Attend, participate and take a leadership role in teaching conferences and rounds.
6. Demonstrate ability to utilize scientific studies to provide high quality plastic surgical reconstructive care.
7. Appropriately utilize Hospital information technology systems to manage patient care, and to access on-line medical information to deliver high quality care.
8. Participate actively in activities of the Department of Surgery (including all teaching conferences).
9. Participate in the Department Morbidity & Mortality conference and utilize information to further improve patient care.
10. Participate in teaching rounds and be able to present patients in an organized and complete fashion.

**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. Understand the multidisciplinary role of the Plastic Surgeon, Trauma Surgeon, Subspecialty physicians and Consultants, Trauma Nurse Coordinator, Nurses, Physician Assistants, Physical Therapists, Occupational Therapists, Speech Pathologists/Therapists, Rehabilitation Specialists, Social Services, and the Operating Room Team in the provision of safe, efficient, coordinated, and high quality reconstructive trauma care.
2. Demonstrate understanding of the importance of delivery of cost-effective health care (diagnostic evaluations, therapy) and the importance of coordination in rehabilitation and discharge planning for the trauma patient convalescing from a reconstructive procedure.
4. Work effectively with other services, health care agencies, and case managers.
5. Work to improve the system of medical care at Queen’s Medical Center.

**Professionalism Competency**

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

**Objectives**
1. Interact with patients and their families in a respectful, sensitive, and ethical manner.
2. Interact with members of the Plastic Surgery faculty and ambulatory clinic personnel in a respectful, responsible, and professional manner.
3. Demonstrate sensitivity, respect, and adherence to ethical principles when interacting with patients and their families.
4. Demonstrate non-judgmental sensitivity and responsiveness to the age, culture, disability status, and gender of patients and colleagues.
5. Show ethical/professional leadership by example.
6. Be self-aware and have knowledge of professional limits by practicing on-going medical educations and self improvement.

### 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. Demonstrate skill in effective and sensitive information exchange with patients, their families, and other members of the Multidisciplinary Trauma Team for trauma patients requiring plastic surgery consultation or reconstructive procedures; and for patients undergoing elective procedures (both Clinic-office-based and in the Hospital).
2. Demonstrate ability for accurate and timely information exchange between other members of the healthcare team, both verbally and in writing, with appropriate use of the medical record.

#### Implementation
While on this rotation, the Resident will spend as much time as possible in the Faculty Attending’s office evaluations patients for surgery and following patients who have previously undergone plastic and reconstructive surgical procedures. Residents will be asked to communicate their findings to the Attending for discussion and criticism. As soon as the Resident reports for this rotation, an office schedule will be worked out with the Faculty Attending so as not to miss any opportunities for this aspect of continuity of care.

The Resident will also be asked to fully assess and evaluate certain categories of patients, and to make detailed recommendations. Such cases would primarily deal with reconstructive aspects of plastic surgery, such as burns, various types of pathological scars, congenital and acquired deformities, and traumatic deformities. The Resident will act as first assistant on most of the operations; however, the Resident will act as the operating surgeon in basically all of the reconstructive procedures depending on their level of skill. Residents will also respond to emergency room calls during the day, and will evaluate the patients initially and discuss the findings and treatment plans with the Faculty Attending. In most instances, the Resident will act as primary surgeon for those patients admitted through the emergency room or treated in the emergency department.

Residents will also be required to spend on average one to three hours per week practicing microsurgical techniques as trained by the Faculty Attending. There is no on-call requirement for this elective.

The 4-week Plastic Surgery rotation will take place at The Queen’s Medical Center under the preceptorship of Dr. F.D. Parsa, and may include other faculty (Vincent Nip, M.D., Carl de los
Reyes, M.D.) as directed by Dr. Parsa. The Resident is to report to Dr. Parsa on the first day of the rotation.

**Required Readings**
As assigned by Dr. Parsa.
Reading materials and other rotation information will be provided by the surgery administrative staff prior to the rotation.

**Assessment Method (Residents)**
Residents performance will be subject to daily formative evaluation in the operating room and the clinic; the 360 degree evaluation process (using faculty and nurse managers) will take place at the end of each rotation. Semiannual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

**Assessment Method (Residents)**
Annual evaluations and assessment by the Program Director and Faculty. Annual resident confidential evaluation of program, and it rotations.
Neurosurgery
at Queen’s Medical Center, PGY-1

Description of Rotation
Despite the trend towards greater specialization in surgery, patients with underlying neurosurgical injury or illnesses are often seen and evaluated first by the general surgeon. In remote areas, general surgeons provide initial neurosurgical care because consultants are available only by phone, with medical center and direct neurosurgical support hours away. Failure to recognize central nervous system pathology in a patient with multi-system disease/trauma will often result in substantial mortality and irreversible morbidity. It is essential that the orthopaedic surgeon be familiar with basic neurologic assessment and has an understanding of common disease entities and diagnostic imaging modalities to provide optimal and timely care of the patient with illness involving the nervous system. A 4-week Neurosurgery rotation is required for Categorical Orthopaedic residents during the first year of training.

Length: 1 Block of PGY-I year
Location: The Queen’s Medical Center
Primary Supervisors: William Obana, M.D. 523-9993

Goals of the Rotation
Upon completion of the Neurosurgery rotation, the Resident will have the training and experience to enable them to recognize, stabilize, and initiate proper treatment of head and spine injuries as a result of trauma.

Additionally, the Resident will have an understanding of the relevant anatomy and physiology of the central, peripheral, and autonomic nervous system and their supporting elements. Residents will obtain the training necessary to recognize conditions which require referral to a Neurosurgeon on an emergent, urgent, and routine basis.

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. Significant leadership in running a patient centered service is expected. Residents are expected to:

Objectives
1. Demonstrate the ability to diagnose and manage disorders of the central nervous system that fall within the purview of general surgery.
2. Demonstrate the ability to evaluate and manage head and spine injuries.
3. Describe the components of a focused history and physical examination on patients with neurological or neurosurgical disease.
4. Discuss a differential diagnosis relating to the location and nature of the neuropathology.
5. Describe the characteristics of the various neuroradiologic procedures and the rationale for selecting them.
6. Outline the management of head injuries, to include:
   a. selection, priority, and performance of resuscitation efforts
   b. components and results of a baseline neurological examination to determine and evaluate change in the patient’s neurological status (including the Glasgow Coma Scale)
   c. clinical and radiographic diagnosis
   d. treatment of scalp wounds, skull fractures, intracranial hemorrhage, and brain swelling
   e. identification and selection of pharmacologic agents used to treat acute decompensation of the nervous system
   f. significance of a dilated pupil
7. Outline the management of injuries of the cervical spine, including:
   a. rationale for stabilizing the spine
   b. description and interpretation of the neurological signs of a fracture/dislocation at various levels in the cervical spine
   c. pathophysiological changes in a spinal cord injured patient.
8. Describe the pre- and postoperative management of the neurosurgical patient.

**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. Demonstrate general knowledge of the anatomy, physiology, and pathophysiology of the central, peripheral, and autonomic nervous system.
2. Understand factors influencing cerebral blood flow.
3. Understand intracranial compliance and intracranial pressure.
4. Understand the concepts of primary and secondary brain injury.
5. Understand indications for and appropriate technique for placement of intracranial pressure monitor and/or ventriculostomy.

**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 lifelong 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. Appraise and assimilate evidence from scientific studies to provide high quality neurological care.
3. Appropriately use hospital information technology systems to manage patient care and to access online medical information to effect high quality care.
4. Effectively use information technology and other resources to support one’s own ongoing self-education (DVDs, CDs, Vumedi etc)
5. Facilitate the learning of medical and nursing students, and surgical technician students rotating in the Operating Rooms.
6. Attend and participate and take a leadership role in teaching conferences and rounds

**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. Understand the multidisciplinary role of the Neurosurgeon, Neurointensivists, Surgical Intensivists, Trauma Surgeons, Nurses, Physical Therapists, Occupational Therapists, Rehabilitation Specialists, Social Services, Case Managers, and the Operating Room Team in the provision of safe and high quality neurosurgical care.
2. Serve as patient advocates for quality patient care
3. Work effectively with other services, health care agencies, and case managers
4. Work to improve the system of medical care at Queens Medical Center

**Professionalism**

**Competency**

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

**Objectives**

Interact with patients and their families in a respectful, sensitive, and ethical manner.

1. Interact with other members of the Neurosurgical Team and ambulatory clinic personnel in a respectful, responsible, and professional manner.
2. Demonstrate sensitivity, respect, and adherence to ethical principles when interacting with patients and their families.
3. Demonstrate non-judgmental sensitivity and responsiveness to the age, culture, disability status, and gender of patients and colleagues.
4. Show ethical/professional leadership by example.

**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. Demonstrate skill in effective information exchange with patients, their families, and other members of the Neurosurgical Team, in the trauma setting and for elective procedures.
2. Demonstrate ability for accurate and timely information exchange between other members of the healthcare team, both verbally and in writing, with appropriate use of the medical record.

Clinical Content
The clinical activities will include:
1. Performing detailed neurological examinations of patients in all states of consciousness.
2. Writing admission, diagnostic, and preoperative orders as directed by the Attending Faculty Neurosurgeon.
3. Reviewing all preoperative diagnostic studies with the Attending Faculty Neurosurgeon.
4. Becoming familiar with the modalities available for the diagnosis of neurosurgical disease, including plain x-rays, MRI, CT, and angiography.
5. Interpreting the results of neuroradiological procedures under supervision.
6. Participating in neurosurgical procedures and learning the skills used, including:
   a. bone work (craniotomy)
   b. hemostasis
   c. protection of neural tissue
   d. removal of specific lesions
   e. management of problems related to CSF circulation
   f. repair of dura and bone
7. Performing limited neurosurgical procedures under direction, such as:
   a. diagnostic lumbar puncture
   b. burr hole
   c. closure of scalp
   d. elevation of simple depressed skull fracture
   e. application and management of skeletal traction by tongs or halo
8. Managing postoperative neurosurgical patients.

Implementation
The 4 week Neurosurgery elective will take place at The Queen’s Medical Center under the preceptorship of Dr. William Obana, and will also include the following faculty: Drs. Calvin Kam, Michon Morita, Jon Graham, Leon Liem, Todd Thompson, and Daniel Donovan. The Resident is to report to Dr. Obana on the first day of the rotation. The following will be covered during the rotation:

2. Diagnostic studies:
   a. plain films of the spine
   b. computed tomography
   c. cerebral angiography
   d. magnetic resonance imaging (MRI).
3. Intracranial tumors.
4. Spontaneous intracranial hemorrhage.
5. Head and spine injuries.
6. Intracranial infection.
7. Spinal tumors.
8. Lumbar and cervical disc disease.

Required Readings
In order to maximize the resident's learning experience during the Neurosurgery rotation, Dr. Obana and his colleagues will assign pertinent chapters from: Handbook of Neurosurgery, Sixth Edition Mark Greenberg (2006)
Reading materials and other rotation information will be provided by the surgery administrative staff prior to the rotation.

**Assessment Method (Residents)**
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the 360 degree evaluation process (using faculty and nurse managers) will take place at the end of each rotation. Semiannual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

**Assessment Method (Program Evaluation)**
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
Rheumatology
at Kapiolani Medical Center at Pali Momi
and Kuakini Medical Center, PGY-1

Description of Rotation
During the general surgery training year, Orthopaedic Residents are provided an opportunity to investigate and experience the field of rheumatology and to glean from it principles which will assist them as orthopaedic surgeons in practice. This one-month rotation will expose the Orthopaedic PGY-1 Resident to the basic principles of rheumatology and common rheumatologic diseases (including diagnostic evaluation and management) as they apply to orthopaedic surgery. During this one-block rotation, the Resident will have the opportunity to evaluate and treat patients with a variety of rheumatologic conditions.
A 4-week Rheumatology rotation is required for Categorical Orthopaedic residents during the first year of training.

Length: 4 weeks of PGY-1 year
Location: Kapiolani Medical Center at Pali Momi, Dr Oki’s Office
          Kuakini Medical Center, Dr Oki’s Office
Primary Supervisor: Alan Oki, M.D.
Contact Telephone: 484-2042 (Pali Momi)
                   532-2042 (Kuakini)

Goals of the Rotation

Upon completion of the Rheumatology rotation, the Resident will be able to:

1. Demonstrate knowledge of the nature and principles of correction and reconstruction of congenital and acquired defects of the head, neck, trunk, and extremities.
2. Manage the treatment of acute, chronic, and neoplastic defects not requiring complex reconstruction.

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. Significant leadership in running a patient centered service is expected. Residents are expected to:

Objectives
1. Clinically evaluate and develop a differential diagnosis of monoarticular and polyarticular arthritis.
2. Evaluate radiographs to classify arthritis.
3. Recognize clinical signs and symptoms of systemic disease presenting with arthritis, and develop a differential diagnosis and order appropriate diagnostic tests to evaluate the patient.
4. Evaluate the long-term outcomes of orthopaedic procedures on patients in a Rheumatology practice.
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. Understand the immunology of inflammatory arthritis, the basis of serologic testing, and medical treatment of arthritic conditions.
2. Demonstrate an understanding of the natural history and medical treatment of: rheumatoid arthritis, juvenile rheumatoid arthritis, systemic lupus erythematosis, crystal-induced arthritis, psoriatic arthritis, Reiter's syndrome, ankylosing spondylitis, arthritis related to infections, osteoporosis; and common soft tissue pain syndromes.

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. Appropriately use hospital information technology systems to manage patient care and to access online medical information to effect high quality care.
3. Demonstrate the ability to use scientific studies to provide high quality rheumatologic care.
4. Effectively use information technology and other resources to support one’s own ongoing self-education (DVDs, CDs, Vumedi etc).
5. Appropriately utilize Hospital information technology systems to manage patient care, and to access on-line medical information to deliver high quality care.
6. Participate actively in activities of the Department of Surgery (including all teaching conferences).
7. Participate in the Department Morbidity & Mortality conference and utilize information to further improve patient care.
8. Facilitate and support the education of medical students, other residents and other healthcare team members that the Orthopaedic resident comes into contact with.

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. Understand the multidisciplinary role of the Rheumatologist, Orthopaedic Surgeon, Physical Therapists, Occupational Therapists, Rehabilitation Specialists, and Social Services personnel in the provision of safe and high quality care.
2. Serve as patient advocates for quality patient care.
3. Work effectively with other services, health care agencies, and case managers.

Professionalism

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

Objectives

Interact with patients and their families in a respectful, sensitive, and ethical manner.
1. Interact with members of the faculty and ambulatory clinic personnel in a respectful, responsible, and professional manner.
2. Demonstrate sensitivity, respect, and adherence to ethical principles when interacting with patients and their families.
3. Demonstrate non-judgmental sensitivity and responsiveness to the age, culture, disability status, and gender of patients and colleagues.
4. Show ethical/professional leadership by example.
5. Be self-aware and have knowledge of professional limits by practicing on-going medical education and self-improvement.

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. Demonstrate skill in effective and sensitive information exchange with patients, their families, and other members of the Multidisciplinary Trauma Team for trauma patients requiring plastic surgery consultation or reconstructive procedures; and for patients undergoing elective procedures (both Clinic-office-based and in the Hospital).
2. Demonstrate ability for accurate and timely information exchange between other members of the healthcare team, both verbally and in writing, with appropriate use of the medical record.

Implementation

Four 1-hour didactic lectures review the immunology, natural history, diagnostic criteria, and treatment of rheumatic diseases. Examples of radiographs are reviewed. Slides from the American College of Rheumatology clinical slide collection are used to review clinical features of early and late disease, histology, and radiology of rheumatic diseases. Case examples are reviewed.
A four week clinical rotation allows the Resident to evaluate patients presenting with rheumatic conditions. They will formulate a differential diagnosis, a diagnostic plan, and an initial treatment plan that will be reviewed and implemented by the Rheumatology Attending Physician. Residents will examine patients and evaluate radiographs and laboratory tests of patients with rheumatic diseases in early and late stages of treatment. Many of these patients have had orthopaedic procedures including arthroplasties, arthrodesis, and synovectomies. Residents will review operative notes, pre-and postoperative x-rays, and interview patients regarding their experience with orthopaedic procedures and the impact on their rheumatic disease and quality of life. Residents will perform preoperative evaluations on all patients who are scheduled to undergo orthopaedic procedures during the rotation.

The 4 week Rheumatology rotation will take place at Dr. Oki’s offices at Pali Momi and Kuakini. The Resident is to report to Dr. Oki on the first day of the rotation.

