Development of Orthopaedic Training Modules

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Motivation

In the present state of orthopaedic education, most of the basic manual skills required by orthopaedic residents are taught to them in the clinic or during surgery. There is a need to develop a curriculum to teach and track performance of the manual skills required of residents outside of the operating room.

While many complex surgical simulators are on the market, the need for a set basic surgical skill assessments has been identified.

Objective

It is the goal of this project to improve and track basic manual skills of orthopaedic residents.

This will be accomplished by developing a curriculum of basic manual skills assessments that can be administered quickly and simply.

Teaching in the form didactic content, hands on training with tools that are used during surgery as well as feedback and performance tracking are the main components of the curriculum.

Curriculum

- A library of training curriculum was created based on surgeon recommendations of necessary manual skills
- The 11 modules relate to varied and unique tasks required of them during surgery
- Sawbone™ blocks and surgical tools including drills, saws, guides, probes and measurement devices are provided in a simple setup

1. Preparation

- Reading material and didactic content will be provided before each assessment
- Attending surgeons are encouraged to provide addition information and goals for the residents in each training module

2. Hands-on Assessment

- Hands on assessment using common surgical tools including drills, saws, guides, measurement tools and reamers
- Training can be administered by a test administer, attending surgeon or fellow resident
- The training is completed in several phases. An initial test with feedback is followed by a repeat test in order to evaluate improvement

3. Performance Reports

- A simple scoring system is used to rate the performance of each skill assessment
- The performance during the training is saved in a database for future reference and in order to determine areas that need improvement

Roles

- Orthopaedic Residents- Follow curriculum and are evaluated on their performance and improvement
- Attending Surgeons- Oversee testing and provide feedback for residents.
- Test Administrators- Setup training modules, score and record performance

![Figure 1. Group of orthopaedic residents, attending surgeons and skills lab administrators during surgical training module](image1)

![Figure 2. Models of surgical skills module setup (Saw Trajectory and Drill Angle)](image2)

![Figure 3. Resident during performance assessment and report](image3)

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