

**King Abdulaziz Medical City Orthopedic Trauma Surgery**

**fellowship**

**National Guard Health Affairs**

**Riyadh, Saudi Arabia**

**(Orthopedics Trauma Surgery)**

2017

## INTRODUCTION

Orthopedic Trauma is a well established subspecialty. Orthopedic Trauma surgeons deal with severely injured poly-trauma patients, patients with multiple fractures, pelvis and acetabular fractures, post traumatic complications including malunion, non union and infections, in addition to various other medical conditions as part of reconstruction in conjunction with other specialties like tumors and complex joint reconstructions. Several hospitals in Saudi Arabia provide orthopedic trauma care at variable standards. They cover wide range of injuries that encompasses most of common orthopedic injuries, however there is general paucity in trained orthopedic trauma surgeons all over the kingdom. Orthopedic Trauma Fellowship in King Abdulaziz Medical City has been well known for the last 12-14 years, with a reasonable number of graduated fellows who are working now in different of regions of the kingdom and some Gulf countries, in addition to other various fellowships in other surgical specialties including, vascular surgery, colorectal surgery and several other fellowship programs.

The aim of the King Abdulaziz Medical City Clinical Orthopedic Trauma fellowship is to train board certified orthopedic surgeons into becoming well-

qualified orthopedic trauma surgeons. The Fellow will gain the required expertise in this field by training at our institution, supervised by qualified orthopedic trauma surgeons. Simultaneously, the program will offer the opportunity for academic interaction and research.

All supervising consultants are fellowship certified orthopedic trauma surgeons with vast expertise and training in the field. The Fellows will be able to practice the appropriate multidisciplinary patient care by utilizing the presence of a dedicated pain service team, trauma and surgical intensive care units, interventional radiology service, and an active physiotherapy unit, providing the complete clinical management necessary for such patients. The fellow will have a unique opportunity in supervising medical students, interns and residents since our institution is a well - established residency training program center for Orthopedics Surgery.

### **1. Goals and Objectives**

The fellow is expected to demonstrate appropriate competencies as per Can Meds domains.

#### **• Professionalism**

- To acquire the appropriate attitudes and support that should be provided to other professionals involved in patient's care.

- To acquire the appropriate attitudes and support that should be provided to patients with orthopedic trauma.
- To reinforce the principles of ethical behavior and familiarize the fellow with ethical issues of particular relevance to orthopedic trauma.

- **Scholar**

- Gain basic skills necessary to critically appraise medical information.
- Gain basic skills necessary to conduct a scientific research.
- Ability to recognize areas of research deficiency.
- Ability to enhance knowledge and practice thorough updated evidence Based practice.

- **Communicator**

- Ability to listen to the patient or the concerned family effectively and perform a proper history.
- Ability to serve patients well through proper communication between Necessary services.

- Ability to communicate sufficient information with the patient or the family such as, proper consent and relevant health information.

- **Collaborator**

- Consult physicians and health care professionals effectively.
- Contribute to interdisciplinary team activities such as Trauma surgeons (general surgeons/ general trauma rounds, neurosurgeons and urology).

- **Health advocate**

- Ability to recognize adverse health behavior that may affect the patient's health e.g. smoking.
- Ability to recognize certain trends in behavior that may adversely affect the patient e.g. not wearing seat belt.
- Recognize elements that may enhance injury prevention behavior.

- **Knowledge**

- Ability to reach an appropriate differential diagnosis based on sound clinical assessment and request relevant investigations.

- Ability to practice decision making in managing trauma patients in conservative and operative ways.
  - Demonstrate the need for consultation of other health services when necessary.
  - Ability to deal with emergency situations well from clinical prospective in a calm and prioritized way.
  - To develop an awareness of quality Assurance issues specifically related to the specialty.
  - Familiarize the fellow thoroughly with the pathophysiology and natural history of all conditions relevant to orthopedic trauma.
- Operative Skills:**
- Acquire necessary skills needed to practice and teach orthopedic trauma surgery.
  - Ability to grasp new techniques in surgery.
  - Ability to adapt well in the OR environment.
  - The Fellowship Scientific committee is responsible of preparing a clear list of Orthopedic Trauma Surgery procedures that the fellow will need to

participate in as a surgeon or as a first assistant, the fellow will be required to complete a certain number of each procedure during the training period.