Required Readings
Reading materials and other rotation information will be provided by the surgery administrative staff prior to the rotation.

**Assessment Method (Residents)**
Resident performance will be subject to daily formative evaluation in the attending’s office and the clinic; the evaluation process (using faculty) will take place at the end of each rotation. Semiannual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

**Assessment Method (Program Evaluation)**
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
Adult Orthopaedic & Fracture/Trauma Rotation at Queen’s PGY-2

Description of Rotation

The Queens Medical Center (QMC) is a level II trauma center, which services multisystem trauma patients from the entire state, via a trauma hotline and air ambulances. The PGY-2 residents are on the trauma service at QMC for their entire year *. They are an integral part of the trauma service. Four compensated faculty members participate in trauma call. These faculty attending supervise and scrub with residents on trauma cases. Residents also have two half-day clinics per week, one in the Queen Emma Clinic, and one (or two) in the faculty traumatologist’s office. Patient volume is largest in the attendings’ clinics. When on call the orthopaedic resident interacts with the general surgeon(s) on call and follows patients operatively, and postoperatively, including in the SICU. Every effort is made to have resident follow their patients in the outpatient setting, within the 80 hour work week rules. Physician Assistants are provided to support the trauma service so as to maximize the high educational value of the rotation. PGY-2 residents are on-call Q4 under normal circumstances. Residents have excellent trauma case volume and case mix including all multisystem trauma patients admitted to the QMC.

* PGY-2 residents have one month during the academic year on a subspecialty rotation (Hand or Total Joints); during this month a PGY-3 participates in the AO/FT rotation (including call).

Clinical Milestones Addressed During This Rotation:

- Ankle Arthritis
- Ankle Fracture
- Diaphyseal Femur & Tibia FX
- Distal Radius Fracture
- Adult Elbow Fracture
- Hip Fracture
- Diabetic Foot
- Metastatic Bone Lesion
- Meniscal Tear
- Hip & Knee Osteo Arthritis
- Anterior Cruciate Ligament
- Rotator Cuff Injury

Length: 12 months of PGY-II year
Location: Queen’s Medical Center, Queen Emma Clinic, Faculty Attendings’ Offices
Primary Supervisors: Robert Atkinson, M.D. (Office: 521-8128)
Morris Mitsunaga, M.D. (Office: 522-9633)
Patrick Murray, M.D. (Office: 973-3917)
Kevin Christensen, M.D. (Office: 522-9633)
J. Kimo Harpstrite, M.D. (Office: 536-2261)
Alexander Garber, M.D. (Office: 548-7033)
Jason Kaneshige, M.D. (Office: 548-7033)
Lorrin Lee, M.D. (Office: 548-7033)
PGY-5 Chief Resident A (Pager: call the program offices)

Site Coordinator: Robert E. Atkinson, 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. Perform a comprehensive orthopaedic evaluation and physical exam for trauma patients admitted to QMC, including cases involving multisystem trauma, pelvic trauma, SCI, cervical and thoracolumbar spinal injury, and appendicular long bone injuries.
4. Formulate a medical problem list, with prioritization of medical issues to facilitate the development of treatment plans for multisystem trauma patient(s).
5. Formulate surgical treatment goals for long bone fracture and pelvic fractures.
7. Make an early diagnosis and provide prompt treatment of acute compartment syndrome in the upper and lower extremities.
8. Integrate the clinical presentation with imaging data to make decisions regarding operative care.
9. Assess postoperative progress of trauma patients (including SICU course), arthroplasty patients, and patients undergoing elective reconstructive bone and joint surgery.
10. Diagnose and Treat postoperative complications, including wound infections and skin loss, DVT, PE, and shock.
11. Prescribe and/or consult with allied health specialists in PT, OT, Vocational counseling, psychiatry and social work as appropriate.
12. Effectively counsel patients and families and caregivers about the plan of care.
13. Be a vital part of the inpatient team under the supervision of attending faculty.
14. Be aware of, identify and provide weight-bearing precautions and postoperative goals for therapists.
15. Recognize and diagnose peripheral nerve and vascular injuries and provide counseling regarding recommended treatment.
16. Diagnose and treat common joint dislocations in the emergency department setting (e.g. shoulder, elbow, hip, ankle).
17. Properly insert Steinmann pins for traction, including proximal tibia, distal femur, calcaneal and olecranon pins.
18. Properly diagnose (by exam and evaluation of imaging studies), and discuss the methods of treatment for common long bone and periarticular fractures, and injuries to the hand, foot, spine and pelvis.
19. Diagnose and manage most open wounds, including bites, and wounds associated with open fractures.
20. Apply well molded casts, splints, and dressings for most orthopaedic
conditions. (For example, long and short arm and leg casts/splints, R. Jones dressing).

21. Perform joint aspirations for the ankle, knee, hip, wrist, elbow and shoulder, and obtain appropriate lab analysis of aspirate, assess laboratory results and formulate appropriate treatment recommendations.

22. Properly prepare and drape patients for surgical procedures.

23. Adeptly close surgical wounds, place drains, harvest and apply skin (stsg) grafts, and apply appropriate post surgical dressing.

**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. Define the classification systems for long bone and periarticular injuries.
2. Discuss and understand fracture physiology and the biomechanics of long bone injuries.
3. Describe the treatment principles of fracture fixation, including screw and plate biomechanics, principles of ring fixateur use, and indications for the use of locking plate(s).
4. Define the physiology of compartment syndrome, relevant anatomy and operative approaches.
5. Promptly identify common post operative complications and discuss their prevention.
6. Complete cadaver dissection and cite common surgical exposures used in the fixation of long bone injuries.
7. Define the characteristics of various joint fluid aspirates (inflammatory, infectious, etc.).
8. Describe common mechanical/technical errors in the fixation of long bone and periarticular fractures.
9. Understand basic bone metabolism, including disease states of osteoporosis and osteomalacia.
10. Cite levels of evidence in the orthopaedic case-driven medical literature.
11. Understand and apply the basic biomedical statistics in evaluation of the medical literature.
12. Achieve a score of the 50%'ile or better in OITE.
13. Describe the clinical presentations and appropriate treatments for various common tendonopathies and ligament injuries of the shoulder, elbow, knee and ankle.
14. Differentiate between patients who have non operative versus operative fractures and conditions.
15. List the principles of CRPS and other pain syndromes not typically helped by surgery.
16. Define and discuss soft tissue injuries of the knee and shoulder.
17. Classify various nerve injuries, with prognosis and appropriate treatment strategies.
18. Describe the physiology of wound and fracture healing.
19. Assess and apply the medical literature to help prevent DVT and PE in the orthopaedic patient.

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 lifelong 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, especially as it relates to trauma and reconstructive diagnoses and treatments.
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, Vumedi etc)
6. Contribute to discussions concerning patient care with other health care professionals, attendings, including trauma team and consultants
7. Attend and participate in teaching conferences and rounds
8. 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 trauma service setting
3. Integrate the care of trauma patients in inpatient settings
4. Use diagnostic and therapeutic procedures appropriately and judiciously
5. Evaluate risks, benefits, limitations, and costs of patient care
6. Provide data for M&M conferences to positively affect patient care
7. Participate in clinical pathways designed to improve patient outcomes
8. Serve as patient advocates in dealing with system complexities
9. Serve as patient advocates for quality patient care
10. Work effectively with other services, health care agencies, and case managers
11. Work to improve the system of medical care at the Queens Medical Center

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, informed consent, provision for the withholding of care, and interactions with insurance companies or disability agencies
5. Consider the effects of personal, social, and cultural 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 (monitored by medical records department and Program Director)
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 orthopaedic trauma patients

**Teaching Methods**
PGY-2 residents on the Adult Orthopaedics and Fracture/Trauma service function with a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences.

**Assessment Method (Residents)**
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the 360 degree evaluation process (using faculty, nurse managers, residents, medical student and patient evaluations) will take place at the mid-point and end of each semi-annual period (September, December, March, June). Semi-annual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

**Assessment Method (Rotation Evaluation)**
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
Adult Orthopaedic and Fracture/Trauma Service at Queen's PGY-5

Description of Rotation
The Queens Medical Center (QMC) is a level II trauma center which services multisystem trauma patients from the entire state, via a trauma hotline and air ambulances. The PGY-5 residents are on the trauma service at QMC for six months of their PGY-5 year. They are an integral part of the trauma service, scrubbing on complex trauma cases, running the post-trauma Queen Emma Clinic, and managing Operating Room assignments for all orthopaedic residents at Queens. While on service, the chief resident also performs significant teaching, administrative and systems based practice, and practice based learning responsibilities (Morbidity and Mortality conferences, back-up coverage for PGY-1 resident in the emergency department, leading conferences, assisting in journal club, participation at QMC Orthopaedic Executive Committee meetings, etc.). Four compensated faculty members participate in trauma call. These faculty attendings supervise and scrub with residents on trauma cases. Residents also have two one half-day clinics per week, one in the Queen Emma Clinic, and one in the faculty traumatologist’s private office. Patient volume is largest in the attendings’ clinics. When on call the chief orthopaedic resident interacts with the general surgeon(s) on call, backs up “interns” on call, directs pre-operative, intra-operative and post-operative care for trauma patients with mandatory attending coverage, including in the SICU. Every effort is made to have resident follow their patients in the outpatient setting, within the 80 hour work week rules. Physician Assistants are provided to support the trauma service so as to maximize the high educational value of the rotation. Residents have excellent trauma case volume and case mix including all multisystem trauma patients admitted to the QMC. Chief residents will perform more complex pelvic and multiple long bone fracture surgery, during their six months as chief. Participation in adult reconstructive surgical patient care is an integral part of the rotation as well.

Clinical Milestones Addressed During This Rotation:
- Ankle Arthritis
- Ankle Fracture
- Diaphyseal Femur & Tibia FX
- Distal Radius Fracture
- Adult Elbow Fracture
- Hip Fracture
- Diabetic Foot
- Metastatic Bone Lesion
- Meniscal Tear
- Hip & Knee Osteo Arthritis
- Anterior Cruciate Ligament
- Rotator Cuff Injury

Length: 6 months of PGY-V year
Location: Queen’s Medical Center, Queen Emma Clinic, Faculty Attendings’ Offices
Primary Supervisors:
- Robert Atkinson, M.D. (Office: 521-8128)
- Morris Mitsunaga, M.D. (Office: 522-9633)
- Patrick Murray, M.D. (Office: 973-3917)
- Kevin Christensen, M.D. (Office: 522-9633)
- J. Kimo Harpstrite, M.D. (Office: 536-2261)
- Alexander Garber, M.D. (Office: 548-7033)
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. Significant leadership in running a patient centered service is expected. Chief 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. Be able to perform a comprehensive orthopaedic evaluation and physical exam for trauma patients admitted to QMC, including cases involving multisystem trauma, pelvic trauma, SCI, cervical and thoracolumbar spinal injury, and appendicular long bone injuries.
4. Be able to formulate a medical problem list, with prioritization of medical issues, to facilitate the development of treatment plans for multisystem trauma patients.
5. Perform accurate and careful triage of trauma patients and coordinate their plan of care with attending faculty.
6. Learn to formulate surgical treatment goals for long bone and pelvic fractures, and understand prognoses for recovery in the multisystem trauma patient.
7. Learn to prevent intra-operative technical complications during the treatment of long bone injuries, pelvic surgery, and complex reconstructive (cold trauma) surgery.
8. Make an early diagnosis and provide prompt treatment of acute compartment syndromes in the upper and lower extremities, with direction/instruction being given to junior residents.
9. Learn to integrate the clinical presentation with imaging data to make decisions regarding operative care.
10. Be able to assess postoperative progress of trauma patients (including SICU course), arthroplasty patients, and patients undergoing elective reconstructive bone and joint surgery.
11. Recognize, diagnose and treat postoperative complications, including wound infections and skin loss, DVT, PE, and shock.
12. Learn to prescribe and/or consult with allied health specialists in PT, OT, Vocational counseling, psychiatry, and SW as appropriate, and coordinate service referrals to all allied health personnel.
13. Be able to effectively counsel patients and families and caregivers about the plan of care.
14. Be a vital part and leader of the inpatient team under the supervision of attending faculty.
15. Be aware of, identify, and provide weight-bearing precautions and postoperative goals for therapists.
16. Recognize and diagnose peripheral nerve and vascular injuries and provide counseling regarding recommended treatment.
17. Be able to diagnose and treat common joint dislocations in the emergency department.
setting (e.g., shoulder, elbow, hip, ankle), and give instruction to and monitor clinical acumen of junior level residents on trauma call.

18. Learn to properly insert Steinmann pins for traction—including proximal tibia, distal femur, calcaneal and olecranon pins.

19. Learn to properly diagnose (by exam and evaluation of imaging studies), and discuss the methods of treatment for common long bone and periarticular fractures, and injuries to the hand, foot, spine and pelvis.

20. Be able to diagnose and manage all open wounds, including bites, and wounds associated with open fractures. Understand and use free flap coverage principles when appropriate, with necessary consultants.

21. Learn to apply well molded casts, splints, and dressings for most orthopaedic conditions. (for example, long and short arm and leg casts/splints, R. Jones dressing).

22. Perform joint aspirations for the ankle, knee, hip, wrist, elbow and shoulder, obtain appropriate lab analysis of aspirate, assess laboratory results, and formulate appropriate treatment recommendations.

**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. Define and teach the classification systems for long bone and periarticular injuries.

2. Discuss and understand and teach fracture physiology and the biomechanics of long bone injuries.

3. Describe the treatment principles of fracture fixation, including screw and plate biomechanics, principles of ring fixateur use, and indications for the use of locking plate(s).

4. Define the physiology of compartment syndrome, relevant anatomy, and operative approaches. Assist junior level residents in improving their knowledge re compartment syndrome.

5. Promptly identify common post operative complications and discuss their prevention.

6. Complete cadaver dissection and cite common surgical exposures used in the fixation of long bone injuries.

7. Define the characteristics of various joint fluid aspirates (inflammatory, infectious, etc).

8. Describe common mechanical/technical errors in the fixation of long bone and periarticular and pelvic fractures.

9. Understand bone metabolism, including disease states of osteoporosis and osteomalacia.

10. Cite levels of evidence in the orthopaedic case-driven medical literature.

11. Understand and apply biomedical statistics in evaluation of the medical literature.

12. Achieve a score of the 50’tile or better in the OITE.

13. Describe the clinical presentations and appropriate treatments for various common tendonopathies, and ligament injuries of the shoulder, elbow, knee and ankle.

14. Differentiate between patients who have non operative versus operative fractures and conditions.

15. List the principles of CRPS and other pain syndromes not typically helped by surgery.

16. Define and discuss soft tissue injuries of the knee and shoulder.
17. Classify various nerve injuries, with prognosis, and appropriate treatment strategies.
18. Describe and teach the physiology of wound and fracture healing.
19. Assess and apply the medical literature to help prevent DVT and PE in the orthopaedic patient.
20. Participate in at least one board review course.

**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 lifelong 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. Lead OITE review sessions.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to trauma and reconstructive diagnoses and treatments.
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, Vumedi etc).
6. Lead discussions concerning patient care with other health care professionals, attendings, including trauma team and consultants.
7. Attend and participate and take a leadership role in teaching conferences and rounds.
8. Produce a pre-rotation list of specific goals and objectives for each rotation; share these goals and objectives with the Program Director and faculty preceptors; track progress towards achieving these goals and objectives; and report on the accomplishments.
9. Use computer based portfolio to track and catalogue operative cases and “technical pearls”, especially for complex cases.

**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 trauma service setting. Understand how mentoring influences junior residents.
3. Integrate, and lead in the care of trauma and reconstructive patients on service.
4. Use diagnostic and therapeutic procedures appropriately and judiciously.
5. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of
7. Participate in clinical pathways designed to improve patient outcomes
8. Serve as patient advocates in dealing with system complexities
9. Serve as patient advocates for quality patient care
10. Work effectively with other services, health care agencies, and case managers
11. Work to improve the system of medical care at Queens Medical Center

**Professionalism**

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

**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, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies
5. Consider the effects of personal, social, and cultural 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.
7. Show ethical/professional leadership by example.

**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, residents and attendings.
2. Complete dictations and chart notes in a timely manner (monitored by medical records department and Program Director)
3. Discuss diagnoses, prognoses, and treatment options clearly and accurately to patients, and attendings/consultants.
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 orthopaedic trauma patients

**Teaching Methods**
PGY-5 residents on the Adult Orthopaedics and Fracture/Trauma service function with a
1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences.

