Ultrasound (US) is prevalent and clinically useful, however the majority of American medical schools lack a formal curriculum. “[173] medical schools were contacted, and 48 (27.7%) reported having a formal USMED curriculum.”


LOCAL PROBLEM: The regional medical school lacked a basic US curriculum, which impacted medical students when rotating through the study’s tertiary care center.

GOAL: Implement a novel basic US curriculum based upon the following 2014 guidelines:

SETTING: Tripler Army Medical Center, Honolulu, HI, a tertiary military hospital, serving 260,000 soldiers, family members and retirees.

POPULATION: 83 MS3 medical students from the Hawaii state medical school on Oahu, as taught over two iterations in 2020 and 2021.

PLAN:
1. Create a quality improvement (QI) project of teaching a basic US curriculum, as created and taught by residents.
2. Utilize pre and post-tests to assess learning.

RESULTS:
- 83 students completed pre-tests.
- 61 students completed both pre and post-tests.
- Average score increased 41.3% to 82.5%.
- With a max score of 12, pre-test no student scored 10-12 points, however post-test 41 students (67%) scored this level.
- Pre-test questions with worse performance included which US modality was most sensitive to vascular flow and which sonographic frequencies are utilized for medical imaging.

Limitations: The following limitations occurred as a result of offering this optional curriculum without imposing additional burdens on student's existing schedules and required classwork:
- Same questions utilized for pre-test and post-test.
- Only 12 questions utilized, which limits robustness of results.

Data below represents the 61 pre and post matched cohort. All results are statistically significant with p-values <0.05, except for the single entry marked with an asterisk.

CONCLUSION:
This project demonstrates the efficacy of a basic hands-on US curriculum as implemented by residents in a mixed format of both online lecture and small group hands-on sessions. The methods and results are relevant in a recent global environment where distance learning has become more common.