

SUNY UPSTATE MEDICAL UNIVERSITY

DEPARTMENT OF ORTHOPEDIC SURGERY

POST-GRADUATE FELLOWSHIP
IN SPINE SURGERY

EDUCATIONAL PROGRAM DESCRIPTION

Program Director: William F. Lavelle, MD

Faculty:

Mike Sun, MD

Richard Tallarico, MD

Revised March 2022

Contents

Introduction	3
EDUCATIONAL GOALS AND OBJECTIVES (AIMS)	5
EDUCATION PROGRAM	8
Educational Settings	8
Spine Surgery Educational Conferences	8
Spine Meeting Attendance	10
Curriculum Components	10
Research Settings	10
Clinical Activities	11
MOONLIGHTING POLICY	13
SUPERVISORY LINES OF RESPONSIBILITY FOR CARE OF PATIENTS	13
PROFESSIONALISM	13
EVALUATION	13
OTHER UPSTATE GME POLICIES	14
ACGME PROGRAM REQUIREMENTS	14
APPENDIX A	15
APPENDIX B:	17
APPENDIX C	19

Introduction

The mission of SUNY Upstate Spine Surgery Fellowship is to deliver outstanding medical education focused on patient care, teaching, research, and community care that results in improving the health of the communities in which they serve. Our fellows learn in a faculty mentor model, which promotes collaboration, accountability and respect. Our fellows are graduated to be physicians who are dedicated to excellent and responsible clinical practice, research, and lifelong learning.

The Fellowship program is designed to provide subspecialty training in orthopedic spine surgery and includes the in-depth study, prevention, and treatment of spinal column diseases, disorders, and injuries by medical, physical, and surgical methods. Experiences are provided in both the inpatient and outpatient settings in the treatment of adult and pediatric spinal conditions. Fellowship participants provide evaluation and care of a diverse population of patients with a wide variety of problems in various spinal regions.

Physicians entering the Fellowship program must have successfully completed a residency program in either Orthopedics or Neurosurgery. The physician will be expected to have had some specific training in the evaluation and treatment of degenerative, traumatic, inflammatory and neoplastic disorders of the spine. The Fellowship program, building on this prior experience, is directed to providing an integrated experience in surgery, office practice, and trauma, as well as, experience in clinical and basic science research. The range of experience is designed to provide the Fellowship participant with the background necessary to pursue the clinical practice of spine surgery and/or focus on a career in academic spine surgery.

During the Fellowship program the participant will be exposed to a variety of educational activities. These will include, but not necessarily be limited to: participation in spinal surgery; participation in and direction of didactic sessions; work with patients in office settings; teaching of other residents, students, and health related professionals; and conducting and reporting on appropriate research activities. By the completion of the Fellowship program, the participant will be able to diagnose and manage degenerative, traumatic, infectious, and neoplastic conditions of the spine.

As part of the ACGME's continuing efforts to ensure the all ACGME accredited fellowship programs are meeting educational standards, our Fellowship program requires its fellows to obtain competencies in the six areas below to the level expected of a new practitioner. To assure that each competency is attained, a systematic ongoing evaluation program is used. The following are the core competencies as listed on the ACGME web site. A full description of each competency is located in Appendix C of this document.

Patient Care (PC) Patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Medical Knowledge (MK) 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.

Practice-Based Learning and Improvement (PBL) Practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care

Interpersonal and Communication Skills (IC) Interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

Professionalism (P) Professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

Systems-Based Practice (SBP) Systems-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

*Within the context of this document the specific core competencies that are addressed are delineated by the abbreviations that have been placed in parenthesis.

EDUCATIONAL GOALS AND OBJECTIVES (AIMS)

In developing these goals and objectives, we utilized the following published guidelines:

Jerkewitz HN*, Connolly PJ*, Gundry CR*, Varlotta GP*, Zdeblick TA*, Truumees E. Educational guidelines for resident training in spinal surgery. Spine Volume 25, Number 20, pp.2703-2707, 2000.