**Assessment Method (Residents)**
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the 360 degree evaluation process (using faculty, nurse managers, residents, medical student and patient evaluations) will take place at the mid-point and end of each semi-annual period (September, December, March, June). Semi-annual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

**Assessment Method (Rotation Evaluation)**
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
Adult Orthopaedic & Fracture/Trauma Rotation at Tripler Army Medical Center, PGY-3

**Description of Rotation**
The Tripler Army Medical Center (TAMC) is a level III trauma center which allows maturation and growth of the resident by increasing decision making responsibilities in the emergency room and clinical settings. The PGY-3 residents are in the trauma service at TAMC for a four month rotation. The resident runs his own fracture and emergency room follow up clinic with faculty support, where a wide variety of adult and pediatric fractures and soft tissue injuries are evaluated and treated. Residents are also assigned to one of the Tripler operative services (teams) and scrubs at least one day per week. Night call is shared on a rotational basis with the Tripler Orthopaedic residents. Any leave [Vacation or Educational/Conference is limited to seven days while on the Tripler rotation (exceptions to this policy will be discussed individually with Dr. Ryan)].

**Clinical Milestones Addressed During This Rotation:**
- Ankle Arthritis
- Ankle Fracture
- Diaphyseal Femur & Tibia FX
- Distal Radius Fracture
- Adult Elbow Fracture
- Hip Fracture
- Diabetic Foot
- Metastatic Bone Lesion
- Meniscal Tear
- Hip & Knee Osteo Arthritis
- Anterior Cruciate Ligament
- Rotator Cuff Injury
- Subspecialty Dependent

Length: 4 months of PGY-III year (July – October or March – June)
Location: Tripler Army Medical Center
Primary Supervisors: Paul Ryan, M.D., Tripler Orthopaedic Program Director
Contact Telephone #: 433-3557 (Ms. Sherry Pico, Coordinator)

**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 information (history) using effective questioning and listening skills.
3. Efficiently and effectively assess pediatric and adult fractures, dislocations, and sprains in the outpatient setting.
4. Manage a busy orthopaedic outpatient fracture clinic and learn to evaluate, triage, and treat a wide spectrum of musculoskeletal injuries, in an active duty
military population (and their dependants).

5. Assess, diagnose and treat common orthopaedic overuse syndromes of musculoskeletal system.

6. Be able to effectively counsel patients and families and caregivers about the plan of care.

7. Prescribe and/or consult with allied health specialists in Physical Therapy, Occupational Therapy, Vocational counseling, Psychiatry, and Social Work as appropriate.

8. Recognize and diagnose peripheral nerve and vascular injuries and provide counseling regarding recommended treatment.

9. Make an early diagnosis and provide prompt treatment of acute compartment syndromes in the upper and lower extremities.

10. Be a vital part of the outpatient clinic and operative service teams under the supervision of attending faculty.

11. Be able to diagnose and treat common joint dislocations in the emergency department setting (e.g., shoulder, elbow, hip, and ankle).

12. Apply well molded casts, splints, and dressings for most orthopaedic conditions (e.g., long and short arm and leg casts/splints, R. Jones dressing).

13. Increase diagnostic accuracy of significant shoulder and knee ligament injuries.

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. Use common classification systems for long bone, periarticular injuries, and ligamentous injuries.
2. Know and cite peer review literature that pertains to the patients treated while on call.
3. Recommend treatment plans for specific injuries based on literature reviews. Be able to defend therapeutic recommendations based on cited articles.
4. Provide article citations at morning report during patient presentations.
5. Defend recommended operative plan at pre operative conference, with appropriate literature citations.
6. Cite levels of evidence in the literature cited to support treatment.
7. Differentiate between patients who have non operative versus operative fractures and conditions. Use knowledge of appropriate bracing techniques in fracture (non operative) treatment.
8. Use knowledge of best practices for treatment of ligamentous injuries of ankle, knee, shoulder and elbow. Cite references that apply.

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 faculty and chief residents at Tripler.
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, especially as it relates to patients seen in clinic or on call.
4. Effectively use information technology (Tripler Computer systems) to access and manage patient information.
5. Effectively use information technology and other resources to support one’s own ongoing self-education (DVDs, CDs, Vumedi etc).
6. Contribute to discussions concerning patient care with other health care professionals, attendings, including trauma team and consultants.
7. Attend and participate in teaching conferences and rounds.
8. Produce a pre-rotation list of specific goals and objectives for each rotation; share these goals and objectives with the Program Director and faculty preceptors; track progress towards achieving these goals and objectives; and report on the accomplishments.
9. Pursue a research project (optional).

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. Respect the military atmosphere of the medical center.
3. Assess how one’s own actions affect others, especially in the clinic and E.R. settings.
4. Integrate the care of patients in inpatient settings.
5. Use diagnostic and therapeutic procedures appropriately and judiciously.
6. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care.
7. Provide data for M&M conferences to positively affect patient care.
8. Participate in clinical pathways designed to improve patient outcomes.
9. Serve as patient advocates in dealing with system complexities.
10. Serve as patient advocates for quality patient care.
11. Work effectively with other services, health care agencies, and case managers.
12. Work to improve the system of medical care at Tripler Medical Center.

Professionalism

Competency
Residents must demonstrate commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to:
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, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies.
5. Consider the effects of personal, social, and cultural 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.
7. Understand rules and constraints in the military environment.

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, and supervising physicians.
2. Complete dictations and chart notes in a timely manner (monitored by medical records department and Program Director).
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 orthopaedic patients at Tripler.

Teaching Methods
PGY-3 residents on the Tripler Fracture/Trauma service function with a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences. A disciplined respectful military environment fosters self-reliance and critical self-analysis.

Assessment Method (Residents)
Resident performance will be subject to daily formative evaluation in the operating room and the clinic; a formative counseling session is held early in the rotation with the primary supervisor (Dr. Ryan or subspecialty preceptor). The evaluation process (using faculty and nurse manager evaluations) will take place at the mid-point and end of the rotation. Semi-annual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

Assessment Method (Rotation Evaluation)
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
Bone & Joint Rotation
At Straub Clinic & Hospital, PGY-3

Description of Rotation
The rotation at the Straub Bone & Joint Center is made up of four services: Shoulder & Elbow, Sports Medicine, Foot & Ankle, and Total Joint (minimally invasive).
- The resident will be asked to choose a major and a minor interest from the above three services.
- The resident will work closely with the surgeon on the service of their major interest attending all clinics and surgeries.
- The resident will fill the remainder of their schedule with either clinic or surgeries from the service of minor interest.

If the resident does not select a major service and interest, the typical weekly schedule assignment will be as follows:

<table>
<thead>
<tr>
<th>Day of the Week</th>
<th>Morning</th>
<th>Afternoon</th>
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<tbody>
<tr>
<td>Monday:</td>
<td>Weldon – Clinic</td>
<td>Nakasone – Surgery</td>
</tr>
<tr>
<td>Tuesday:</td>
<td>Academics</td>
<td>Nakasone – Surgery</td>
</tr>
<tr>
<td>Wednesday:</td>
<td>Weldon – Surgery</td>
<td>Weldon – Surgery</td>
</tr>
<tr>
<td>Thursday:</td>
<td>Chang – Clinic</td>
<td>Weldon – Clinic</td>
</tr>
<tr>
<td>Friday:</td>
<td>Weldon – Clinic</td>
<td>Chang – Surgery</td>
</tr>
<tr>
<td>Saturday:</td>
<td>Weldon, Nakasone or Chang – Clinic</td>
<td></td>
</tr>
<tr>
<td>Sunday:</td>
<td>Day off</td>
<td></td>
</tr>
</tbody>
</table>

Clinical Milestones Addressed During This Rotation:
- Hip & Knee Osteo Arthritis
- Hip Fracture
- Metastatic Bone Lesion
- Anterior Cruciate Ligament
- Meniscal Tear
- Rotator Cuff Injury
- Adult Elbow Fracture

Length: One month of PGY-III year
Location: Straub Clinic & Hospital
Primary Supervisors:
- Spencer Chang, M.D. – Sports Medicine/Foot & Ankle Service (Office: 522-3272)
- Cass Nakasone, M.D. – Total Joint Service (Office: 522-3273)
- Edward Weldon, M.D. – Shoulder & Elbow Service (Office: 522-3274)
- Nick Crawford, M.D. (Office: 548-7033)

Rotations at the Straub Bone & Joint Center are available as electives for PGY-5 residents that have completed ABOS and RRC obligations. Advance notice is required as are the production of resident specific goals and objectives.

I. Shoulder and Elbow Service

Edward Weldon, M.D. is the supervising attending for the Shoulder and Elbow Service.
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 pathology, degenerative arthritis 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. Learn shoulder/elbow injury related medical inquiry to determine mechanism of injury, related information (performance needs and goals), and functional impairments.
3. Be able to perform a comprehensive orthopaedic evaluation and physical exam for traumatic, degenerative, and overuse injuries to the shoulder and elbow.
4. Learn to integrate the clinical presentation with imaging data to make decisions regarding operative care (radiographs, MRI, and CT).
5. Be able to formulate a medical and surgical problem list delineating goals to be achieved and complications to be avoided when reconstructive surgery is performed.
7. Make an early diagnosis and provide prompt treatment of acute post operative complications, including nerve palsy, DVT, PE, wound dehiscence, infection, and instability.
8. Be able to assess postoperative progress of patients, who have undergone arthroscopic or open operative treatment.
9. Learn to prescribe in hospital and outpatient PT, utilizing standard post operative protocols for patients undergoing shoulder stabilization, rotator cuff surgery, and elbow MCL reconstruction.
10. Be able to effectively counsel patients, families and caregivers about the plan of care.
11. Be a vital part of the shoulder/elbow team under the supervision of attending faculty.
12. Be able to diagnose common degenerative injuries to shoulder and elbow.
13. Participate in pre and post operative clinics with attending faculty.
15. Learn to properly prepare and drape patients for elbow/shoulder procedures.
16. Learn to perform diagnostic and operative shoulder and elbow open reconstructive procedures (ligament reconstructions, resurfacing, and joint replacement).
17. Participate in open stabilization procedures for shoulder and elbow instabilities.
18. Template radiographs as part of the preoperative process, when appropriate.

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. Identify and understand natural history of shoulder and elbow degenerative, infectious, and traumatic disorders.
2. Discuss and understand the biomechanics of shoulder and elbow and their instability states.
3. Know and describe various open treatments for shoulder and elbow degenerative arthritis.
4. Know and be able to use various implants for shoulder and elbow arthroplasty based on anatomical and pathological patient characteristics and treatment goals.
5. Promptly identify common post complications and discuss their prevention.
6. Learn and use evidence based postoperative therapy regimens during the postoperative period.
7. Complete cadaver dissection of shoulder and elbow and cite common surgical exposures used during shoulder and elbow reconstructive procedures.
8. Know and be able to cite outcome studies for shoulder and elbow arthroplasties.
9. Know work up and treatment algorithms for shoulder and elbow infected arthroplasty.
10. Know and use post operative protocols for total shoulder and elbow arthroplasty.
11. Differentiate patients who are best treated by non operative means.
12. Understand and state radiographic goals to be achieved during shoulder and elbow arthroplasty.

**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 lifelong learning. Residents are expected to develop skills and habits to be able to:

**Objectives:**
1. Evaluate one’s own knowledge, incorporating feedback from others, especially the faculty.
2. Modify self-directed learning appropriately, including feedback provided from the OITE results, as it pertains to reconstructive items on exam.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to shoulder and elbow injuries and reconstructive treatments.
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 (Arthroscopy DVDs, CDs, Vumedi, etc).
6. Contribute to discussions concerning patient care with other health care professionals, attendings, and consultants.
7. Attend and participate in teaching conferences and rounds.
8. Produce a pre-rotation list of specific goals and objectives; share these goals and objectives 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 shoulder service setting.
3. Evaluate interactions with patients and ancillary personnel.
4. Integrate the care of patients with arthrosis and injuries. Use clinical pathways.
5. Use diagnostic and therapeutic procedures appropriately and judiciously.
6. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care.
7. Provide data for M&M conferences to positively affect patient care.
8. Participate in clinical pathways designed to improve patient outcomes.
9. Serve as patient advocates in dealing with system complexities.
10. Serve as patient advocates for quality patient care.
11. Work effectively with other services, attendings and consultants.
12. Work to improve the system of medical care at Straub Hospital and improve care for community patients.
13. Provide information on systems issues that may improve patient care (this performed at department meetings).

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**Professionalism**

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

**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, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies.
5. Consider the effects of personal, social, and cultural 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.
7. Understand and be empathetic to special needs and concerns of the patient, who is dealing with arthritis, and is scheduled for surgical reconstruction.

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**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 (monitored by medical records department and Program Director).
3. Discuss diagnoses, prognoses, and treatment options clearly and accurately to patients and trainers.
4. Synthesize information and present clinical and diagnostic information clearly to colleagues, trainers and coaches.
5. Utilize effective listening skills.
6. Communicate and interact with staff/team in respectful, responsive manner.
7. Promote teamwork, and coordinate the work up and treatment of patients on the shoulder service.

Teaching Methods
PGY-3 residents on the Adult Shoulder Arthroplasty and Reconstructive Service function with a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, and morbidity and mortality conferences.

Assessment Method (Residents)
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the 360 degree evaluation process (using faculty, nurse managers, residents, medical student and patient evaluations) will take place at the conclusion of the rotation. Semi-annual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

Assessment Method (Rotation Evaluation)
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.

II. Total Joint Service MIS (Minimally Invasive Exposure)
Cass Nakasone, M.D. is the supervising attending for the Total Joint Service.

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 pathology, degenerative, inflammatory and post traumatic arthritis 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. Learn hip and knee related medical inquiry to determine mechanism of injury, related information (performance needs and goals) and functional impairments.
3. Be able to perform a comprehensive orthopaedic evaluation and physical exam for traumatic, degenerative, and overuse injuries to the hip and knee.
4. Learn to integrate the clinical presentation with imaging data (radiographs, MRI, and CT) to make decisions regarding operative care.
5. Be able to formulate a medical and surgical problem list delineating goals to be achieved, and complications to be avoided when reconstructive surgery is performed.
6. Learn to prevent intra-operative technical complications during hip and
knee reconstructive surgery.
7. Make an early diagnosis and provide prompt treatment of acute post operative complications, including nerve palsy, DVT, PE, wound dehiscence, infection, and instability.
8. Be able to assess postoperative progress of patients, who have undergone arthroscopic or open operative treatment.
9. Learn to prescribe in hospital and outpatient physical therapy, utilizing standard post operative protocols for patients undergoing hip and knee reconstruction and joint arthroplasty.
10. Be able to effectively counsel patients, families and caregivers about the plan of care.
11. Be a vital part of the MIS team under the supervision of attending faculty.
12. Be able to diagnose common degenerative pathology of hip and knee.
13. Participate in pre and post operative clinics with attending faculty.
14. Be aware of and use treatment algorithms for complex clinical problems associated with hip and knee arthroplasty (e.g. infection, instability).
15. Learn to properly prepare and drape patients for hip/knee procedures.
16. Learn to perform operative hip and knee open reconstructive procedures (ligament reconstructions, resurfacing, and joint replacement).
17. Participate in MIS arthroplasty procedures for hip and knee arthrosis.
18. Template pre operative x-rays, as part of preoperative process.
19. Evaluate biomechanical aspects of postoperative radiographs (e.g. alignment, leg lengths, etc).

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. Identify and understand the natural history of hip and knee degenerative, infectious, and traumatic disorders.
2. Discuss and understand the biomechanics of hip and knee arthroplasty and their instability states.
3. Understand and state radiographic criteria for a successful hip and knee arthroplasty.
4. Know and describe various open treatments for hip and knee degenerative arthritis.
5. Know and be able to use various implants for hip and knee arthroplasty based on anatomical and pathological patient characteristics and treatment goals.
6. Promptly identify common post complications and discuss their prevention.
7. Learn and use evidence based postoperative therapy regimens during the postoperative period.
8. Complete cadaver dissection of hip and knee and cite common surgical exposures used during MIS reconstructive procedures.
9. Know and be able to cite outcome studies for hip and knee arthroplasties.
10. Know work up and treatment algorithms for a hip and knee infected arthroplasty.
11. Know and use post operative protocols for MIS total hip and knee arthroplasty.
12. Differentiate patients who are best treated by non-operative means.