- **Manager**

- Ability to manage health resource efficiently.
- Ability to work efficiently in a health care organization.
- Ability to utilize advanced technology to improve patient care (PACS, electronic database).
- Ability to manage time well during rotations e.g. emergency, inpatient, and operative responsibilities.
- Ability to organize academic activities e.g. rounds, Journal clubs.
- Ability to supervise junior staff.

## **2. Admission Criteria**

The Fellow must meet the following requirements:

1. The prospective candidate must have completed formal residency training in orthopedic surgery and be board certified by the Saudi Council for Health Specialties (SCHS) or its equivalent.
2. The candidate must have successfully completed a personal interview by members of the Fellowship Scientific committee (the fellowship scientific Committee is discussed in more details below).
3. Three confidential letters of reference.
4. Sponsorship.

#### **4. Program Outline**

##### **a. Duration**

2 years of clinical rotations; divided between preceptors.

##### **b. Content**

In order to promote high quality, safe care of orthopedic trauma patients, the curriculum specifies the parameters of knowledge, clinical skills, technical skills, professional behavior and leadership skills that are considered necessary to ensure patient safety throughout the training process and specifically at the end of training. The content therefore provides the framework for surgeons to develop



their skills and judgment and a commitment to lifelong learning in line with the service they provide.

### 1. *Required special knowledge*

1.1 Upon completion of the training period, the Fellow should be able to diagnose, manage, and give prognosis on the full spectrum of orthopedic trauma with perioperative medical and surgical problems.

1.2 He/she will have both the technical expertise and intellectual maturity to understand and apply the material.

1.3 He/she should demonstrate teaching abilities.

1.4 He/she should demonstrate interest in research.

### 2. *Required skills*

#### a. Clinical Skills:

By the end of training the Fellow should have acquired skills appropriate to those of a level of a consultant in the following areas:

1. Pre-operative care, which includes:

a. History and physical examination skills specific to orthopedic trauma conditions. It includes the skills necessary to counsel the patients and the family and be able to set expectations accurately.

b. Appropriate utilization of diagnostic resources including their interpretations.

c. Providing appropriate pre-operative care necessary for the surgery. This will be evaluated by direct observation on an on-going basis, and formally reported on the evaluation form. It will also be tested during in-training examinations, to which the CanMeds standards will apply.

2. Operative care:

This includes both minor and major surgery, with the emphasis on index cases. The Fellow must demonstrate an ability to exercise judgment and control in unexpected situations, and ingenuity in dealing with “one-of-a-kind” problems. He/she should demonstrate an ability to assist more junior colleagues in the performance of procedures, and should be able to operate independently. This will be evaluated by direct observation on an on-going basis, and formally reported on the evaluation form. A log of all operative procedures must be kept and provided to the Program Director on an official form.

3. Postoperative care:

This includes appropriate hemodynamic and neurovascular monitoring and prevention of complications. This will be evaluated by direct supervision and reviewed at the time of ward rounds and formally reported on the evaluation form.

**c. Instructional and Educational Activities**

1. Weekly hospital-based grand rounds
2. Monthly combined journal club
3. Monthly combined trauma presentations.
4. Involvement in local and international meetings, courses, and symposia

**d. Intra and Inter-hospital rotations**

- The fellowship consists of 4 months clinical blocks between various involved preceptors, concentrating on the management of complex upper extremity, lower extremity, pelvis and acetabular fractures ,in addition to hip and knee joint reconstruction and foot and ankle surgery.
  
- It is encouraged to facilitate a master program in research (e.g. medical education, epidemiology, public health) or enhance clinical training (e.g. pain

service, MSK radiology), however, this is not part of the requirements to complete the fellowship training.

- 3 months of elective rotation could be done during the fellowship period.
- The 3 months elective rotation could be spent in a recognized trauma center inside or outside Saudi Arabia. It has to be approved by the fellowship committee.

**e. Responsibilities of fellows in:**

*1. Outpatients*

This includes coverage of 1 to 2 outpatient sessions (clinics) per week supervised by the primary consultant.

*2. Inpatients*

Inpatient care; daily rounds and supervision of in-training residents.

*3. Consultations and On-call duties*

- Both in-house and emergency department orthopedic consultations according to the assigned on-call schedule.
- The fellow should cover 7-8 home calls per months.

- An attending trauma surgeon will supervise the fellow during the on-call duties.

#### *4. Research*

- Each fellow should complete a research paper per year; defined as an abstract ready for submission to a journal/conference. It may include one case report, these research papers should be ready by the end of the fellowship.
- The fellows are encouraged to submit research abstracts to be presented in local and international trauma conferences.