*The Resident/Fellow Education Committee of the North American Spine Society

GOAL 1: *To develop the spine surgery Fellow's core knowledge underlying the clinical care of spinal disorders.*

Objective 1: To demonstrate an understanding of the pathophysiology and natural history of the various common spinal disorders. (PC, MK)

Objective 2: To demonstrate an understanding of the biomechanical concepts of spinal stability and the effects of internal and external fixation on the stability of the spine. (MK)

Areas for Objectives 1 and 2:

- a. spinal anatomy and histology
- b. biomechanics
- c. physiology
- d. pathophysiology of degenerative diseases
- e. trauma and spinal cord injury
- f. infection
- g. neoplastic disease
- h. osteoporosis
- i. deformity

GOAL 2: *To develop the spine surgery Fellow's knowledge and skills for the evaluation of patients with spinal disorders.*

Objective 3: To be able to appropriately evaluate patients presenting with spinal disorders in a variety of clinical settings, including the emergency department and the outpatient clinic. This would include competency with the physical and neurological examination of the patient. (PC, MK, PBL, IC)

Areas for Objective 3:

- a. herniated disc
- b. spinal stenosis
- c. spinal fractures
- d. spinal cord injury
- e. infection
- f. tumors
- g. spondylolisthesis
- h. back and neck pain

Objective 4: To be able to appropriately order and evaluate diagnostic imaging of the spine. (PC, MK, SBP)

Areas for Objective 4:

- a. plain radiographs
- b. CT
- c. MRI
- d. Myelogram
- e. discogram
- f. nuclear medicine studies
- g. electrophysiologic studies

GOAL 3: *To develop the spine surgery Fellow's knowledge and skills for formulating and executing a non-operative treatment plan for patients with spinal disorders. The Fellow should develop experience in the non-operative management of spinal disorders.*

Objective 5: To be able to formulate, articulate, and execute a treatment plan for patients with spinal disorders. (PC, MK, IC)

Objective 6: To be able to manage the initial and definitive care of patients with spinal trauma. (PC)

Objective 7: To be able to treat non-operative spinal disorders in the outpatient setting. (PC, MK, IC, P)

Areas for Objectives 5, 6, and 7:

- a. cervical, thoracic, and lumbar trauma
- b. spinal immobilization
- c. placement of skeletal traction
- d. medical and hemodynamic management of patients with acute spinal injuries
- e. management of low back pain
- f. management of neck pain
- g. role of non-operative modalities of spinal care

GOAL 4: *To develop the spine surgery Fellow's experience in performing surgery on the spine for an encompassing range of spinal conditions defined below.*

Objective 8: To be able to participate in spine surgery at a level appropriate for a spine surgeon. (PC, MK)

Areas for Objective 8:

- a. disc herniation surgery
- b. decompressive laminectomy/foraminotomy
- c. non-instrumented and instrumented posterolateral fusion
- d. interbody fusion (anterior, posterior, and transforaminal)
- e. anterior and posterior bone graft harvest

- f. instrumentation of spinal fractures
- g. instrumentation of the deformed spine
- h. correction of spinal deformities
- i. decompression of spinal tumors

GOAL 5: *To provide the fellow with the opportunity to participate in clinical and/or basic science research, with the experience resulting in a manuscript suitable for publication.*

Objective 9: To identify opportunities for scholarly inquiry and defining a clinical question. (PC, MK)

Objective 10: To critically assess and evaluate the existing literature as related to the proposed project. (PC, MK, PBL)

Objective 11: To concentrate on a specific clinical problem that can be addressed by answering specific research questions. (PC)

Objective 12: To perform research and become familiar with study design, data collection and data analysis. (MK, PBL)

Objective 13: To concisely summarize the research results and to put them into the context of previous findings.

Objective 14: To critique the orthopedic research literature and to evaluate their applicability to one's developing clinical practice.

EDUCATION PROGRAM

The education program is designed to address each of the four major goal areas: knowledge of surgical and non-surgical techniques, research, education, and teaching. Because each of these skill areas require somewhat different yet related experiences, the education program occurs in a variety of settings. Further, the Fellow is exposed to diverse areas of expertise including adult and pediatric deformities, degenerative conditions, traumatic injuries, and infectious disorders of the cervical, thoracic, and lumbar spine. They must learn the process by which primary and metastatic tumors are evaluated and treated.