Practice-Based Learning and Improvement

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**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 lifelong learning. Residents are expected to develop skills and habits to be able to:

**Objectives**
1. Evaluate one’s own knowledge, incorporating feedback from others, especially the faculty.
2. Modify self-directed learning appropriately, including feedback provided from the OITE results, as it pertains to reconstructive and MIS items on exam.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to hip and knee, injuries, arthroplasties, and reconstructive treatments.
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 (Arthroscopy DVDs, CDs, Vumedi, etc).
6. Contribute to discussions concerning patient care with other health care professionals, attendings, and consultants.
7. Attend and participate in teaching conferences and rounds.
8. Produce a pre-rotation list of specific goals and objectives; share these goals and objectives 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 shoulder service setting.
3. Evaluate interactions with patients and ancillary personnel.
4. Integrate the care of patients with arthrosis and injuries. Use clinical pathways.
5. Use diagnostic and therapeutic procedures appropriately and judiciously.
6. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care.
7. Provide data for M&M conferences to positively affect patient care.
8. Participate in clinical pathways designed to improve patient outcomes.
9. Serve as patient advocates in dealing with system complexities.
10. Serve as patient advocates for quality patient care.
11. Work effectively with other services, attendings and consultants.
12. Work to improve the system of medical care at Straub Hospital and improve care for community patients.
13. Provide information on systems issues that may improve patient care (this performed at department meetings).
**Professionalism**

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

**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, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies.
5. Consider the effects of personal, social, and cultural 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.
7. Understand and be empathetic to special needs and concerns of the patient, who is dealing with arthritis, and is scheduled for surgical reconstruction.

**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 (monitored by medical records department and Program Director).
3. Discuss diagnoses, prognoses, and treatment options clearly and accurately to patients and trainers.
4. Synthesize information and present clinical and diagnostic information clearly to colleagues and consultants.
5. Utilize effective listening skills.
6. Communicate and interact with staff/team in respectful, responsive manner.
7. Promote teamwork, and coordinate the work up and treatment of patients on the shoulder service.

**Teaching Methods**
PGY-3 residents on the MIS Arthroplasty and Reconstructive Service function with a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, and morbidity and mortality conferences.

**Assessment Method (Residents)**
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the 360 degree evaluation process (using faculty, nurse managers, residents, medical student and patient evaluations) will take place at the conclusion of the rotation. Semi-annual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.
Assessment Method (Rotation Evaluation)
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.

III. Foot and Ankle Service

Spencer Chang, M.D. is the supervising attending for the Foot and Ankle rotation.

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 pathology, degenerative arthritis 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. Apply foot and ankle injury related medical inquiry to determine mechanism of injury, and related information (performance needs and goals) and functional impairments.
3. Be able to perform a comprehensive orthopaedic evaluation and physical exam for traumatic, degenerative, and overuse injuries to the foot and ankle.
4. Integrate the clinical presentation with imaging data (radiographs, MRI, CT) to make decisions regarding operative care.
5. Formulate a medical and surgical problem list delineating goals to be achieved, and complications to be avoided when reconstructive surgery is performed for ankle, mid-foot, hind-foot instabilities, and deformities.
7. Make an early diagnosis and provide prompt treatment of acute post-operative complications, including nerve palsy, DVT, PE, wound dehiscence, infection, and instability.
8. Effectively assess post-operative progress of patients, who have undergone arthroscopic or open operative treatment for their foot and ankle pathology.
9. Learn to prescribe in hospital and outpatient physical therapy, utilizing standard post-operative protocols for patients undergoing osteotomies, fore-foot reconstructions, posterior tibial tendon reconstructions, and neuroma excision.
10. Be able to effectively counsel patients and families and caregivers about the plan of care.
11. Be a vital part of the foot/ankle team under the supervision of attending faculty.
12. Be able to diagnose common degenerative conditions of the foot and ankle.
13. Participate in pre- and post-operative clinics with attending faculty.
14. Be aware of and use treatment algorithms for complex injuries of the foot/ankle, including fracture-dislocations, charcot foot, subtalar instabilities, and lesions of the talar dome.
15. Learn to properly prepare and drape patients for foot/ankle procedures.
16. Learn to perform diagnostic and operative foot/ankle open reconstructive procedures (ligament reconstructions, resurfacing).
17. Participate in open stabilization procedures for ankle instabilities.
18. Template radiographs as part of the preoperative process, when appropriate.
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:

1. Identify, understand, natural history of foot and ankle degenerative, infectious, and traumatic disorders.
2. Discuss and understand the biomechanics of the foot and ankle, and their instability states.
3. Know and describe various open treatments for foot and ankle degenerative and inflammatory (rheumatoid) arthritis.
4. Know and be able to use various implants for foot fusions and arthroplasty based on anatomical and pathological patient characteristics, and treatment goals.
5. Promptly identify common post-operative complications and discuss their prevention.
6. Learn and use evidence based post-operative therapy regimens during the post-operative period.
7. Complete cadaver dissection of the foot and ankle and cite common surgical exposures used during foot and ankle reconstructive procedures.
8. Know and be able to cite outcome studies for fore-foot arthroplasties, and hind-foot osteotomies.
9. Know work up and treatment algorithms for foot infections.
10. Know and use post operative protocols fore-foot reconstructive osteotomies.
11. Differentiate patients who are best treated by non-operative means for their foot/ ankle pathology.
12. Understand and state radiographic goals to be achieved during foot and ankle arthroplasty and reconstruction.

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 lifelong learning. Residents are expected to develop skills and habits to be able to:

Objectives:
1. Evaluate one’s own knowledge, incorporating feedback from others, especially the faculty.
2. Modify self-directed learning appropriately, including feedback provided from the OITE results, as it pertains to foot and ankle items on the exam.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to foot and ankle injuries and reconstructive treatments.
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 (Arthroscopy DVDs, CDs, Vumedi, etc).
6. Contribute to discussions concerning patient care with other health care professionals, attendings, and consultants.
7. Attend and participate in teaching conferences and rounds.
8. Produce a pre-rotation list of specific goals and objectives: share these goals and objectives 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 foot and ankle service setting. Evaluate interactions with patients and ancillary personnel.
3. Integrate the care of patients with arthrosis and injuries. Use clinical pathways.
4. Use diagnostic and therapeutic procedures appropriately and judiciously.
5. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care.
6. Provide data for M&M conferences to positively affect patient care.
7. Participate in clinical pathways designed to improve patient outcomes.
8. Serve as a patient advocate in dealing with system complexities.
10. Work effectively with other services, attendings and consultants.
11. Work to improve the system of medical care at Straub Clinic and Hospital and improve care for community patients.
12. Provide information on systems issues that may improve patient care (this is performed at department meetings).

**Professionalism**

**Competency**

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

**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, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies.
5. Consider the effects of personal, social, and cultural 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.
7. Understand and be empathetic to special needs and concerns of the patient, who is dealing with arthritis, or infection, and is scheduled for surgical reconstruction.

**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 (monitored by medical records department and the Program Director)
3. Discuss diagnoses, prognoses, and treatment options clearly and accurately with patients and care coordinators.
4. Synthesize information and present clinical and diagnostic information clearly to colleagues, and ancillary personnel.
5. Utilize effective listening skills
6. Communicate and interact with staff/team in respectful, responsive manner
7. Promote teamwork, and coordinate the work up and treatment of patients on the foot and ankle service.

Teaching Methods
PGY-3 residents on the foot and ankle service function with a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences

Assessment Method (Residents)
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the 360 degree evaluation process (using faculty, nurse managers, residents, medical student and patient evaluations) will take place at the conclusion of the rotation. Semi-annual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

Assessment Method (Rotation Evaluation)
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.


Hand Surgery Rotation  
At Queen’s Medical Center, PGY-3

Description of Rotation
The Hand Surgery rotations include a one-month rotation as a PGY-3 resident. Residents on rotation participate in at least four half day clinics with attending staff, where fifteen to twenty patients per day are worked up by the resident and presented to attending(s). In addition residents cover upper extremity (hand) emergency call at the Queen’s Medical Center with three of the attending physicians. Resident evaluations and working, or differential diagnoses are discussed with attendings and treatment is planned and implemented. Residents have the opportunity for continuity of care, with the clinical spectrum covered from presentation in Emergency Department, through operative treatment and post-operative outpatient follow-up, including emphasis on occupational therapy principles and prescriptions. This rotation takes place primarily at the Queen’s Medical Center, where the Emergency Department and operating rooms, are in close proximity to the attendings’ offices. Residents also present Queen Emma Clinic patients, with upper extremity disorders, to attendings, with emphasis on making an accurate diagnosis, formulating a treatment plan and carrying out effective care, with expected outcomes.

Residents develop upper extremity surgical experience, with graduated responsibility. Residents participate in five to six, one-half days per week of operating room responsibilities. Operative cases performed by the resident, with close attending supervision are the less complex type (carpal tunnel, trigger finger releases, ORIF of fractures) appropriate for the PGY-3 resident. Residents’ operative performance(s) are critiqued and formative and summative evaluations are given. Residents are tested using the ASSH self-assessment examination both prior to and following the PGY-3 Hand rotation.

Residents must complete and submit to the Program Director for approval, a self-generated list of goals and objectives for this subspecialty rotation.

Clinical Milestones Addressed During This Rotation:
- Carpal Tunnel
- Distal Radius Fracture
- Adult Elbow Fracture

Length: 1 months of PGY-III year
Locations: Queens Medical Center
Primary Supervisors:  
Dr. Robert Atkinson, M.D. (Office: 521-8128)  
Dr. Daniel Singer, M.D. (Office: 521-8109)  
Dr. John Juliano, M.D. (Office: 522-9633)

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 pathology, degenerative arthritis 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. Perform a comprehensive orthopaedic evaluation and physical exam of the upper extremity for degenerative, inflammatory, trauma and post traumatic arthritis and deformities, with special attention to neurological/vascular status, skin and soft tissue coverage, and muscle/tendon function.
4. Formulate a medical and surgical problem list delineating goals to be achieved, and complications to be avoided when reconstructive hand surgery is performed.
5. Learn to prevent intra-operative technical complications during upper extremity surgery.
6. Make an early diagnosis and provide prompt treatment of acute post operative complications, including nerve, DVT wound dehiscence and infection.
7. Integrate the clinical presentation of upper extremity pain with imaging data to make decisions regarding operative care.
8. Assess post-operative progress of hand & upper extremity surgery patients and of patients undergoing elective reconstructive elbow and shoulder arthroplasties.
9. Learn to prescribe in hospital and outpatient PT, OT, utilizing Queens’s Medical Center post arthroplasty clinical care pathways. Incorporate occupational therapy into the patients’ post operative course.
10. Effectively counsel patients and families and caregivers about the plan of care.
11. Participate on the inpatient team under the supervision of attending faculty.
12. Be aware of, identify and provide post surgical precautions and goals for occupational/physical therapists.
13. Complete and pass the Queens conscious sedation certifying exam.
14. Use treatment algorithms for the work up and treatment of the infected elbow and shoulder arthroplasty.
15. Perform joint aspirations for shoulder, elbow and wrist, in the process of a work up for infection.
16. Properly prepare and drape patients for upper extremity procedures.
17. Learn to perform a primary fixation of hand, forearm, and humeral fractures.
18. Be skilled in preoperative templating and in the postoperative radiographic assessment of shoulder and elbow arthroplasty.
19. Understand and use algorithms for soft tissue coverage of upper extremity injuries.
20. Treat finger tip amputations with patients’ functional needs in mind.
21. Appropriately evaluate MRI, CT, and plain radiograph findings for the upper extremity.
22. Classify burn injuries.
23. Be able to perform a Z plasty.

**Medical Knowledge**

**Competency**

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

**Objectives**

1. Understand and use the classification systems for fractures and dislocations in upper extremity, with emphasis on hand, wrist and forearm/elbow.
2. Discuss and understand the biomechanics of flexor pulley system, its anatomy and the results of its injury.
3. Know and describe the surgical steps and relevant anatomy during the anterior and posterior approaches to the radius and ulna. Know surgical approaches used in the treatment of hand injury and infection.
4. Know and describe various approaches for total elbow and shoulder and wrist arthroplasty.
5. Know and describe injury and instability patterns in the hand, in the patient with rheumatoid arthritis, and (their) treatment options.
6. Know and be able to use various implants for ligament reconstructions, fracture fixation, and joint stabilization/reconstruction.
7. Understand burn pathophysiology.
8. Understand local rotation flap concepts.
9. Understand flexor and extensor tendon repair techniques, and reconstructive options in tendon loss injuries.
10. Know treatment principles of traumatic amputations, and indications for replantation.
11. Know principles for common congenital malformations (syndactyly, polydactyly, RLD, constrictions ring syndrome).
12. Promptly identify common post operative complications and discuss their prevention.
13. Complete cadaver dissection of upper extremity and cite common surgical exposures.
14. Know and be able to cite outcome studies, and factors that predispose to complications after operative treatment of U.E. traumatic conditions.
15. Know appropriate study design for the evaluation of a fixation technique or specific implant (E.g. distal radius fracture).
16. Differentiate between patients who are best treated by non operative means.
18. Know classification of nerve injuries, appropriate treatment, and prognoses after nerve repair in the U.E.
19. Learn biomechanical principles of tendon transfers.
20. Complete the ASSH self assessment exam.

**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 lifelong learning. Residents are expected to develop skills and habits to be able to:

**Objectives**

1. Evaluate one’s own knowledge, incorporating feedback from others, especially faculty.
2. Modify self-directed learning appropriately, including feedback provided from the OITE results, as it pertains to hand/upper extremity items on exam.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to hand surgery and reconstructive diagnoses and treatments.
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 (Arthroplasty DVDs, CDs, Vumedi, etc).
6. Contribute to discussions concerning patient care with other health care professionals, attendings, including consultants.
7. Attend and participate in teaching conferences and rounds.
8. Present one Grand Rounds on a hand surgery topic cleared with rotation preceptor.
9. Produce a pre-rotation list of specific goals and objectives; share these goals and objectives 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 hand service setting.
3. Integrate the care of hand surgery patients in inpatient settings. Use clinical pathways for upper extremity arthroplasties.
4. Use diagnostic and therapeutic procedures appropriately and judiciously.
5. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care.
6. Provide data for M&M conferences to positively affect patient care.
7. Participate in clinical pathways designed to improve patient outcomes.
8. Serve as patient advocates in dealing with system complexities.
10. Work effectively with other services, health care agencies, and case managers.
11. Work to improve the system of medical care at Queens Medical Center.
12. Provide information on systems issues that may improve patient care (this performed at department meetings).

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

**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, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies.
5. Consider the effects of personal, social, and cultural 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.
7. Understand and be empathetic to the patient with amputation loss.

**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 (monitored by medical records department and Program Director.)
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 and treatment of patients on the hand surgery service.

**Teaching Methods**

PGY-3 and 5 residents on the Hand Surgery service function with a 1:1 faculty/resident ratio. Two residents are never on this service concurrently. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences. Substantial improvement in medical knowledge and patient care skills is expected and monitored between the third (4 weeks) and fifth year (3 months) rotations.

**Assessment Method (Residents)**

Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; resident is given a specific formative evaluation 2 weeks into the rotation, to address any deficiencies; the 360 degree evaluation process (using faculty, nurse managers, residents and patient evaluations) will take place at the end of the rotation. Semiannual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

**Assessment Method (Rotation Evaluation)**

Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
Hand Surgery Rotation  
At Queen’s Medical Center,  
PGY-5

Description of Rotation
The Hand Surgery rotations include a three-month rotation as a PGY-5 (Chief) resident. Residents on rotation participate in at least four half day clinics with attending staff, where fifteen to twenty patients per day are worked up by the resident and presented to attending(s). In addition residents cover upper extremity (hand) emergency call at the Queen’s Medical Center with three of the attending physicians. Resident evaluations and working, or differential diagnoses are discussed with attendings and treatment is planned and implemented. Residents have the opportunity for continuity of care, with the clinical spectrum covered from presentation in Emergency Department, through operative treatment and post-operative outpatient follow-up, including emphasis on occupational therapy principles and prescriptions. This rotation takes place primarily at the Queen’s Medical Center, where the Emergency Department and operating rooms, are in close proximity to the attendings’ offices. Residents also present Queen Emma Clinic patients, with upper extremity disorders, to attendings, with emphasis on making an accurate diagnosis, formulating a treatment plan and carrying out effective care, with expected outcomes. Residents develop upper extremity surgical experience, with graduated responsibility. Residents participate in five to six, one-half days per week of operating room responsibilities. Operative cases performed by the resident, with close attending supervision are the more complex type (flexor tendon repair, reconstruction, total shoulder and elbow arthroplasty) appropriate for the PGY-5 resident. Residents’ operative performance(s) are critiqued and formative and summative evaluations are given. Residents are tested using the ASSH self-assessment examination both prior to and following the PGY-5 Hand rotation. Residents must complete and submit to the Program Director for approval, a self-generated list of goals and objectives for this subspecialty rotation.

