Integration of Ultrasound Into the Core Curriculum
James Cotton, UCSF SOM Class of 2016; James.Cotton@ucsf.edu;
Kevin Kane, UCSF SOM Class of 2016; Kevin.Kane@ucsf.edu

Advisors:
Emily Webb, MD; (primary) Emily.Webb@ucsf.edu;
Kimberly Topp, PhD; ToppK@ptrehab.ucsf.edu;
Nathan Teismann, MD; Nathan.Teismann@ucsf.edu;
University of California, San Francisco

Purpose: The goal of this project was two-fold; first, to increase the exposure that first-year medical student get to point-of-care ultrasound (POC US), which will help lay a foundation for subsequent years of training where it is used in a wide range of specialties. Our second goal was to introduce POC US in a way that it would also teach and reinforce basic abdominal anatomy.

Background: The role of POC US is continually expanding and it is now used in most specialties. Consequently, many medical schools have begun to incorporate ultrasound into the curriculum and it has been received very favorably. Prior to our project, ultrasound training for UCSF medical students was only offered as a component of a radiology elective taken during the fourth year of medical school. However, not all students take this elective and this is offered only after clinical rotations. Thus, the opportunity to provide a foundation in POC US prior to exposure in a clinical scenario is of great value. Concurrently, this project serves as a complementary way for students to learn human anatomy.

Methods: After reviewing the literature on ultrasound curriculum and discussing with our advisors, we concluded that a web-based module followed by a hands-on, faculty-led training to be conducted during an Anatomy Lab “break-out” session would be the most practical, effective means of implementation. We also decided that introducing ultrasound principles and illustrating these with the FAST exam would be an effective way to introduce the anatomy found in the four quadrants of the abdomen and enable students to connect the material to the Mr. Danovic lecture series.

Using materials from our advisors and effective resources we located online, we constructed a web module using Articulate, which includes audio narration, self-assessment questions, several videos, and images. After coordinating between the departments of Anatomy and Radiology we established an Anatomy Lab “break-out” session where each first-year medical student will receive a short didactic instruction and then have an opportunity to scan each other with faculty guidance from the Department of Radiology.

In addition to the required curriculum we also created various optional POC US activates, including 1) a clinical experience with ultrasound in the Emergency Department, 2) an additional, hour-long practice session to be facilitated by faculty members and 3) “open lab” time for approved students.

Evaluation Plan: Our advisors have helped us to establish CHR-approved qualitative surveys that will be completed by all students prior to the web module and following the required anatomy “break-out” session, respectively. These are 1-5 scale, self-reported satisfaction and comfort with ultrasound-based surveys. The students are also required to complete an online graded quiz after they complete the web module. We also hope to roll out a skills assessment and survey for the students who decide to participate in the optional ultrasound course content.
**Dissemination:** This is being implemented to the Class of 2017 during the Anatomy & Physiology component of Prologue. The web module, online quiz, optional activity sign-up and all other ultrasound resources are located on a new CLE/Moodle 2 page within the iRocket site.

**Reflective Critique:**
We had bi-weekly meetings with our advisors where we reviewed progress and discussed new goals. We also gathered feedback from the Curriculum Ambassador consultation sessions and informal feedback from other classmates.