Educational Settings

The development of the Fellow's knowledge and surgical techniques for treating diseases of the spine occurs in a variety of educational settings. Under attending supervision, the Fellow directs an outpatient spine clinic. Surgery cases are coordinated through the availability of the adult and pediatric orthopedic spine surgeons and of selected neurosurgeons from the Department of Neurosurgery at SUNY Upstate Medical University. The Fellow is involved in other clinical education activities as outlined in the "Clinical Activities" section of this manual.

Routine educational experiences take place in two major settings:

1. Upstate Bone and Joint Center
Enclosed within this space are: offices of the attending spine staff, outpatient clinics of the Orthopedic Department, radiography with an up-to-date MRI imaging facility, outpatient surgery facility; and anesthesia maintains a center for performing therapeutic and diagnostic blocks.
2. SUNY Upstate Medical University Hospital, Crouse Hospital, VA Hospital
Surgery experiences occur predominantly at the SUNY Upstate Medical University and associated clinics. The operating rooms are equipped to perform all types of spinal procedures including anterior and posterior approaches to the cervical, thoracic, and lumbar spine. Instrumentation of the appropriate areas is aided by excellent radiographic assistance both within and outside of the operating rooms. All of the services expected from a medical school are available within the University Hospital including Neurosurgery, Rehabilitation, Neurology, and Medical Subspecialties. Crouse Hospital is a private hospital that is connected to Upstate by a bridge. Upstate Orthopedics maintains an elective spine practice that runs out of this facility. Fellows have the option of participating in patient care at Crouse. In rare instances, the Fellow may have the opportunity to work at the VA Hospital.

Spine Surgery Educational Conferences

Conferences are a major part of the program (Core lecture series -Appendix A, B). The Fellow is expected to attend the Monday morning spine conference, Wednesday morning Orthopedic Grand Rounds as well as Thursday morning indications conference as defined below. At times the Fellow may be asked to lecture medical students and physical therapy students on spinal disorders.

The fund of medical knowledge is obviously best increased through the clinical experiences described above. However, this is supplemented through interactive didactic sessions and conferences.

a) Monday Morning Spine Core Curriculum Conference: The spine service hosts a weekly didactic session that is open to the entire Orthopedic and Neurosurgery residency. These sessions occur each Monday beginning at 6:45AM. Sessions are topic based as outlined by the core lecture series list presented below. Prior to each session, a reading is assigned. All participants including medical students, residents, fellows, and attending staff are expected to have completed this reading prior to the session. The first fifteen minutes of the session are a topic based case presentation to stimulate an interactive discussion concerning the reading and pertinent case. Promptly at 7:00AM a PowerPoint lecture concerning the topic is given. These lectures are topical presentations that have been prepared by the attending staff. In an effort to improve the residents' and fellows' understanding of the topic, encourage resident and fellow participation, and provide the opportunity for residents and fellows to speak about a topic in front of an audience, residents and fellows are asked to "present" the lecture. All of the attending staff are present during the lecture and the attending staff who developed the power point lecture moderates and guides the session. An open discussion forum occurs at the conclusion of the lecture. The last fifteen minutes of the session are reserved for a five question multiple choice quiz. These quizzes are utilized to ensure that the quality of the educational session has been maintained and offer participants the opportunity to practice standardized exam questions on the topic.

b) Thursday Indications Conference: Each Thursday morning beginning at 8:00AM, all of the scheduled spine cases for the upcoming week are reviewed. This is a small group session that consists of all of the spine attendings along with the spine fellow and on-service residents. The chief complaint along with a clinical history is presented along with supporting radiographic studies. All participants are asked to propose a surgical plan. The indications, possible surgical treatments, potential complications, and current supporting literature are discussed. Residents and fellows are expected to present and discuss the specific cases they will be involved with for the next week.

c) Quarterly Spine Morbidity and Mortality Conference: During the course of the quarter, all of the medical and surgical complications on the spine service are tracked. These are formally presented in a session that is only open to the residency and spine surgery service. During this quality assurance conference, complications, as well as techniques for their prevention, are reviewed.

d) Bimonthly Spine Journal Club: Every other month a journal club session will occur outside of the work place. A classical spine article along with a series of interesting and current articles will be reviewed. These sessions are voluntary sessions, but provide the fellow and residents who attend a relaxed environment to review spine topics and stay up to date on the current body of spine literature.