Clinical Milestones Addressed During This Rotation:
Carpal Tunnel
Distal Radius Fracture
Adult Elbow Fracture

Length: 3 months of PGY-V year
Locations: Queens Medical Center
Primary Supervisors: Dr. Robert Atkinson, M.D. (Office: 521-8128)  
Dr. Daniel Singer, M.D. (Office: 521-8109)  
Dr. John Juliano, M.D. (Office: 522-9633)

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 pathology, degenerative arthritis and the promotion of health. Residents are expected to:

Objectives

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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. Be able to perform a comprehensive orthopaedic evaluation and physical exam of the upper extremity for degenerative, inflammatory, trauma and post traumatic arthritis and deformities, with special attention to neurological/vascular status, skin and soft tissue coverage, and muscle/tendon function.
4. Be able to formulate a medical and surgical problem list delineating goals to be achieved, and complications to be avoided when reconstructive hand surgery is performed.
5. Learn to prevent intra-operative technical complications during upper extremity surgery.
6. Make an early diagnosis and provide prompt treatment of acute post operative complications, including nerve, DVT wound dehiscence and infection.
7. Learn to integrate the clinical presentation of upper extremity pain with imaging data to make decisions regarding operative care.
8. Be able to assess postoperative progress of hand & upper extremity surgery patients and of patients undergoing elective reconstructive elbow and shoulder arthroplasties.
9. Learn to prescribe in hospital and outpatient PT, OT, utilizing Queens’s Medical Center post arthroplasty clinical care pathways. Incorporate occupational therapy into the patients’ post-operative course.
10. Be able to effectively counsel patients and families and caregivers about the plan of care.
11. Be a vital part of the inpatient team under the supervision of attending faculty.
12. Be aware of, identify and provide post surgical precautions and goals for occupational/physical therapists.
13. Take and pass Queens conscious sedation certifying exam.
14. Be aware of and use treatment algorithms for the work up and treatment of the infected elbow and shoulder arthroplasty.
15. Perform joint aspirations for shoulder, elbow and wrist, in the process of a work up for infection.
16. Learn to properly prepare and drape patients for upper extremity procedures.
17. Learn to perform a primary fixation of hand, forearm, and humeral fractures.
18. Be skilled in preoperative templating and in the postoperative radiographic assessment of shoulder and elbow arthroplasty.
19. Understand and use algorithms for soft tissue coverage of upper extremity injuries.
20. Treat finger tip amputations with patients’ functional needs in mind.
21. Treat flexor and extensor tendon injuries operatively.
22. Appropriately evaluate MRI, CT, and plain radiograph findings for the upper extremity.
23. Classify burn injuries.
24. Be able to perform a Z plasty.

**Medical Knowledge Competency**

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, basic science and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents are expected to be able to:
Objectives
1. Understand and use the classification systems for fractures and dislocations in upper extremity, with emphasis on hand, wrist and forearm/elbow.
2. Discuss and understand the biomechanics of flexor pulley system, its anatomy and the results of its injury.
3. Know and describe the surgical steps and relevant anatomy during the anterior and posterior approaches to the radius and ulna. Know surgical approaches used in the treatment of hand injury and infection.
4. Know and describe various approaches for total elbow and shoulder and wrist arthroplasty.
5. Know and describe injury and instability patterns in the hand, in the patient with rheumatoid arthritis, and (their) treatment options.
6. Know and be able to use various implants for ligament reconstructions, fracture fixation, and joint stabilization/reconstruction.
7. Understand burn pathophysiology.
8. Understand local rotation flap concepts.
9. Understand flexor and extensor tendon repair techniques, and reconstructive options in tendon loss injuries.
10. Know treatment principles of traumatic amputations, and indications for replantation.
11. Know principles for common congenital malformations (syndactyly, polydactyly, RLD, constriction ring syndrome).
12. Promptly identify common post operative complications and discuss their prevention.
13. Complete cadaver dissection of upper extremity and cite common surgical exposures.
14. Know and be able to cite outcome studies, and factors that predispose to complications after operative treatment of U.E. traumatic conditions.
15. Know appropriate study design for the evaluation of a fixation technique or specific implant (E.g. distal radius fracture).
16. Differentiate between patients who are best treated by non operative means.
18. Know classification of nerve injuries, appropriate treatment, and prognoses after nerve repair in the U.E.
19. Learn biomechanical principles of tendon transfers.
20. Take ASSH self assessment exam.

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, especially faculty.
2. Modify self-directed learning appropriately, including feedback provided from the OITE results, as it pertains to hand/upper extremity items on exam.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to hand surgery and reconstructive diagnoses and treatments.
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 (Arthroplasty DVDs, CDs, Vumedi, etc).
6. Contribute to discussions concerning patient care with other health care professionals, attendings, including consultants.
7. Attend and participate in teaching conferences and rounds.
8. Present one Grand Rounds on a hand surgery topic cleared with rotation preceptor.
9. Produce a pre-rotation list of specific goals and objectives; share these goals and objectives 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 hand service setting.
3. Integrate the care of hand surgery patients in inpatient settings. Use clinical pathways for upper extremity arthroplasties.
4. Use diagnostic and therapeutic procedures appropriately and judiciously.
5. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care.
6. Provide data for M&M conferences to positively affect patient care.
7. Participate in clinical pathways designed to improve patient outcomes.
8. Serve as patient advocates in dealing with system complexities.
10. Work effectively with other services, health care agencies, and case managers.
11. Work to improve the system of medical care at Queens Medical Center.
12. Provide information on systems issues that may improve patient care (this performed at department meetings).

### Professionalism

**Competency**

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

**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, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies.
5. Consider the effects of personal, social, and cultural 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.
7. Understand and be empathetic to the patient with amputation loss.
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 (monitored by medical records department and Program Director.)
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 and treatment of patients on the hand surgery service.

Teaching Methods
PGY-3 and 5 residents on the Hand Surgery service function with a 1:1 faculty/resident ratio. Two residents are never on this service concurrently. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences. Substantial improvement in medical knowledge and patient care skills is expected and monitored between the third year (4 weeks) and fifth year (3 months) rotations.

Assessment Method (Residents)
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; resident is given a specific formative evaluation 2 weeks into the rotation, to address any deficiencies; the 360 degree evaluation process (using faculty, nurse managers, residents and patient evaluations) will take place at the end of the rotation. Semiannual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

Assessment Method (Rotation Evaluation)
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
**Pediatric Orthopaedics Rotation at Kapiolani Women’s & Children’s Medical Center, PGY-3**

**Description of Rotation**

The JABSOM Orthopaedic Resident rotation at KMCWC has been expanded for Pediatric Orthopaedic Surgery with Dr. Robert Durkin, Dr. Byron Izuka, and Dr. William Burkhalter. The resident rotation in the 3rd year is one month (separate from any PGY-4 rotation) that month being negotiable prior to the start of the academic year. The summer months (May, June, July, and August) are reserved for the PGY-4 rotation. The rotation is pediatric focused and the site director is Robert C. Durkin MD, member of POSNA & AAOS. The residents spend 2.5 days per week in the operating room and 2.5 days per week in the outpatient offices with 3 attending surgeons. The resident is mandated to the 80 work week but takes on call duties (surgical, postoperative followup) with each surgeon on a regular schedule. A weekly 4 hour didactic session is supervised by Dr. Robert Durkin. The 3rd year didactic schedule includes Pediatric Musculoskeletal exam & normal development, pediatric hip diseases and spinal deformity/scoliosis, osteochondroses & sports, and review of pediatric trauma. The surgical experience is broad and pediatric focused. The most recent 4th year resident had the following case load – 6 shoulder (including sports & trauma), 16 humerus/elbow (including 12 supracondylar fractures and 4 lateral condyle fractures), 6 forearm/wrist, 3 hand/fingers, 5 pelvis/hip (including SCFE & surgical dislocation cases, no periacetabular osteotomies performed during this rotation), 23 femur/knee (including ACL, arthroscopy, fractures), 7 leg ankle (including ligamentous reconstruction, 4 foot/toes, 13 other, and 4 spinal deformity arthrodeses with instrumentation for scoliosis, total 89 surgical cases. The resident is competent in surgical treatment of basic pediatric trauma. He also assisted in outpatient treatment of infants with clubfoot and infants with DDH.

**Clinical Milestones Addressed During This Rotation:**
- Pediatric Septic Hip
- Pediatric Supracondylar Humerus FX

**Length:**
1 month of PGY-III year

**Location:**
Kapiolani Medical Center for Women and Children
Pali Momi Medical Center, Dr. Izuka’s Office

**Primary Supervisors:**
Robert Durkin, M.D. (Office: 945-3766)
William Burkhalter, M.D. (Office: 945-3766)
Byron Izuka, M.D. (Office: 485-8985)

Institutional Training Coordinator: Robert Durkin, 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 tests 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 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. Residents are instructed by our attending staff in the technique of informed consent and anticipatory guidance for parents and patients at our facility.

11. Demonstrate appropriate postoperative management, including adeptly close surgical wounds, place drains, and apply appropriate post surgical dressing.

12. 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 use classification systems for Perthes and SCFE.


5. Appropriately evaluate orthopaedic literature and present this literature in case presentations.

6. Cite levels of evidence in the orthopaedic case-driven medical literature.

7. Understand and apply the basic biomedical statistics in evaluation of the medical literature.

8. 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, especially as it relates to pediatric orthopaedic diagnoses and treatments.
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, etc)
6. Contribute to discussions concerning patient care with other health care professionals, attendings, and consultants
7. Attend and participate in didactics and rounds
8. 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. Integrate the care of pediatric patients in inpatient settings
4. Use diagnostic and therapeutic procedures appropriately and judiciously
5. Evaluate risks, benefits, limitations, and costs of patient care
6. Provide data for conferences to positively affect patient care
7. Participate in clinical pathways designed to improve patient outcomes
8. Serve as patient advocates in dealing with system complexities
9. Serve as patient advocates for quality patient care
10. Work effectively with other services, health care agencies, and case managers
11. Work to improve the system of medical care at the Kapiolani Medical Center for Women and Children

**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, informed consent, provision for the withholding of care, and interactions with insurance companies or disability agencies
5. Consider the effects of personal, social, and cultural 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, families 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 (monitored by medical records department and Institutional Site Coordinator)
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 orthopaedic trauma patients

Teaching Methods
PGY-3 residents on the Pediatric Orthopaedics service function with better than a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of lecture and Socratic review of resident reading assignments in topics in pediatric orthopaedic surgery. Residents on the Pediatric Orthopaedics rotation at Kapiolani are exempt from attending didactics at University Towers.

Assessment Method (Residents)
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the attending staff will evaluate each resident at the end of each rotation. Semi-annual evaluation meetings will provide summative evaluation by the JABSOM Orthopaedic Surgery Residency Director and KMCWC Institutional Site Director.
Assessment Method (Program Evaluation)

All residents are urged to voice their opinions where the program (or any part of it) is concerned. Residents are required to evaluate the program (anonymously) at the conclusion of each academic year. Residents evaluate all rotations at their conclusion.

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 and examination of the patient is completed together. The attending and resident review and examine all those patients being seen on a return basis together.

  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. Full attending supervision is provided and each plan is confirmed by direct participation of attending and resident in patient care.

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.

Operative

  a. Supervision
     Supervision in surgery is provided in all instances. The attending physician is physically present for all surgeries from start to finish.
b. **Progressive Responsibility**  
Progressive responsibilities are determined based upon the complexity of the case and the demonstrated competence of the resident. Portions or all of the surgery may be performed by the resident with direct attending surgeon supervision of all facets of care.

**Educational Resources**

**Educational Conferences:**  
Weekly educational conferences include 4 hours of didactics with an attending surgeon on a 1:1 basis. Conferences are held in the surgeon’s office equipped with a computer, x-ray view boxes, and other visual aids. A weekly resident lecture series is an informal setting with all three attendings is planned to begin in the Spring 2009.

**Library Space/Resources:**  
The Medical Staff at KMCWC have access to peer reviewed journals and textbooks 24/7, including on-line access to most journals and textbooks through the HPH HERO website. Resources are available in the Division of Pediatric Orthopaedic Surgery at KMCWC and the medical library in the Pediatric Department, John A. Burns School of Medicine. Reference DVDs, Self Assessment Exams, and CDs are stored in the library for access to all residents. A video library which contains instructional materials for hip reconstruction, scoliosis surgery, shoulder and knee arthroscopy and reconstruction.

**Research Support/Personnel:**  
Full support is provided to residents for clinical research at KMCWC. This includes three full-time Orthopaedic Surgeons, one part-time PhD candidate research assistant (Department of Kinesiology, University of Hawaii). In addition, resident projects through the residency program are supported by the attending staff.
Pediatric Orthopaedics Rotation at Kapiolani Women’s & Children’s Medical Center PGY-4

Description of Rotation
The JABSOM Orthopaedic Resident rotation at KMCWC has been expanded for Pediatric Orthopaedic Surgery with Dr. Robert Durkin, Dr. Byron Izuka, and Dr. William Burkhalter. The resident rotation in the 4th year is two months (separate from any PGY-3 rotation) that month being negotiable prior to the start of the academic year. The summer months (May, June, July and August) are highly preferred because of case type and volume. The rotation is pediatric focused and the site director is Robert C. Durkin MD, member of POSNA & AAOS. The residents spend 2.5 days per week in the operating room and 2.5 days per week in the outpatient offices with 3 attending surgeons. The resident is mandated to the 80 work week but takes on call duties (surgical, postop followup) with each surgeon on a regular schedule. A weekly 4 hour didactic session is supervised by Dr. Robert Durkin. The 4th year didactic schedule includes Pediatric Musculoskeletal exam & normal development, pediatric hip diseases, Idiopathic Scoliosis & Pediatric Spinal Deformity, Congenital & Developmental Foot Conditions, Musculoskeletal infections in children, Benign bone/joint tumors in children, Angular limb deformity, Osteochondroses & Sports Injury in children, and review of pediatric trauma. The surgical experience is broad and pediatric focused. The most recent 4th year resident had the following case load – 6 shoulder (including sports & trauma), 16 humerus/elbow (including 12 supracondylar fractures and 4 lateral condyle fractures), 6 forearm/wrist, 3 hand/fingers, 5 pelvis/hip (including SCFE & surgical dislocation cases, no periacetabular osteotomies performed during this rotation), 23 femur/knee (including ACL, arthroscopy, fractures), 7 leg ankle (including ligamentous reconstruction, 4 foot/toes, 13 other, and 4 spinal deformity arthrodeses with instrumentation for scoliosis, total 89 surgical cases. The resident is competent in surgical treatment of basic pediatric trauma. He also assisted in outpatient treatment of infants with clubfoot and infants with DDH.

Clinical Milestones Addressed During This Rotation:
Pediatric Septic Hip
Pediatric Supracondylar Humerus FX

Length: 2 months of PGY-IV year
Location: Kapiolani Medical Center for Women & Children Pali Momi Medical Center
Primary Supervisors: Robert Durkin, M.D. (Office: 945-3766)
William Burkhalter, M.D. (Office: 945-3766)
Byron Izuka, M.D. (Office: 485-8985)

Institutional Training Coordinator: Robert Durkin, 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 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. Residents are instructed by our attending staff in the technique of informed consent and anticipatory guidance for parents and patients at our facility.

11. Demonstrate appropriate postoperative management, including adeptly close surgical wounds, place drains, and apply appropriate post surgical dressing.

12. 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 use classification systems for Perthes and SCFE.


5. Appropriately evaluate orthopaedic literature and present this literature in case presentations.

6. Cite levels of evidence in the orthopaedic case-driven medical literature.

7. Understand and apply the basic biomedical statistics in evaluation of the medical literature.

8. 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, especially as it relates to pediatric orthopaedic diagnoses and treatments.
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, etc)
6. Contribute to discussions concerning patient care with other health care professionals, attendings, and consultants
7. Attend and participate in didactics and rounds
8. 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. Integrate the care of pediatric patients in inpatient settings
4. Use diagnostic and therapeutic procedures appropriately and judiciously
5. Evaluate risks, benefits, limitations, and costs of patient care
6. Provide data for conferences to positively affect patient care
7. Participate in clinical pathways designed to improve patient outcomes
8. Serve as patient advocates in dealing with system complexities
9. Serve as patient advocates for quality patient care
10. Work effectively with other services, health care agencies, and case managers
11. Work to improve the system of medical care at the Kapiolani Medical Center for Women and Children

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, informed consent, provision for the withholding of care, and interactions with insurance companies or disability agencies
5. Consider the effects of personal, social, and cultural 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, families 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 (monitored by medical records department and Institutional Site Coordinator)
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 orthopaedic trauma patients

Teaching Methods
PGY-4 residents on the Pediatric Orthopaedics service function with better than a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of lecture and Socratic review of resident reading assignments in topics in pediatric orthopaedic surgery. Residents on the Pediatric Orthopaedics rotation at Kapiolani are exempt from attending didactics at University Towers.

