



The University of Pennsylvania Orthopaedic Residency Curriculum



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The Department of Orthopaedic Surgery at the University of Pennsylvania, the first such department in the nation, has a proud and long-standing tradition of rigorous training and education in orthopaedics. This tradition has produced many thought leaders in our field and provides the foundation for each academic year. Forward momentum is a principal tenet of this tradition, and the department seeks to continually improve the educational experience and offer innovative and effective programs. This year has been no different with the addition of several new aspects to our didactic curriculum.

Perhaps the most profound change is in the morning conference schedule; this has taken several years and required the cooperation and coordination of the entire faculty and resident compliment. In prior years, subspecialty morning conferences occurred simultaneously on any given morning and were often distributed throughout the five hospitals through which our residents rotate. Residents and faculty alike observed that due to variation in schedule order and a predilection to spend a large amount of time on topics of particular interest to those giving conferences, breadth of education sometimes suffered. Similarly, when schedule conflicts arose, the number of residents benefiting from the time of the subspecialists could be limited. Lastly, the topics of conferences were not always given with adequate notice for the residents to prepare and optimize their participation. The revised morning conference structure addresses these concerns. We designed a curriculum that integrates one lecture from most sub-specialties every other week. This decreases the hours of lecture given by the attendings, while increasing the number of residents present. Specifically, on Mondays we concentrate on adult reconstruction and trauma, on Tuesdays the focus is on spine and foot and ankle, on Wednesdays we examine sports injuries and hand, Thursday is dedicated to grand rounds and on Fridays we discuss tumor and shoulder and elbow with the addition of chiefs' conference. Chiefs' conferences occur intermittently and allow the chief class to cover practical information associated with planning for surgical cases. In order to structure the morning conferences, we use Miller's Review of Orthopaedics as an outline, thus guaranteeing adequate breadth while providing a primer for each conference. The calendar, with associated recommended readings, was released at the start of this academic year. Since that original calendar was set, early in the year, the conference has taken organic shape with each subdivision figuring out how the conference works best for them.

Along with many other orthopaedic departments across the country, we have also started to integrate the Orthobullets online exams into our curriculum. This allows residents to get an idea of their strengths and weaknesses in terms of their

individual knowledge base so that they can best direct their study efforts. Orthobullets has also provided our residents with an expanded question bank, allowing them to optimally prepare for the annual in-service examination and by extension the board examination. We have prioritized this aspect of the curriculum, as it provides the carefully monitored performance data we need to improve our educational program; previously we lacked such feedback. This element should improve our precision in making future modifications to the curriculum.

In developing the current revised curriculum, we looked at the knowledge base as a complement to our surgical skills. With an eye to increasing these skills, we have continued to make excellent use of the University of Pennsylvania Orthopaedic Human Tissue Lab (HTL). This year we continued to use the Sawbones modules to provide our residents with exposure to the use of hardware in a simulated fashion. We also added guided dissections for the residents to increase our hands-on time with cadaveric specimens. We now include guided dissections of the hand, elbow and forearm, shoulder, foot and ankle, leg with a focus on compartment releases, hip and pelvis as well as spine; covering all areas of the body allows our residents the opportunity to dissect free of the concerns that exist during surgery and prepares us to take better advantage of surgical opportunities as they arise. It is important to acknowledge our former chiefs Ryan M. Taylor MD, John G. Horneff III MD and Christos D. Photopoulos MD, who worked hard to secure the protected time necessary for these high-quality education sessions in the HTL. Further the residents collectively appreciate the, often herculean, efforts of Lorianne Kish the director of the HTL who works hard to ensure lab and resource availability.

The quality improvement curriculum is a highly innovative addition to our program this year; it is covered more extensively in a separate piece in this publication of UPOJ, and I would encourage those interested to take a look at that article.

As we look forward to what these many changes will mean for the enhancement of our residency experience, we also look back to recent and equally innovative contributions to the curriculum, asking ourselves how we can best integrate some of these disparate parts. The iTunes U curriculum previously led by Mara Schenker MD is a wonderful resource, but it has not yet been incorporated into the current curriculum. Several approaches are being considered as to how best to reconcile this. One thought is that after the residents have participated in several full cycles of the morning conference curriculum, the readings from Miller's Orthopaedic Review will likely need to be expanded; the iTunes U readings could provide just such enrichment, creating a healthy marriage between the morning conference curriculum and the iTunes U curriculum.

Beyond this, we have begun to explore the use of video to compliment the written steps of the attendings' surgical methods. This addition is still a work-in-progress; issues with quality and clarity have hindered a full-scale roll out of this aspect of our curriculum. Ultimately, we envision a rotation folder created specifically for each service that will contain all of the details pertinent to the work done on that service. Such a folder would include call responsibilities, preferences

regarding patient care, videos and written steps describing common procedures, and iTunes U material and other background information relevant to the common conditions seen while on service. Such integration is a monumental undertaking, but as the Department of Orthopaedic Surgery at the University of Pennsylvania has continued to produce the highest quality residents, we must strive to continue to push the edge of excellence in education.