Spine Meeting Attendance

To encourage the Fellow to transmit his/her knowledge, they will be encouraged to attend one or two major spine meetings during the year. This is to foster overall exposure to the area of spinal surgery and to particularly stimulate the Fellow's research interests.

Also, this serves to develop conference presentation skills. The Fellow is strongly encouraged to consult with the attending faculty and the personnel in the laboratory to facilitate these activities and to develop research protocols early in the year to allow sufficient time to complete these presentations (MK, IC).

Curriculum Components

Each of the required curriculum components is addressed in multiple settings. This assures that the component includes both cognitive as well as psychomotor experiences. See table below.

Relationship of Curriculum Components and Educational Settings

Curriculum Component	Educational Setting					
	Upstate Bone and Joint Center	SUNY Upstate/ University Hospital	Lecture Series	Conferences	Research Center (IHP)	Interdisciplinary Team
Anatomy			X	X	X	X
Physiology			X	X		X
Biomechanics			X	X	X	X
Microbiology			X	X		X
Pathology		X	X	X	X	X
Clinical Disorder of the Spine	X					
Pathogenesis of Disorder	X	X	X	X		
Operative and Non-Operative Treatment	X	X		X		
Intradural Pathology				X	X	
Interdisciplinary Treatment	X	X		X		X

Research Settings

A portion of the education program is devoted to providing the Fellow direct experience in conducting appropriate research. The IHP (Institute for Human Performance) is a world class basic science facility that has played host to a number of groundbreaking projects in the history of spine surgery. Alongside world class basic science researchers, fellows will be provided with the opportunity to receive direct

experience in conducting appropriate research in the laboratory. Fellows will have the opportunity to conduct, evaluate, and report on clinical and basic science research pertaining to the spine. It is expected that the fellow will develop and complete at least one research project at a level equivalent to that required for presentation at a professional meeting and/or peer reviewed publication. Ample assistance through the research staff at the IHP, as well as, the attending staff will be provided.

Available within the research space housed at the IHP is equipment to facilitate a multitude of types of biomechanical research, the investigation of cell cultures, and the effect of various environmental and therapeutic measures related to cell growth and development. The specific equipment available includes appropriate computers, MTS machines, CT scanner, X-ray, laboratory space, and equipment for cell cultures.

It is our goal that during the first one to two months, the spine Fellow is offered the opportunity to develop his/her own research project or joining a project under investigation. The spine Fellow is free of clinical duties and is able to participate in research approximately five to ten hours per week. The Fellow will generally complete one or more clinical and/or basic science projects during the year, resulting in appropriate presentations and publication. An ample amount of clinical data is also available for review. Our facility employs a dedicated research coordinator who facilitates a variety of clinical studies that are ongoing at our institution. These resources and personnel facilitate the design and gathering of information for both prospective and retrospective studies. The spine surgery faculty work directly with the Fellow and with other researchers in the community to identify and provide appropriate linkages to assure the success of the research component. (MK, IC)

Clinical Activities

Educational activities include hands-on direct experiences in the outpatient and surgical settings. These experiences are designed to develop the physician's knowledge of surgical techniques for treating diseases of the spine.

The fellow directs an outpatient spine clinic. Fellows are asked to see their own patients and make decisions in an independent fashion. An attending spine surgeon is available during the clinic hours for direct review patients' clinical presentations and radiographs. The fellow is allowed to formulate and implement a treatment plan for each patient.

These plans may range from diagnostic procedures and/or the implementation of therapeutic procedures including conservative care and surgery. Patients appropriate for operative intervention are taken to the operating room by the fellow and the appropriate attending. During this clinic, fellows also act as a first line in the teaching process for the residents who are seeing patients alongside of them. Residents are expected to present to the fellow. The fellow is expected to provide feedback and teaching to the resident during this process. The supervising attending will be present and available to provide guidance if necessary. The pace of this clinic is much slower than the normal office setting, facilitating the educational process. Fellows will also participate in a fellow's only clinic that occurs on Thursday mornings. During this clinic, the fellows are allowed to independently see patients and make decisions on their treatment. Fellows review their findings and plan with the supervising attending staff.