Assessment Method (Residents)
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the attending staff will evaluate each resident at the end of each rotation. Semi-annual evaluation meetings will provide summative evaluation by the JABSOM Orthopaedic Surgery Residency Director and KMCWC Institutional Site Director.
## Assessment Method (Program Evaluation)

All residents are urged to voice their opinions where the program (or any part of it) is concerned. Residents are required to evaluate the program (anonymously) at the conclusion of each academic year. Residents evaluate all rotations at their conclusion.

## 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 and examination of the patient is completed together. The attending and resident review and examine all those patients being seen on a return basis together.

**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. Full attending supervision is provided and each plan is confirmed by direct participation of attending and resident in patient care.

### 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.

### Operative

**a. Supervision**

Supervision in surgery is provided in all instances. The attending physician is physically present for all surgeries from start to finish.
b. **Progressive Responsibility**
Progressive responsibilities are determined based upon the complexity of the case and the demonstrated competence of the resident. Portions or all of the surgery may be performed by the resident with direct attending surgeon supervision of all facets of care.

**Educational Resources**
List the educational resources

**Educational Conferences:**
Weekly educational conferences include 4 hours of didactics with an attending surgeon on a 1:1 basis. Conferences are held in the surgeon’s office equipped with a computer, x-ray view boxes, and other visual aids. A weekly resident lecture series is an informal setting with all three attendings is planned to begin in the Spring 2009.

**Library Space/Resources:**
The Medical Staff at KMCWC have access to peer reviewed journals and textbooks 24/7, including on-line access to most journals and textbooks through the HPH HERO website. Resources are available in the Division of Pediatric Orthopaedic Surgery at KMCWC and the medical library in the Pediatric Department, John A. Burns School of Medicine. Reference DVDs, Self Assessment Exams, and CDs are stored in the library for access to all residents. A video library which contains instructional materials for hip reconstruction, scoliosis surgery, shoulder and knee arthroscopy and reconstruction.

**Research Support/Personnel:**
Full support is provided to residents for clinical research at KMCWC. This includes three full-time Orthopaedic Surgeons, one part-time PhD candidate research assistant (Department of Kinesiology, University of Hawaii). In addition, resident projects through the residency program are supported by the attending staff.
### Pediatric Orthopaedics
**At Shriners Hospitals for Children, 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 evident-based practice. Teaching will be performed on rounds, in the clinic and operating room. There are multiple 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 may also be guided through the process of initiating and completing a research project, if desired. Residents on rotation at Shriners are exempt from didactics held at the University Towers.

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

Institutional Training Coordinator: Craig Ono, 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 tests 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 polydactylous 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.
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 Hospitals 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. (include add’l information about SHCIS requirements?)
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 rotation using a form provided by the medical staff office.

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 mid-point and the end of the four-month rotation. 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. Residents evaluate every rotation at its conclusion and evaluate the Program annually.

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, 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 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 for viewing images. A weekly resident lecture series covers chapters from Tachdjian’s Pediatric Orthopaedics and Lovell & Winter’s Pediatric Orthopaedics.

**Library Space/Resources:**
The Medical Staff at Shriners have access to peer reviewed journals and textbooks 24/7, including on-line access to most journals and textbooks. Resources are housed in four locations: 1) Medical Staff Library, 2) Outpatient Department treatment area, 3) Surgical Services Library, and 4) Radiology Department. Reference DVD, virtual textbooks/anatomy programs, SAE’s and CDs are stored in a computer in the Medical Staff 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 Shriners. 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.
Residents have a desk in the surgical services department as well as access to a workstation in the medical staff office.

Residents may work with the Shriners Orthopaedic Staff as a co-Investigator in applying for research grants. Small, unfunded research projects may be conducted at the discretion of the medical staff without the necessity of formally applying for a grant.
Physical Medicine and Rehabilitation at Harborview Medical Center (UW), PGY-3

Description of Rotation

The University of Washington Medical Centers include University of Washington Hospital, Roosevelt Clinic, and Harborview Medical Center. The PM&R rotation for University of Hawaii Orthopaedic Residents includes outpatient clinics in musculoskeletal medicine, spinal cord injury, amputation management, (possibly traumatic brain injury), and operative management of patients with amputations.

Weekly Schedule:
- **Mon AM:** MSK clinic with Karen Barr, MD, University of Washington Hospital
- **Mon PM:** SCI clinic with Rina Reyes, MD, University of Washington Hospital
- **Tues AM:** and **Tues PM:** Limb viability clinic with Janna Friedly, MD and Doug Smith, MD, Harborview Medical Center
- **Wed AM:** and **Wed PM:** OR at Harborview Medical Center with Doug Smith, MD; if Dr. Smith does not have OR time on some Wednesdays, then **Wed AM:** TBI clinic with Jenn Zumsteg, Harborview Medical Center; **Wed PM:** SCI clinic with Barry Goldstein, Harborview Medical Center
- **Thurs AM:** and **Thurs PM:** MSK and sports medicine with Brian Krabak, MD, Roosevelt Bone and Joint Clinic
- **Fri AM:** MSK/sports clinic with Marla Kaufman, Roosevelt Bone and Joint Clinic
- **Fri PM:** MSK/sports clinic with Nelson Hager, Roosevelt Bone and Joint Clinic

Length: 1 month of PGY-3 year
Primary Supervisor: Teresa (Terry) Massagli, MD, Program Director
Contact: Karen Ennes, Program Coordinator (206) 685-0936; klr@uw.edu

Credentialing, travel and housing arrangements are completed by the Program administrative staff. All expenses incurred by residents must be pre-approved. Travel and subsequent lodging, etc. fall under the purview of HRP Travel regulations.

Institutional Training Coordinator: Teresa Massagli, 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 must be able to perform a comprehensive physiatric evaluation for inpatients and outpatients.

Rotation Objectives: PM&R Clinics for Orthopaedic Residents:

**Acute and chronic musculoskeletal syndromes, including sports and occupational injuries**

1. Examine spine, pelvis, SI joints, shoulder, hip, knee, elbow, wrist, and hand,
using appropriate provocative diagnostic techniques
2. Identify the appropriate anatomy of the affected area
3. Differentiate common disorders of acute and chronic spine conditions
4. Differentiate common disorders of acute and chronic peripheral joint conditions
5. Incorporate (as indicated) medications and interventional/injection procedures into the rehabilitation treatment plan

Amputation
1. Perform a comprehensive orthopaedic evaluation and physical exam on patients faced with limb amputation due to vascular, post traumatic, and neoplastic pathology. Perform peripheral vascular exam, recognize evidence of infections, nerve injuries, and tumors.
2. Formulate a medical and surgical problem list delineating goals to be achieved, and complications to be avoided when amputation surgery is performed.
3. Learn to prevent intra-operative technical complications during amputation surgery.
4. Integrate preoperative vascular studies into decision making process for level of lower extremity amputation.
5. Learn to prescribe in hospital and outpatient PT, OT. Effectively proscribe prostheses for common levels of lower extremity amputations (above and below knee).
6. Effectively counsel patients and families and caregivers about the plan of care and post amputation course.
7. Identify weight bearing precautions for therapists
8. Formulate a rehabilitation treatment plan for post-operative management of patients with amputations
9. Perform gait evaluation
10. Prescribe wheelchairs and ambulatory devices
11. Prescribe basic components of upper and lower extremity prostheses
12. Describe common post-amputation pain syndromes
13. Describe treatment principles for chronic pain and phantom limb pain and formulate a plan for management of pain after amputation

Traumatic Brain Injury
1. Name predictors of prognosis
2. Assess cognitive deficits using mental status exam or review of neuropsychological exam
3. Treat complications including spasticity, aspiration, agitation, cognitive deficits, and common psychological conditions

SCI
1. Differentiate clinical syndromes and classify neurologic status using ASIA standards
2. Predict level of independence with mobility and ADLs based on level of injury
3. Differentiate sources of pain for patients with SCI
4. Prescribe preventative and/or treatment measures for bowel, bladder, respiratory, syrinx, spasticity, skin breakdown, autonomic dysreflexia, thromboembolic
disease, heterotopic ossification, erectile dysfunction and pain
5. Prescribe appropriate assistive devices for mobility, for ADLs and for
   communication and computer interfaces
6. Cite possible effects of SCI on sexual response and fertility

**Medical Knowledge**

**Competency**
Resident 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. Generate a differential diagnosis for medical or PM&R problems
2. Integrate and apply knowledge to manage complex medical and PM&R problems
3. Understand indications for lower limb amputations for PVD, fulminant and chronic infections and tumors.
4. Know how to optimize the nutritional status, and surgical technique for all patients undergoing amputations.
5. Understand principles of rigid dressings and early postoperative prosthetic fitting techniques.
6. Know techniques used to preserve the knee joint.
7. Promptly identify common post operative complications and discuss their prevention.
8. Learn skin incisions and flap design for lower limb amputations.
9. Review laboratory data and imaging data and identify normal and abnormal findings
10. Appropriately evaluate orthopaedic literature and present this literature in case presentations.
11. Cite levels of evidence in the orthopaedic case-driven medical literature.
12. Understand and apply the basic biomedical statistics in evaluation of the medical literature.
13. 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, especially as it relates to pediatric orthopaedic diagnoses and treatments.
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, etc)
6. Contribute to discussions concerning patient care with other health care professionals, attendings, and consultants
7. Attend and participate in didactics and teaching rounds
8. 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. Integrate the care of pediatric patients in inpatient settings
4. Use diagnostic and therapeutic procedures appropriately and judiciously
5. Evaluate risks, benefits, limitations, and costs of patient care
6. Provide data for conferences to positively affect patient care
7. Participate in clinical pathways designed to improve patient outcomes
8. Serve as patient advocates in dealing with system complexities
9. Serve as patient advocates for quality patient care
10. Work effectively with other services, health care agencies, and case managers
11. Work to improve the system of medical care at the Kapiolani Medical Center for Women and Children

**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, informed consent, provision for the withholding of care, and interactions with insurance companies or disability agencies
5. Consider the effects of personal, social, and cultural 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, families 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 (monitored by medical records department and Institutional Site Coordinator)
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 orthopaedic trauma patients

Teaching Methods
PGY-3 residents on the PM & R Amputation Surgery service function with a 1:1 faculty/resident ratio. The program’s residents are the only residents outside of the PM&R program that rotate through this service at the institution. Teaching is by case-method and preceptorship with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences. Improvement in knowledge, patient care and communication skills is expected and monitored in the third year rotation.

Assessment Method (Residents and Rotation)
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; the attending staff and senior residents (via Dr Massagli and Karen Ennes) will evaluate each resident at the end of each rotation. Semi-annual evaluation meetings will provide summative evaluation by the JABSOM Orthopaedic Surgery Residency Program Director. Resident evaluations of the rotation in conjunction with input from the Institutional Site Coordinator are used to adapt and adjust the rotation experience to the Orthopaedic resident.
Research/Electives, PGY-3

Description of Rotation

Length: 1-2 months of PGY-III year
Location: Queen’s Medical Center and Hosts Institutions Outside of Hawaii Residency Programs
Primary Supervisors: Robert Atkinson, M.D., Program Director or Designate via Program Letter of Agreement

Institutional Training Coordinator: Robert Atkinson, M.D.

Goals, Objectives and Implementation for Research
Residents have an opportunity to spend two months devoted to individual research projects. (Refer to Resident Research Program for details.)

Goals, Objectives and Implementation for Electives
Elective rotations outside of Hawaii Residency Program’s affiliated medical centers give residents an opportunity to work with well-known and highly respected orthopaedists in their area of interest. Residents often select sites based upon where they would like to do a fellowship. Rotations at a host institution are generally for one month.

All residents must discuss his/her plans with the Program Director far in advance of the desired time frame for the elective. The issue of medical malpractice coverage must be addressed prior to the granting of permission for the rotation. The Program and the Institution must produce a Program Letter of Agreement and signoff by the HRP Designated Institutional Official is required (this process can easily take 4-6 months). Contact the Program Administrator or the Program Coordinator for more information.
Spine Rotation
At Queen’s Medical Center, Kuakini Medical Center, Pali Momi Medical Center, PGY-5

Description of Rotation
The PGY-5 residents are on the spine service at QMC for three months of their PGY-5 year. This rotation also takes place at Kuakini Hospital (for primarily elective spine surgery) and at Pali Momi Medical Center. Two key faculty members participate on the Spine teaching service (G. Chow and J. Lee). These faculty attendings supervise and scrub with residents on spine cases, and teach residents in outpatient clinics. In the operating room, the faculty will evaluate the resident’s familiarity with the patient, the indications for surgery, understanding of the surgical treatment plan, ability to execute the operative plan, and understanding of the post-operative treatment plan. Residents are asked to present one Spine topic at Grand Rounds, during or immediately following the subspecialty rotation.

Clinical Milestones Addressed During This Rotation:
Degenerative Spine Conditions

Length: 3 months of PGY-V year
Locations: Queens Medical Center and Kuakini Medical Center
Kapiolani Medical Center at Pali Momi, Dr. Lee’s Office
Primary Supervisors:
Gregory Chow, M.D. (Division Chief) (Office: 528-2184)
Jeffrey Lee, M.D. (Office: 523-8833)
Kyle Mitsunaga, M.D. (Office: 522-9633)

Patient Care Competency
Residents must be able to provide patient care that is compassionate, appropriate, patient-centered and effective for the diagnosis and treatment of orthopaedic spinal problems and the promotion of health. Significant leadership in running a patient centered service is expected. Chief 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. Perform a spine focused medical history interview.
3. Be able to perform a comprehensive orthopaedic evaluation and physical exam for patients with spinal deformity, infection, degenerative diseases, and trauma admitted to QMC and Kuakini Hospital.
4. Be able to formulate a medical problem list, with prioritization of medical issues, to facilitate the development of treatment plans for patients with complaints referable to the spine.
5. Perform accurate and careful triage of trauma patients and coordinate their plan of care with attending faculty.
6. Learn to formulate surgical treatment goals for operative cases of degenerative, traumatic, inflammatory, neoplastic, and infectious conditions of the spine, as well as spinal deformities. Learn to prevent intra-operative technical complications during the treatment of said conditions. Make an early diagnosis and provide prompt treatment...
of acute neurological or systemic complications related to spinal surgery.

7. Learn to integrate the clinical presentation with imaging data to make decisions regarding operative care.

8. Be able to assess postoperative progress of spine trauma patients (including SICU course) and patients undergoing elective reconstructive spine surgery.

9. Recognize, diagnose and treat degenerative disc disease of cervical and lumbar spine.

10. Learn to prescribe and/or consult with allied health specialists in PT, OT, vocational counseling, psychiatry, and SW as appropriate and coordinate service referrals to all allied health personnel.

11. Be able to effectively counsel patients and families and caregivers about the plan of care.

12. Be a vital part and leader of the inpatient team under the supervision of attending faculty.

13. Be aware of, identify, and provide postoperative precautions and postoperative goals for therapists.

14. Recognize and diagnose neurological injuries and provide counseling regarding recommended treatment.

15. Learn to properly diagnose (by exam and evaluation of imaging studies), and discuss the methods of treatment for common spinal degenerative and infectious conditions.

16. Perform and assist in surgical procedures of the spine.

17. Develop treatment pathways for cervical and lumbar conditions. (I.e. disc disease, spinal stenosis).

18. Develop surgical skills via surgical cases.

**Medical Knowledge Competency**

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

**Objectives**

1. Define and teach the classification systems for spinal trauma and deformities.

2. Discuss and understand physiology and biomechanics of spinal deformities and degenerative conditions.

3. Understand and perform surgical approaches to the spine, via anatomical dissections and surgical cases.

4. Promptly identify common post operative complications and discuss their prevention.

5. Describe and define common imaging findings in spinal infections, degenerative and neuromuscular conditions.

6. Know treatment algorithms for disc disease, spinal trauma, spondylolisthesis, and spinal infections.

7. Cite levels of evidence in the (spine) orthopaedic case-driven medical literature.

8. Understand and apply biomedical statistics in evaluation of the medical literature.

9. Differentiate between patients who have non operative versus operative fractures and degenerative spinal conditions.


**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. Lead OITE review sessions.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to trauma and reconstructive diagnoses and treatments.
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, Vumedi, etc).
6. Lead discussions concerning patient care with other health care professionals, attendings, including trauma team and consultants.
7. Attend and participate and take a leadership role in teaching conferences and rounds.
8. Produce a pre-rotation list of specific goals and objectives for each rotation; share these goals and objectives with the Program Director and faculty preceptors; track progress towards achieving these goals and objectives; and report on the accomplishments.
9. Use computer based portfolio to track and catalogue operative cases and “technical pearls”, especially for complex cases.