#### *5. Management*

- Ability to supervise junior and senior residents.
- Ability to organize educational activities.
- Arrange weekly grand rounds.
- Collaborate with other specialties, e.g. pain service, anesthesia, intra-operative monitoring personnel, emergency department, general trauma surgeons and physiotherapy.

**f. Holiday/leaves entitlement:**

- 4 weeks per year of holiday
- 1 week for professional leave
- Additional 1 week may be granted by the fellowship committee if the fellow is presenting in an international conference

**g. Continuous assessment and Promotion Criteria**

- The fellow should pass the following criteria to get promoted from the 1st to the second year:
  - In-training evaluation. It should be done every 3 months. A pass of 60% or more is required.
  - Finish an abstract eligible for submission to an international conference/Journal for publication.

**h. Program Administration**

*1. Fellowship Scientific Committee*

A Scientific Committee will be formed in order to regulate and monitor the quality fellowship program, the scientific Committee will include the current practicing Orthopedics Trauma Consultants at King Abdulaziz Medical City, Riyadh, Saudi Arabia.

## *2. Program Director*

The program director is one of the members of the fellowship scientific committee.

## *3. Responsibility of the fellowship scientific committee*

- Organize the fellows' rotation.
- Organize educational activities.
- Reviews the in-training evaluations.
- Counseling.
- Arrange admission interviews.
- Arrange Fellowship committee meetings.

- Corresponds on behalf of the program to outside communications.
- Assigning one of the committee members as the fellowship program director.

### **5. Program Requirement**

#### *a. Consultant staff; numbers and qualifications*

- Consultant staff is a full time or a part time orthopedic trauma consultant.
- Consultants are board certified orthopedics and are orthopedic trauma fellowship trained.

#### *b. Clinical materials and number of beds*

- Both elective and emergency practice.
- Minimum of 3 Orthopedic Trauma O.R. sessions per week.
- Clinic time: 1-2 sessions per week dedicated for orthopedic trauma practice

#### *c. Other hospital resources*

- Fully equipped orthopedic trauma surgery operating room: related instruments, implants, and intra-operative imaging.
- MSK radiology and interventional radiology
- Intensive care unit
- Emergency that receives poly and major trauma cases



### 3) *Core competencies:*

The fellow is expected to demonstrate appropriate competencies necessary for his/her to work as a medical provider and a trauma surgeon. It includes an adequate communication with the patient and medical staff, proper professional behavior and enthusiastic collaborator with others included in the care of the patient. More competency issues are related to the ability to be a true scholar when it comes to medical care and a medical expert who seeks knowledge and modern literature for clinical challenges that may come across. The fellow will develop an ability to anticipate and address patients' questions and concerns. Given the wide variety of options available to treat a trauma condition, the fellow should be able to develop the critical appraisal skills necessary to judge the literature and decide the appropriate procedure that is more suitable for the patient. He/she should be able to justify that choice and this will be tested on in-training examinations. He/she should be able to critically evaluate articles presented at the Journal Club.

Medico-legal and ethical issues sometimes overlap. However, the rules and regulations of the country apply. The following specific issues, among others, should be addressed through reading and attendance at ethics rounds and more informal discussions:

- a. Informed consent.
- b. Refusal of treatment, especially in situations where “quality of life” is a major issue.
- c. Family conflict in treatment decisions.
- d. Withholding of treatment.
- e. Family-physician conflict in treatment decisions. Physician-physician conflict.
- g. Ethics of research .

### **Duration of the program**

This Fellowship Program consists of two years of full-time, structured and supervised training in orthopedic trauma surgery. The distribution will be between involved trauma surgeons.

They will have detailed knowledge of intensive care, the principles of rehabilitation and of the management of Spinal cord injury. The fellow will be able to provide diagnoses and management of all emergency and elective trauma cases, in the following fields with appropriate supervision:

- o **Pelvis and acetabular fractures:**

Including a wide range from relatively simple to complex fracture patterns , that require extensile or combined approaches , with early , delayed or late presentations.

- Complex intra and periarticular fractures.
- Polytrauma patients with high ISS , applying the principles of damage control vs early total care orthopedics.
- Treatment of acute and complex orthopedic emergencies in life saving and limb saving procedures.
- Posttraumatic complications : like joint stiffness or post traumatic defotmities.
- Cases of malunion or nonunion with special care to infected nonunion cases
- Post traumatic reconstructions in conjunction with other subspecialties like periprosthetic fractures and delayed joint reconstruction in preparation for complex post traumatic joint replacements.