It is the responsibility of the spine fellow to closely monitor the care of all spinal trauma patients. Trauma patients are initially evaluated in the emergency room by the junior orthopedic residents. Those patients found to have specific spinal injuries are then discussed by the junior residents with the spine fellow and the orthopedic spine attending. An appropriate course of action is then identified and implemented with the spine fellow monitoring the patient's course. The relationship between the orthopedic spine section and the neurosurgery spine section is excellent, allowing the spine fellow access to the expertise of both surgical specialties. The spine fellow functions as a coordinator between the neurosurgical and orthopedic services, directing the care of the injured patient under supervision.

The fellow in spine surgery quickly achieves a level of knowledge in spine problems that exceeds that of the more junior resident staff. The resident staff on the spine service includes one junior resident and a chief resident. They are exposed to a similar spectrum of spinal problems as is the fellow. It is expected that the residents will perform surgery commensurate with their level of training. It is not expected that the spine fellow will perform all spinal procedures at the expense of the resident staff. The fellow serves as a source of information and guidance to the resident staff in their treatment of elective spinal admissions and spinal trauma. The fellow serves as a first line of consultation for many trauma cases and will staff the Spine Clinic at a consulting level under attending supervision. As residents rotate on a quarterly basis through the Spine Service, the spine fellow provides continuity with regard to spine patients.

A surgical procedure may involve the participation of the attending surgeon with the spine fellow and a resident, with a resident alone, or with a spine fellow alone. Further responsibility is given to the spine fellow as his/her expertise increases, allowing him/her to monitor some of the resident's surgery with appropriate attending supervision.

MOONLIGHTING POLICY

In order to comply with both the New York State mandated work regulations as well as the ACGME regulated work restrictions, moonlighting by orthopedic spine surgery fellows is not allowed.

SUPERVISORY LINES OF RESPONSIBILITY FOR CARE OF PATIENTS

The responsibility of the fellow for inpatients, patients cared for in the emergency room, outpatient clinics, operating room and private offices are for direct and comprehensive patient care. Fellows are expected to provide accurate assessment of patients' ailments and provide an appropriate treatment plan. Furthermore, the fellow will be responsible for instructing residents, medical students and hospital personnel in the appropriate management of these patients. The fellow is under the supervision at all times of the attending spine staff, either through direct supervision with the physician physically present or indirectly through verbal communications in which the physician can become immediately available. On each and every patient case, the fellow reports directly to the attending surgeon involved with the respective case. Under no circumstance is the fellow expected to provide care without interaction with the attending staff. For the management of inpatients, daily communication with the attending staff provides the appropriate supervision for management of these patients. In the emergency room setting, patients are managed by resident and fellow staff with direct communication via telephone with the attending staff on call. If the case arises where there is a change in patient status (i.e. floor to ICU; neurological compromise; vascular compromise; escalating poor interaction with patient, staff or consultant; the onset of an at risk procedure; or patient death), the Fellow should call the attending immediately. Should the case warrant further assessment or treatment, the attending staff directly interacts with the patient and directly supervises the Fellow. In outpatient clinics, supervision is provided through direct contact with the fellow while seeing patients. This also applies to the private offices. Lastly, in the operating room, the fellow is under the direct supervision of the attending staff at all times.

PROFESSIONALISM

It is our hope that at the fellowship level, professionalism will have already been a part of the fellow's prior education. However, this competency will be reinforced during the fellowship year. Fellows will reinforce their knowledge of professionalism through their interactions with patients in the attending's private office and in the hospital setting. Fellows will be asked to demonstrate this competency in the fellow's clinic. Systematic evaluation of this competency will occur. Remediation for this competency is available.

EVALUATION

The Fellowship experience is an exceptionally complicated educational program because of the requirements for competency in many medical areas. Likewise, the needs and interests of an individual entering the program can be quite varied. The standards for Advanced Evaluation Programs have defined the basic curricular goals that apply to the Fellowship. Further, there is a need to assist the fellow identify individual goals and objectives based on his/her own skills and interests, strengths and weaknesses, as well as future career plans. The fellowship experience of necessity is an accumulation of many diverse educational experiences and involves many teachers.