**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 trauma service setting. Understand how mentoring influences junior residents.
3. Integrate and lead in the care of spinal trauma and reconstructive patients on service.
4. Use diagnostic and therapeutic procedures appropriately and judiciously.
5. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care.
7. Participate in clinical pathways designed to improve patient outcomes.
8. Serve as patient advocates in dealing with system complexities.
10. Work effectively with other services, health care agencies, and case managers.
11. Work to improve the system of medical care at Queens Medical Center and at Kuakini Hospital.

**Professionalism**

**Competency**

Residents must demonstrate commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to:
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 decision.
4. Apply sound ethical principles in medical practice, including issues of patient confidentiality, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies.
5. Consider the effects of personal, social, and cultural factors in the disease process and patient management, as it relates to spinal injuries.
6. Demonstrate non-judgmental sensitivity and responsiveness to the age, culture, disability status, and gender of patients and colleagues.
7. Show ethical/professional leadership by example.

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, residents and attendings.
2. Complete dictations and chart notes in a timely manner (monitored by medical records department and Program Director).
3. Discuss diagnoses, prognoses, and treatment options clearly and accurately to patients, and attendings/consultants.
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 orthopaedic patients on the spine service.

Teaching Methods
PGY-5 residents on the Spine service function with better than a 1:1 faculty/resident ratio. Two residents are never on this service concurrently. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences.

Assessment Method (Residents)
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; resident is given a specific formative evaluation at the mid-point and end of the rotation, via the 360 degree evaluation process (using faculty, nurse managers, residents and patient evaluations) will take place at the end of the rotation. Semiannual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

Assessment Method (Rotation Evaluation)
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
Sports Medicine Rotation
At Queen’s Medical Center and the University of Hawaii PGY-4

Description of Rotation
The PGY-4 resident will rotate through the clinics of four fellowship-trained sports medicine physicians for a six-month period. The first half of the rotation will consist of one-month rotations with three preceptors (Drs. Kan, Ignacio, and Marumoto) followed by a three-month rotation with the primary preceptor (Dr. Smith). The rotations will consist of daily clinical, as well as surgical experience. In the clinic the resident will be exposed to a variety of sports-related problems involving primarily the shoulder, elbow, knee and ankle. In the shoulder, the resident will become familiar with the conservative and surgical management of subacromial impingement, traumatic and atraumatic instability, superior labral tears, rotator cuff tears and various tendinopathies. In the knee, the resident will gain experience in the treatment of meniscal tears, patellofemoral pain, anterior and posterior cruciate ligament injuries as well as collateral ligament injuries. In the elbow and ankle, the resident will gain proficiency in the treatment of traumatic and overuse injuries as they relate directly to sports participation. In addition, the PGY-4 resident will acquire medical knowledge and patient care experience with the rehabilitative treatment of sports injuries, both in surgical and non-surgical cases. There is also sports medicine athletic team coverage training at the high school and Division-I collegiate level with specific exposure to the University of Hawaii football and men’s basketball programs. The resident will participate in weekly training room evaluation of athletes. The residents (at all levels of training) voluntarily participate in pre-participation physical exams for the University of Hawaii athletic programs, providing this service to approximately 500 athletes prior to the start of the University’s academic year (August). The program will also provide opportunities for similar services to high school athletic programs (as this becomes available). Finally the resident will have ample opportunity to implement supervised treatment of various overuse syndromes by administering local injections to treat tendinitis and also perform arthrocentesis. During the six month rotation, the residents will be expected to participate in, write and submit for publication, a study directly related to a sports medicine topic. At the end of the six-month rotation, the resident would be expected to be very comfortable with all aspects of sports medicine evaluation and treatment.

Clinical Milestones Addressed During This Rotation:
Anterior Cruciate Ligament
Meniscal Tear
Rotator Cuff Injury

Length: 6 months of PGY-IV year
Location: Queen’s Medical Center, Attendings’ Offices, University of Hawaii
Primary Supervisors:
Jay Marumoto, M.D. (Office: 521-8160)
Sydney Smith, M.D. (Office: 521-8175)
Jay Marumoto, M.D. (Office: 521-8160)
Elizabeth Ignacio, M.D. (Office: 521-8127)
Darryl Kan, M.D. (Office: 521-8123)
Alexander Garber, M.D. (Office: 548-7033)
Jayson Goo, A.T.C.
Tara Humphreys, A.T.C.
Eric Okazaki, A.T.C.

Site Coordinator: Jay Marumoto, M.D.
## Medical Knowledge Competency

Residents must be able to provide patient care that is compassionate, appropriate, patient-centered and effective for the diagnosis treatment of orthopaedic pathology, degenerative arthritis 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. Learn sports injury related medical inquiry to determine mechanism of injury and related information (performance needs and goals).
3. Perform a comprehensive orthopaedic evaluation and physical exam for traumatic and overuse sports injuries to the shoulder, elbow, hip, knee, and ankle.
4. Integrate the clinical presentation of sports injuries with imaging data to make decisions regarding operative care.
5. Formulate a medical and surgical problem list delineating goals to be achieved and complications to be avoided when reconstructive surgery is performed.
7. Make an early diagnosis and provide prompt treatment of acute post operative complications, including nerve palsy, DVT, PE, wound dehiscence, infection, and instability.
8. Assess postoperative progress of patients with sports injuries, who have undergone arthroscopic or open operative treatment.
9. Learn to prescribe in hospital and outpatient PT, utilizing standard post operative protocols for patients undergoing shoulder stabilization, rotator cuff surgery, elbow MCL reconstruction, ACL, PCL reconstruction, meniscal repair/excision, ankle ligament reconstruction.
10. Be able to effectively counsel patients and families and caregivers about the plan of care.
11. Be a vital part of the Sports Medicine team under the supervision of attending faculty, including game coverage for University of Hawaii athletic programs.
12. Participate in pre-participation physical examinations for University of Hawaii athletes and attend training room screening clinics...
13. Be able to diagnose common sports injuries to shoulder, elbow, hip, knee and ankle.
14. Participate in pre and post-operative clinics with attending faculty.
15. Demonstrate and understanding of and use treatment algorithms for complex multi-ligament injuries of the knee.
16. Properly prepare and drape patients for arthroscopic procedures.
17. Perform diagnostic and operative shoulder and knee arthroscopy.
18. Participate in open and arthroscopic stabilization procedures for shoulder, knee and ankle instabilities.

## 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. Understand and use the classification systems for SLAP tears, shoulder instabilities, rotator cuff tears, knee instabilities, and traumatic or degenerative meniscal injuries.
2. Discuss and understand the biomechanics of shoulder instabilities, knee ligament injuries, elbow instabilities (medial and lateral), and ankle instabilities.
3. Know and describe various open and arthroscopic approaches for the treatment of shoulder, elbow, knee and ankle sports injuries.
4. Know and be able to use various implants for shoulder, elbow, knee arthroscopy, based on anatomical and pathological patient characteristics, and treatment goals.
5. Promptly identify common post arthroscopy complications and discuss their prevention.
6. Learn and use evidence based postoperative therapy regimens during the postoperative period.
7. Complete cadaver dissection of shoulder and knee and cite common surgical exposures used during shoulder and knee arthroscopy and reconstructive procedures.
8. Know and be able to cite outcome studies for shoulder stabilization techniques, and ACL, PCL reconstructive procedures and discuss factors that predispose to complications in shoulder and knee arthroscopy.
9. Know appropriate study design for the evaluation of a technique used in ACL reconstruction.
10. Know and discuss risk factors for ACL injury, including gender issues.
11. Describe the protocol for the prevention of ACL injuries in athletes.
12. Differentiate between patients who are best treated by non-operative means.
13. Understand the training techniques available to help prevent overuse injuries in athletes.

**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, especially the Sports Medicine faculty and chief resident(s).
2. Modify self-directed learning appropriately, including feedback provided from OITE results, as it pertains to Sports Medicine questions on the examination.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to shoulder, elbow, knee and ankles, sports injuries and reconstructive treatments.
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 (Arthroscopy DVDs, CDs, Vumedi, etc.)
6. Use dry lab and arthroscopy simulator to improve surgical arthroscopic skills.
7. Contribute to discussions concerning patient care with other health care professionals, Sports Medicine attendings, and consultants.
8. Attend and participate in teaching conferences and rounds.
10. Produce a pre-rotation list of specific goals and objectives; share these goals and objectives 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 Sports Medicine service setting. Evaluate interactions with athletes, trainers and coaches.
3. Integrate the care of patients with sports injuries. Use clinical pathways.
4. Use diagnostic and therapeutic procedures appropriately and judiciously
5. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care
6. Provide data for M&M conferences to positively affect patient care
7. Participate in clinical pathways designed to improve patient outcomes
8. Serve as patient advocates in dealing with system complexities
9. Serve as patient advocates for quality patient care
10. Work effectively with other services, trainers and coaches
11. Work to improve the system of medical care at Queens Medical Center and improve care for the University of Hawaii athletes
12. Provide information on systems issues that may improve patient care (department meetings).

### Professionalism

**Competency**

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

### 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, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies
5. Consider the effects of personal, social, and cultural 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.

7. Understand and be empathetic to special needs and concerns of the elite athlete, who is injured.

**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, trainers and coaches.
2. Complete dictations and chart notes in a timely manner (monitored by medical records department and Program Director)
3. Discuss diagnoses, prognoses, and treatment options clearly and accurately to patients and trainers.
4. Synthesize information and present clinical and diagnostic information clearly to colleagues, trainers and coaches.
5. Utilize effective listening skills
6. Communicate and interact with staff/team in respectful, responsive manner
7. Promote teamwork, and coordinate the work up and treatment of patients on the Sports Medicine service.

**Teaching Methods**
PGY-4 residents on the Sports Medicine service function with better than a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences.

**Assessment Method (Residents)**
Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; resident is given a specific formative evaluation at the mid-point and end of the rotation, via the 360 degree evaluation process (using faculty, nurse managers, residents and patient evaluations) will take place at the end of the rotation. Semiannual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

**Assessment Method (Rotation Evaluation)**
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
Total Joint and Adult Reconstruction Rotation
At Queen’s Medical Center, PGY-3

Description of Rotation
The PGY-3 residents rotate on the adult/joint reconstruction service for three months, with most of their time spent with the two most active reconstructive (hip/knee) surgeons in the state. Residents are in the operating room two and a half days per week and are exposed to eight arthroplasties per week. In addition, residents are in clinic with Drs. Kane and Harpstrite for three half days each week. On average, residents see seventy-five patients per week in the attendings’ clinics. Residents are exempt from in-house night call during this rotation. Residents round on all patients and are responsible for post-operative care. Residents are expected to learn hip and knee clinical exams, especially as it applies to the arthroplasty patient. Pre-operative work up of co-morbidities is stressed. Residents learn and perform operative approaches to hip (anterior and posterior) and knee arthroplasties, under close supervision of the attending faculty. Management of post-operative complications is learned. Residents become familiar with standardized pre-operative and post-operative protocols, including DVT prophylaxis. Each resident is expected to give one grand rounds, on an arthroplasty topic, during this rotation. Directed reading during this rotation is under the direction of Drs. Thomas Kane and Kimo Harpstrite.

In addition to this 3 month rotation, the PGY-3 resident may spend one additional month at Straub Hospital and Clinic, where he is exposed to MIS hip and knee, and shoulder arthroplasty (see Bone and Joint Services at Straub Clinic and Hospital, PGY-3). Also in the PGY-3 year each resident rotates on the upper extremity service for one month and gains exposure to total elbow and shoulder arthroplasty (See Hand, PGY-3).

Clinical Milestones Addressed During This Rotation:
- Hip & Knee Osteo Arthritis
- Hip Fracture
- Metastatic Bone Lesion

Length: 3 months of PGY-III year
Locations: Queens Medical Center
Primary Supervisors: Dr. Kimo Harpstrite (Office: 521-8176)
Dr. Thomas Kane (Office: 521-8177)

Institutional Training Coordinators: Kimo Harpstrite, M.D and Thomas Kane, 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 pathology, degenerative arthritis 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. Perform a comprehensive orthopaedic evaluation and physical exam for degenerative, inflammatory, and post traumatic arthritis and deformities, with special attention to pain, range-of-motion, instability, and function.
4. Formulate a medical and surgical problem list delineating goals to be achieved, and complications to be avoided when reconstructive surgery is performed.
5. Learn to prevent intra-operative technical complications during hip and knee arthroplasty.
6. Learn biomechanical and technical principles of reconstructive long bone osteotomies for the treatment of angular deformities and degenerative arthropathies.
7. Make an early diagnosis and provide prompt treatment of acute post-operative complications, including hypotension, nerve palsy, DVT, PE, wound dehiscence and infection.
8. Integrate the clinical presentation of hip, knee pain with imaging data to make decisions regarding operative care.
9. Assess post-operative progress of arthroplasty patients (including SICU course), and of patients undergoing elective reconstructive bone and joint osteotomies.
10. Prescribe in hospital and outpatient PT, OT, utilizing Queens Medical Center post-arthroplasty clinical care pathways (see Attachments G-1 through G-5)
11. Counsel patients and families and caregivers about the plan of care.
12. Be a vital part of the inpatient team under the supervision of attending faculty
13. Identify and provide post-arthroplasty precautions and goals for therapists.
14. Diagnose and treat hip implant dislocations in the emergency department, when appropriate, under faculty supervision.
15. Complete and pass the Queens conscious sedation certifying exam.
16. Utilize treatment algorithms for the work up and treatment of the infected arthroplasty.
17. Perform joint aspirations for hip and knee, in the process of a work up for infection.
18. Properly prepare and drape patients for arthroplasty procedures
19. Learn to perform a primary hip and knee arthroplasty.
20. Be skilled in pre-operative templating and in the post-operative radiographic assessment of a hip and knee arthroplasty.

**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. Understand and use the classification systems for periprosthetic fractures and bone loss in hip and knee arthroplasty.
2. Discuss and understand the biomechanics of hip and knee arthroplasty.
3. Know and describe the surgical steps and relevant anatomy during the anterior and posterior approaches to the hip.
4. Know and describe various approaches for total knee arthroplasty (routine, subvastus etc).
5. Know and be able to use various implants for hip and knee arthroplasty, based on anatomical and patient characteristics.
6. Promptly identify common post-arthroplasty complications and discuss their prevention.
7. Complete cadaver dissection of hip and knee and cite common surgical exposures used in primary hip and knee arthroplasty.
8. Know and be able to cite outcome studies, and factors that predispose to complications for hip and knee arthroplasty.
9. Know appropriate study design for the evaluation of an arthroplasty technique or specific implant.
10. Differentiate patients who are best treated by non-operative means.

**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, especially faculty and chief resident(s).
2. Modify self-directed learning appropriately, including feedback provided from the OITE results, as it pertains to arthroplasty items on the in-service exam.
3. Appraise and assimilate evidence from scientific studies to enhance patient care, especially as it relates to hip and knee arthroplasty and reconstructive diagnoses and treatments.
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 (Arthroplasty DVDs, CDs, Vumedi etc).
6. Contribute to discussions concerning patient care with other health care professionals, attendings, and consultants.
7. Attend and participate in teaching conferences and rounds.
8. Present one grand rounds on an Arthroplasty topic cleared with the rotation preceptor.
9. Produce a pre-rotation list of specific goals and objectives for each rotation; share these goals and objectives 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 arthroplasty service setting.
3. Integrate the care of arthroplasty patients in inpatient settings. Use clinical pathways.
4. Use diagnostic and therapeutic procedures appropriately and judiciously.
5. Carefully and thoughtfully evaluate the risks, benefits, limitations, and costs of patient care.
6. Provide data for M&M conferences to positively affect patient care.
7. Participate in clinical pathways designed to improve patient outcomes.
8. Serve as patient advocates in dealing with system complexities.
10. Work effectively with other services, health care agencies, and case managers
11. Work to improve the system of medical care at Queens Medical Center
12. Provide information on systems issues that may improve patient care (this performed at department meetings).

