

Formalizing POCUS Education for Internal Medicine Residents with a Hypothesis Driven Longitudinal Curriculum

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Background: Point-of-care ultrasound (POCUS) has emerged as a powerful tool for improving diagnostic evaluation of common medical problems. Numerous professional organizations have established guidelines for POCUS training and it is expected to be included in upcoming ACGME milestones for IM residents. Thus, POCUS training has become a mandatory component of a successful IM residency program (IMRP).

Educational Objective: To create a sustainable POCUS curriculum for IM residents that will foster the knowledge and skills necessary to safely incorporate POCUS into their clinical practice.

Program Development: A literature review identified the most important IM POCUS competencies. These were synthesized into four clinical scenarios. Existing residency and faculty accredited POCUS programs were reviewed for best practices in POCUS education to determine the components of our curricula. POCUS faculty were identified at each clinical site and met on a regular basis to formulate learning goals and objectives as well as strategies to deliver content. A proposal was prepared for the IMRP and Department of Medicine to obtain support for resident availability, paid faculty time, and equipment support.

Results: A curriculum was developed for PGY-1 IM residents focusing on four common clinical situations in which POCUS can augment the traditional physical exam: 1) identifying pathologic fluid collections, 2) evaluating a patient with dyspnea, 3) evaluating a patient for volume overload, and 4) evaluating a patient with undifferentiated shock. Three curricular components were identified as important for a successful program: 1) small group didactics with mentored scanning 2) portfolio creation and review and 3) competency assessment. A year-long curriculum was designed consisting of 5 faculty-led small group sessions for each learner, self-guided creation of a portfolio, and two competency assessments. In order to execute the curriculum as designed, 203 faculty half days, \$52,000 for equipment/software, \$14,000 recurring annual costs, and 100-200 hours of administrative time would be required. In formulating our funding proposal, we focused our proposal on issues that would resonate with department leadership including: 1) required competency assessment to ensure patient safety concerns, 2) overcoming barriers related to hospital clinical privileges, and 3) bolstering our competitiveness in residency recruitment and fellowship placement. The curriculum was met with support and funding for AY 21-22 but delayed due to the COVID-19 pandemic given funding and resident availability are uncertain.

Discussion: The development of this curriculum highlights importance of stakeholder engagement. Building an evidenced-based, competency-centered curriculum across multiple sites is labor and resource-intensive. Nevertheless, acquiring those resources is possible when the educational goals of the curriculum intentionally align with those of key financial stakeholders.