PERFORMANCE EVALUATIONS

Each quarter, attendings that have had interactions with the Fellow are asked to evaluate the progress of the Fellow and to provide specific comments on both areas of excellence and areas needing attention. An evaluation form has been developed for this purpose. The Fellow is evaluated in each of the ACGME core competencies (Appendix C).

FORMAL REVIEWS

The program director conducts formal reviews with the fellow. These are conducted quarterly. The purposes of these reviews are to: determine the progress of the fellow in meeting the program goals and objectives; identify any areas needing attention; and to develop specific plans of correction to assure that the fellow meets the goals and objectives of the program. The program director will write or dictate a summary note for the review meeting. At the conclusion of the fellowship, the program director completes a final review of the fellow. The program director meets with the fellow to discuss this evaluation and to request feedback on the fellow's experience in the program.

GENERAL DISCUSSION QUESTIONS

The following questions are suggested as discussion topics appropriate for each review:

1. What progress has been made toward the professional and personal goals?
2. How does the information gathered to date impact upon the Fellow's goals?
3. What problems has the Fellow encountered?
4. What are some of the concerns (of the Fellow and of the faculty members)?
5. In what ways can faculty members help set or reach goals which are not yet attained?

OTHER UPSTATE GME POLICIES

The Upstate Medical University Department of Orthopedics complies with the policies established by the Upstate Medical University GME office. A listing of the GME policies is available in the Resident Handbook and can be accessed on line at:

<http://www.upstate.edu/gme>

ACGME PROGRAM REQUIREMENTS

The ACGME program requirements for training in Orthopedic Surgery of the Spine can be found on the ACGME web site at:

https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/267_OrthopaedicSurgerySpine_2021.pdf?ver=2021-06-23-114449-667

APPENDIX A

Topics covered in the Spine Core Lecture Series and Supplemental Sessions:

Basic Science:

- Cervical and Lumbar Anatomy and Biomechanics
- Surgical Approaches to the Cervical Spine (Anatomy Lab Session)
- Surgical Approaches to the Lumbar Spine (Anatomy Lab Session)
- Disc Anatomy and Physiology
- Spinal Cord Anatomy, Spinal Cord Syndromes
- EMG and NCV in the Evaluation of Spinal Cord Disorders and Spinal Cord Injury

Evaluation and Non-Surgical Disorders of the Spine:

- Physical Examination of the Cervical and Lumbar Spine
- Radiographic Evaluations of the Spine
- Treatment of Acute L-5 Strain and Cervical Whiplash.
- Bracing, TNS, Traction, Outcomes Assessment of the Spine

Disorders of the Spine:

- Degenerative Disc Disease Cervical Spine
- Degenerative Disc Disease Lumbar Spine
- Managing Acute HNP Cauda Equina Syndrome
- Spinal Stenosis Cervical and Lumbar
- Spondylolisthesis
- Spondylolysis
- Osteoporosis/Kyphoplasty
- Sagittal Malalignment -Kyphosis, Flat Back Syndrome
- Inflammatory Conditions- RA, Ankylosing, Spondylolisthesis, DBH
- Adult Scoliosis
- Pediatric Scoliosis
- Kyphosis
- Spinal Infections
- Spinal Tumors
- Failed Back and Pain Clinics
- Trauma
- Spinal Cord Injury (Halo, Gardner Wells Tongs)
- Rehab Management

Surgical Management of the Spine:

- Instrumentation - Harrington Rod to Pedicle Screws
- Fusion to the Sacrum

- TDA
- Fusion of the Spine -Adjuvants and Basic Principles

APPENDIX B:

Monday Spine Core Curriculum Conference Tentative Schedule and Topics*

- Cervical and Lumbar Physical Exam
- Spine Imaging
- Congenital Scoliosis
- Adolescent Idiopathic Scoliosis Part 1
- Adolescent Idiopathic Scoliosis Part 2
- Adult Lumbar Scoliosis
- Myelomeningocele & Neuromuscular Scoliosis
- Pediatric Spondylolysis & Spondylolisthesis
- Treatment of Cervical Disc Herniations
- Spondylolisthesis
- Quiz Review for the Quarter
- Indications Conference
- C-Spine Fractures
- T/L Spine Fractures
- Cervical Myelopathy
- Rheumatoid Arthritis of the Cervical Spine
- OITE Review
- Spinal Cord Injury Management
- Thoracic Kyphosis
- Degenerative Disc Disease and Back Pain
- Quiz Review for the Quarter
- Indications Conference
- Lumbar Stenosis
- Lumbar Disc Herniation
- Epidurals & Selective Nerve Root Blocks in Treatment of Lumbar Radiculitis
- Epidural Hematoma and Cauda Equina Syndrome
- The Failed Back
- The Aging Spine
- Ankylosis Spondylitis (AIS) and Diffuse Idiopathic Skeletal Hyperostosis (DISH)
- Spinal Tumors
- Spinal Osteomyelitis
- Quiz Review for the Quarter
- Indications Conference
- Iatrogenic Neurological Injury
- Sports Related Spinal Injury
- Outcome Tools in Adult Pediatric Spine Surgery
- Pseudoarthrosis of the Spine
- Neuromonitoring
- Spinal Biomechanics
- Sagittal Imbalance
- Motion Preservation and Disc Replacement

- Quiz Review for the Quarter

*subject to change

APPENDIX C

ACGME GENERAL CORE COMPETENCIES

The program must integrate the following ACGME competencies into the curriculum:

PATIENT CARE AND PROCEDURAL SKILLS:

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows:

- must demonstrate competence in the clinical assessment of the neurologic function of the spinal cord and nerve root; and,
- must demonstrate competence in:
 - appropriate use of diagnostic laboratory tests including electrophysiologic monitoring;
 - interpreting imaging studies of the spine;
 - clinical assessment and developing treatment plans to manage patients with traumatic, congenital, developmental, infectious, neoplastic, metabolic, degenerative, and inflammatory/rheumatologic disorders of the spine, as well as those with spinal deformity;
 - recognizing and managing of complications of treatment (including appropriate consultations with subspecialists);
 - assessing the effectiveness of diagnostic and treatment methods;
 - clinical assessment of disorders of bone quality, oncologic pathology, and infectious diseases in spinal bone, discs, and neurologic spaces; and,
 - clinical assessment and developing treatment plans for sources of pain in the regions of the spine.

Fellows must be able to perform all medical, diagnostic, and surgical procedures considered essential for the area of practice.

- Fellows must demonstrate competence in performing operative procedures for the management of patients with orthopedic disorders of the spine.
 - This must include:
 - fractures and dislocations (cervical, thoracic and lumbar);
 - anterior arthrodesis (cervical, thoracic and lumbar);
 - posterior arthrodesis (cervical, thoracic and lumbar);
 - posterior instrumentation;
 - anterior instrumentation; and
 - laminectomy (cervical, thoracic and lumbar);
 - This should include:
 - application of intervertebral devices or bone graft;
 - laminoplasty;
 - transpedicular decompression; and,
 - vertebral corpectomy.

MEDICAL KNOWLEDGE:

Fellows 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. Fellows:

- must demonstrate competence in their knowledge of:
 - major spine disorders and conditions, including traumatic, congenital, developmental, infectious, neoplastic, metabolic, degenerative, and inflammatory/rheumatologic disorders of the spine, as well as other spinal deformities;
 - the indications, risks, and limitations of the commonly performed procedures in orthopaedic surgery of the spine;
 - the basic sciences and measurement techniques related to the musculoskeletal system;
 - the natural history of spinal degeneration, spinal deformity, and changes in bone density; and,
 - the application of research methods, including the ability to critically analyze research reports and to design and implement clinical or basic research in the field of orthopaedic surgery of the spine.

PRACTICE-BASED LEARNING AND IMPROVEMENT:

Fellows 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.

INTERPERSONAL AND COMMUNICATION SKILLS:

Fellows must demonstrate interpersonal and communication skills that result in effective exchange of information and collaboration with patients, their families, and health professionals.

PROFESSIONALISM:

Fellows must demonstrate a commitment to professionalism and an adherence to ethical principles.

SYSTEMS-BASED PRACTICE:

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the social determinants of health, as well as the ability to call effectively on other resources to provide optimal health care.