**Professionalism**

**Competency**

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

**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, informed consent, provision for the withholding of care, and interactions with insurance companies and disability agencies
5. Consider the effects of personal, social, and cultural 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 (monitored by medical records department and Program Director
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 and treatment of patients on the arthroplasty service.

**Teaching Methods**

PGY-3 residents on the Adult Arthroplasty and reconstructive service function with a 1:1 faculty/resident ratio. Teaching is by case-method with didactic support in the form of basic science lectures, journal club, grand rounds, morbidity and mortality conferences.

**Assessment Method (Residents)**

Resident performance will be subject to daily formative evaluation in the operating room, and the clinic; resident is given a specific formative evaluation 6 weeks into the rotation, to address
any deficiencies; the 360 degree evaluation process (using faculty, nurse managers, residents and patient evaluations) will take place at the end of each quarter. Semiannual Program Director/Faculty/Resident evaluation meetings will provide summative evaluation.

**Assessment Method (Rotation Evaluation)**
Annual evaluations and assessment by the Program Director and faculty. Annual resident confidential evaluation of program, and its rotations.
Tumor/Oncology

Description of Rotation

Length: PGY-II to PGY-V Years
Location: Queen’s Medical Center
Primary Supervisors: Daniel Singer, M.D.

Goals and Objectives

At the end of this experience the resident will be able to:

1. Appropriately evaluate and diagnose suspected sarcomas and metastatic carcinomas
2. Evaluate radiographs to determine late and active or aggressive lesions
3. Stage a sarcoma using the Musculoskeletal Tumor Society (Enneking) staging system
4. Form a differential diagnosis based on the radiographs, physical examination and staging studies
5. Evaluate histology slides and differentiate adenocarcinoma from sarcoma from benign tissue proliferation

Implementation

1. Two forty-five minute didactic lectures that review the biology of sarcomas and staging principles. Participants should review Enneking’s Oncology book Chapters 1 through 5 prior to these lectures.
2. Exercise: Approximately eight 45-minute case presentations will each focus on an area of pathology. An example would be a 45-minute session looking at chondroid forming tumors. Throughout these lectures, participants will review bone and soft-tissue tumors, tumor-like entities, and also entities simulating tumors such as osteomyelitis and metabolic bone disease. Although the focus will be on one particular area that brings the cases of the day together, the participants will not be given the knowledge of the area to be discussed prior to the exercise. It is best that the participants review the topic post-discussion to fill in the gaps of the lecture.
3. There is a monthly tumor conference at 5:00 p.m. on Mondays (TBA). Participants include orthopaedic residents, orthopaedic attendings and pathologists. The cases that are presented are pre- or post-surgical patients that some of the residents may already know about. The cases will be presented for the chosen resident to evaluate, recommend imaging studies, formulate an appropriate workup, stage and recommend surgical radiation and oncologic Rx options.
4. PGY-IV residents will attend a one-week musculoskeletal pathology course sponsored by the University of Florida

Enneking Musculoskeletal Pathology Seminar Overview

This one week seminar (Fall or Spring) is an immersion experience in basic musculoskeletal pathology, correlated with radiographic and imaging staging techniques,
histologic diagnosis, and principles of treatment covering the gamut of musculoskeletal lesions.

Each day begins with a key presentation followed by a morning session concerning specific subjects taught by case presentation that includes microscopic study of the pertinent histologic slides and interactive computer assisted instruction. Experienced musculoskeletal pathologists and orthopaedic surgeons are available for individual instruction throughout these sessions. Discussion cases are available for study during the session and an interactive discussion between faculty and participants focused on the treatment of the subjects under consideration concludes the session.

During the lengthy noon break, the clinical data and histologic slides on the day's unknown cases are available for participant study.

The afternoon session is a duplicate of the morning session; presentation of case materials, histologic slides, and computer assisted instruction of the subjects under consideration, followed by discussion of the treatment focused discussion cases. The day concludes with an interactive discussion between participants and instructors concerning the diagnosis and management of the day's unknowns.

A detailed syllabus is provided to each participant to obviate the need for exhaustive note taking and to allow pre-session reading on the content of the session. Participants are encouraged to bring a laptop computer as they will be provided with a CD-ROM disc that contains data on more than 2000 additional cases, 2200 radiographic and pathologic images, and self evaluation exercises on both the topics covered during the seminar but others, as well, that can be studied during free time.

During the final session on Friday afternoon, teams of three participants review the clinical, radiographic, and pathologic data on diverse unknown cases recording their diagnosis and preferred treatment. The cases are then discussed by the faculty; self scored by the participants. The team participants scoring the highest number of points will receive plaques commemorating their effort during the Awards Banquet on Friday evening. In addition, a certificate for one tuition-free scholarship for a future participant will be awarded the winning team to take to their institution. The location and time for the Awards Banquet TBA.

These seminars have been conducted annually by the Department of Orthopaedics and Rehabilitation at the University of Florida for the past forty-five years. The educational techniques employed have evolved from this experience of interaction with over four thousand residents.

http://www.ortho.ufl.edu/path-course
Resident Research Program

Length: Research and PGY-II to PGY-V years
Primary Supervisor: Robert E. Atkinson, M.D.

Byron Izuka, M.D., Director of Research
Telephone Contact #: Jamie Castelo, Program Coordinator 586-8233

All residents are expected to participate in research activity during their residency. The research resident (six-year track) will have expanded responsibilities during his/her research year. This experience should improve the residents' ability to critically review scientific papers, as well as their ability to prepare and present scientific material at a local, regional and national level.

Scope: All residents are required to complete a Research Project Outline form for each proposed research project. This is regardless of the facility location of their project. All projects must have prior approval of the Program Director. A copy of the Research Project Outline is included in this curriculum guide.

Research Fellow, PGY-III and PGY-V residents are expected to have a clinical or basic science research project completed and submitted for presentation at the Annual Combined Orthopaedic Spring Symposium sponsored in part by the Hawaii Orthopaedic Association (April of every year). This will require an abstract and bibliography submitted approximately two months prior to the meeting. The complete paper summary of the project in publishable form must be submitted approximately one month prior to presentation at this annual meeting.

PGY-II and PGY-IV residents are expected to present a case report at Wednesday morning Orthopaedic Grand Rounds during the second half of the academic year. These residents may submit a comprehensive clinical or basic science review for presentation at the Annual Combined Orthopaedic Spring Symposium sponsored in part by the Hawaii Orthopaedic Association, but it is not required. PGY-IV residents who have completed their Shrine project during the first half of the academic year may present their research during the PGY-4 year or wait until their PGY-5 year. Eligibility for the Shrine Award requires a completed paper two (2) weeks prior to presentation at the Symposium.

Funding for travel to meetings to present papers is contingent upon submission of the paper for publication in a peer-reviewed journal. Abstract submission and acceptance alone will not suffice for funding support from the Program.

Goals and Objectives

Short Term Goals: To encourage participation in local and regional presentations. To define two levels of expectation for presentations within the residency (case reports verses more comprehensive scientific reviews).

Long Term Goals: To develop and encourage scientific presentations and publication at a
national level. To enhance the skills to read and interpret other's scientific work. To understand and enhance the skills necessary to develop a research hypothesis, to submit an IRB, to gather scientific data, to analyze the data, to summarize the finding and to write and publish this summary.

Implementation

1. In September of each academic year, the residents should select the topic of research in consultation with the Program Director.
2. A research advisor will be identified for each project and assist with the completion of the research project outline. Advisors should accept and confirm their participation.
3. By October, the completed outline should be submitted for signature by the Program Director and Research Advisor. In accordance with the above mentioned time line, this project should be completed for submission of the abstract and bibliography two months prior to the spring symposium. For those residents who are required to submit papers, this must be completed one month prior for inclusion in the symposium syllabus.
4. IRB in compliance with institutional guidelines are required for all research projects.*

*All research activities at the University of Hawaii Orthopaedic Residency Program require IRB approval. A copy of the IRB must be on file in the Program office.
UNIVERSITY OF HAWAII ORTHOPAEDIC RESIDENCY PROGRAM

RESEARCH PROJECT OUTLINE GUIDELINES

All research projects need to be approved by Research Advisor and the Program Director. Please use the following guidelines when completing a Research Project Outline form.

1. Title should be the proposed title of the paper that will eventually come from this research, even though this may change with time.

2. The primary author should be listed first. The primary author is the person who has done the bulk of the writing of the paper.

3. Secondary authors are those who have taken direct part in the research, i.e. have participated in the patient evaluations, have done the surgical procedures, have read and edited the final paper, etc.

4. Research Advisor refers to someone on the clinical staff who is overseeing the progress of the paper, but who is not necessarily an author.

5. A brief description of the nature of the research, and the information that is hoped to be gleaned from it, should be presented here.

6. The subjects should be described. The project might include cadavers, animals or humans. The approximate number of subjects should also be included.

7. Source of subjects should include where the cadaveric, animal or human subjects originate.

8. Expenses: This should include a rough idea of what the project might cost or what items might result in a cost to do the project. For example, although the actual cost of followup x-rays might not be known, they should be listed, so that a monetary value can be assigned to the project.

9. Source of funds should include real and potential funding for the project. This would especially include any funds or support from a commercial vendor. List potential granting agencies to which application are planned to be made.

10. Time Line: This is a general outline of the time of the project, i.e. how long it will take to complete each phase of the project and at which meetings, including dates, or to which journals it is planned to submit the finished paper.

11. Residents and faculty have access to a grant writing specialist within the Department of Surgery. Please make contact with this individual (Maria Chun, PhD) early in the process.
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10. Time Line:
   a. Projected Completion Date: ________________________________
   b. Initial Literature Search: ________________________________
   c. Development of Materials: ________________________________
   d. Presentation to IRB/HUC: ________________________________
   e. Development of Materials: ________________________________
   f. Grant Submissions(s): ________________________________
   g. Presentation of Results: ________________________________
   h. Discussion and Comments: ________________________________
   i. Presentation of Paper: ________________________________

Submitted by:

Resident: ________________________________
Print Name ________________________________ Signature ________________________________ Date

Authorization Signatures:

Research Advisor ________________________________ Date

Robert E. Atkinson, M.D. ________________________________ Date
Program Director

Completed form with all authorization signatures must be returned to the Program Office.

Listed below are several administrative and educational responsibilities that every resident must be aware of (refer to Hawaii Residency Programs Resident Employee Handbook for additional requirements). This list is by no means exhaustive.

Evaluation Process

Residents are provided with the opportunity to evaluate the faculty, junior and senior residents, individual rotations, the program in general and themselves over the course of the academic year. Evaluations (and other Program functions) are available via the New Innovations Residency Management Suite. This website is located at [https://www.new-innov.com/Login/Login.aspx](https://www.new-innov.com/Login/Login.aspx). Logon information is provided to residents upon starting the program. The Program asks that evaluations of all types be conducted in a professional manner!

1. Faculty Evaluations

   Residents are given the opportunity to evaluate the proficiency of the teaching staff following every rotation, via the New Innovations web-based residency management application. The Program Director uses input from these evaluations to conduct yearly faculty evaluations. This evaluation form is also used by junior residents to evaluate senior/chief residents. These evaluations are confidential. A copy of the Evaluation of Faculty by Residents is included in this Guide as an appendix.

2. Rotation Evaluations

   At the end of each rotation, residents are required to complete a rotation evaluation form. The ratings and comments will remain confidential, and thus the residents should be forthright in their evaluations. A copy of the Resident Evaluation of Rotation is included in this Guide as an appendix.

3. Program Evaluations

   Residents are asked to evaluate the Program at the end of each academic year. This evaluation is anonymous. A copy of the Resident Program Evaluation is included in this Guide as an appendix.

4. Resident Evaluations

   Residents are formally evaluated and counseled on a six-month basis (semi-annual resident evaluation). A comprehensive evaluation is obtained on each of the residents from attending staff, nursing staff and paraprofessional personnel (x-ray, cast technicians, etc.). A copy of the Faculty Evaluation of Resident Core Competencies Evaluation
Form is included in this Guide as an appendix. Faculty also evaluate residents using the ACGME Milestones. Residents also do a self-evaluation using the Milestones and the Milestones sub-competencies. A copy of the ACGME Milestones evaluation is included in this Guide on page 20. A copy of the Nurse 360 Degree Rating Form is also included in this Guide as an appendix. This form is used by Nurses, Nurse Managers, technicians and other non-MD staff.

Semiannual resident evaluation meetings are held in December and June of each academic year. Participants include the Program Director, faculty preceptors from rotations recently completed or in progress, the Program Administrator and residents. Materials reviewed include composite reports of resident 360 degree competency-based evaluations (as described above) and case logs accumulated since the previous evaluation, as well as information submitted by residents (as part of his/her portfolio; e.g. lectures given, morbidity and mortality presentations, patient evaluations, research projects, etc.). “Areas of Strength” and “Areas of Weakness” within the structure of the six competencies are covered, and recommendations to the resident based upon the competencies are made. This evaluative process determines an overall performance evaluation in competency-based format which is also documented on a written transcript (using a Likert scale) with a score of 1 (Poor) to 5 (Excellent) and whether the resident successfully completed the rotation(s). The Program Director produces a narrative of the evaluation proceedings which is then reviewed with the residents individually. In addition to reviewing the narrative and the resident’s rotation scores, recent OITE results are also discussed. Personal and professional issues relating to morale are also discussed, as are future goals. Both the resident and the Program Director sign the semi-annual resident evaluation summary and it is placed in the resident file along with composite evaluation reports from New Innovations and ACGME case log printouts. Development and maintenance of resident portfolios is supported by residents, the Program Director and the administrative staff. PGY-1 residents on the general surgery service, are evaluated similarly by faculty preceptors and senior residents. Findings/recommendations are provided to the Orthopaedic Program Director.

The General Surgery Program Director produces a similar, competency-based narrative which he reviews individually with each resident. When PGY-1’s are on the orthopaedic service for twelve weeks of their PGY-1 year, Exit Interviews are conducted in a one-on-one setting with the Orthopaedic Program Director.

Promotion to the next level of training is based upon the satisfactory performance of all required duties, including clinical, academic and endeavors and demonstration of competency in all domains (Patient Care, Medical Knowledge, Interpersonal and Communications Skills, Systems-Based Practice, Practice-Based Learning and Improvement and Professionalism).

The evaluation of residents is an ongoing process; therefore, attending staff and faculty constantly monitor the resident’s patient care on a daily basis through ward rounds, observation, and co-management of problems in the operating room and in outpatient clinics. Formative feedback should be frequent.
Medical Records

Although the exact procedure for medical record keeping will vary at each hospital, it is the resident’s responsibility to complete all medical records in a timely manner. Notes should be legible and complete. All dictations must be completed before the end of the rotation. The Program administrative staff keeps the Program Director apprised on non-compliance.

Resident Advising System

Residents will be assigned a faculty advisor with whom they will meet on a semi-annual basis. If necessary, more frequent sessions can be arranged. Advisors can become a good ally for residents during their residency training, and should be looked to as a source of information and support. At each advising session, residents and advisors will discuss career goals and evaluations of performance on rotations. In addition, residents will be given the opportunity to evaluate their own performance, strengths, and weaknesses. Residents and their advisors will work out a plan for reading and improving skills and knowledge levels, as well as a plan to monitor the resident’s progress.

It is important to remember that the advisor is not just someone to see for 30 minutes twice a year. By sharing concerns and accomplishments with the advisor, residents will build a valuable relationship that can greatly aid them during residency training and beyond.

Resident Operative Experience Reporting

Residents are required by the Residency Review Committee for Orthopaedic Surgery to use the internet-based Resident Operative Experience System to keep track of their operative cases. This website is located at http://www.acgme.org Use the Data Collection Systems/Resident Case Log System tab for access. Logon information is provided to residents upon entering the program. Only cases logged in PGY-2 through PGY-5 will be retained by the Orthopaedic RRC. PGY-1 on the general surgery services or the non-Orthopaedic electives should not log cases into the orthopaedic case log system. Residents are encouraged to keep their own record of all cases. Customized spreadsheets and other databases have been used creatively by residents over the years to maintain operative data and attending physician preferences.

Steinmann Pin Placement Credentialing

Residents are required to perform three (3) successful Steinmann pin placement procedures. Procedure Log Cards are available at the Program Office. Faculty and Chief Residents are able to sign off of pin placements. Completed cards are submitted to the Orthopaedic Program Coordinator.