By the end of training, the fellow should be able to demonstrate:

- Theoretical and practical knowledge related to orthopedic trauma.
- Technical and operative skills.

- Confident clinical skills and judgment.
- Generic professional and leadership skills.
- The special attributes needed to be an orthopedic trauma surgeon.
- A commitment to their ongoing personal and professional development and practice using reflective practice and other educational processes.

The Fellow must adhere to the rules and regulations of the Saudi Council for Health Specialties during the training period.

### **Number of Fellows**

One fellow per year.

### **Fellowship Staff:**

Consultants have to be fellowship-trained orthopedic trauma surgeons.

### **Evaluation and certification:**

The trainee will be evaluated according to the regulations of the Academic affairs at King Abdulaziz Medical City.

1. The promotion of the candidate from one level to another will be determined by:
  - a) Passing end year in training interview.
  - b) Overall performance assessment while in-training.
  - c) Approval of the fellowship scientific committee.
2. Upon completion of the second year, the fellow will receive Certificate of Completion of Training.

Successful candidates will be awarded "Orthopedic Trauma Fellowship Degree".

### **Program Director**

He/she should be a full time Orthopedic Trauma Surgery Consultant. He/she should also be approved by the fellowship Scientific Committee and be able to:

- 1) Demonstrate commitment to the specialty.
- 2) Show the interest, authority and commitment necessary to fulfill teaching responsibilities in order to develop, implement and achieve the educational goals and objectives of the program.
- 3) Maintain an active clinical involvement in the service of orthopedic trauma surgery.

- 4) Pursue continuing education in Orthopedic Trauma Surgery.
- 5) Exhibit an active interest in medical research related to orthopedic trauma.

### **The trainer (Instructor)**

He/she should be a full time Orthopedic Trauma Consultant. He/she should also be approved by the fellowship scientific Committee, and be able to:

1. Demonstrate commitment to the specialty.
2. Show interest and commitment to fulfill teaching and technical responsibilities.
3. Maintain an active clinical involvement in the service of orthopedic trauma.
4. Pursue continuing education in orthopedic trauma.

### **Duties of the Trainee**

As a general principle, continuity of care should be emphasized. Ideally, the Fellow should seek to follow patients from the time of the pre-admission evaluation (consultation) or the admission history/physical, through the in-hospital phase of treatment, including surgery and the follow-up visits. It is particularly important that he/ she remain intimately involved with the day to day care of the

patients in the ICU or special observation unit (Stepdown, High Dependency Unit), and attend all trauma cases of the assigned team.

- The Fellow should attend outpatient clinics to get an adequate ambulatory care experience. It will also sharpen the diagnostic skills, provide a venue for active case discussion, and teaches the selection of cases for surgery. Outpatient clinic is an opportunity to enhance the relationship with the patient.
- The Fellow is also encouraged to attend all surgical procedures of interest in other disciplines when relevant to the secondary objectives of training.
- The Fellow is expected to undertake one or more clinical or basic science research projects. This is a training requirement.
  
- The Fellow should attend and actively participate in the Orthopedic Trauma Club meetings, and be responsible for organizing all academic activities within the department.
- The Fellow must play a major role in the teaching and supervision of the junior residents in their daily clinical work.

- The Fellow must be involved in all relevant clinical activities of the unit and run the day-to-day work of the unit.

The candidate will be granted four weeks of holiday per year, as well as one Eid holiday per year, as determined by the training Hospital concerned.

### **Disciplinary Actions and Dismissal**

Disciplinary actions and dismissal from the program will be taken according to the Rules and Regulations of Saudi Council for Health Specialties and participating hospitals. The educational committee of the training program should approve such actions.

### **Current Orthopedics Trauma Surgery Consultants At King Abdulaziz**

#### **Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia:**

- 1- Dr. Abdullah Alzahrani, Consultant Orthopedic Trauma and Hip surgery (full time).
- 2- Dr. Wael Taha, Consultant Orthopedic Trauma surgery (part time).



- 3- Dr. Khalid Alshaikh, Consultant Orthopedic Trauma and Joint reconstruction(full time)
- 4- Dr. Ali Alshehri, Consultant Orthopedic Trauma and Foot and Ankle surgery(full time).