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Curriculum conundrum: designing a longitudinal point-of-care ultrasound curriculum for a family medicine residency

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Keywords

Clinical teaching, Skill-building

Abstract

Point-of-care ultrasound (POCUS) has been shown to improve quality outcome measures and diagnostic timelines by answering focused clinical questions. POCUS is especially useful in settings with limited advanced imaging and specialists. There is a growing appetite for POCUS training in family medicine residency programs nationwide, but a limited number of programs have a structured curriculum, along with a lack of skilled faculty trainers in the primary care setting. The goal is to develop an effective, structured longitudinal curriculum, resulting in competent use of POCUS in clinical practice to expedite medical care.

Objectives: The objectives of the POCUS curriculum include understanding the indications, benefits, and limitations of bedside ultrasonography to answer focused clinical questions. The major organ systems covered include pulmonary, cardiac, abdominal, soft tissue, musculoskeletal, genitourinary, ocular, vasculature/DVT, procedural guidance, and obstetrics/gynecology. The resident will understand the physics and demonstrate the basic operations of the ultrasound machine, in order to acquire and interpret ultrasound images, and in turn apply clinical reasoning and affect medical decisions. The resident will communicate the indications, risks, benefits of POCUS to the patient and treatment team, as well as accurately document the results in the medical record.

Background: POCUS as a diagnostic and therapeutic modality is an accurate, noninvasive, portable tool that can augment and improve clinical outcomes. POCUS education in family medicine training is in its early stages of development. The American Academy of Family Physicians has developed recommended guidelines for a POCUS curriculum, which should be tailored to the needs of an individual program.

Learning Strategies: The curriculum will include both focused workshops and longitudinal experiences. Pre-workshop materials include POCUS textbook chapters, on-line modules, and articles. Each session begins with a short didactic presentation, followed by hands-on bedside scanning on patient models or fellow residents with facilitators providing real-time feedback. Following this, an image review session will focus on interpreting pathology through case studies and examples. Residents may solidify their skills with a POCUS elective wherein educational ultrasounds are facilitated by a trained faculty. The resident will utilize POCUS in the clinical setting to their own patients under the supervision of trained faculty. Lastly, the resident will be assessed for competence based on established criteria of precepted scans.

Impact: The impact of the POCUS curriculum will narrow differential diagnoses, augment medical decision-making, and improve clinical outcome. Bringing this tool to the bedside will also enhance the patient-physician experience.

Learning Objectives

1. Describe the benefits of developing a POCUS curriculum for family medicine residents
2. List the major organ systems that can be evaluated using POCUS
3. Describe the learning strategies utilized in a POCUS curriculum

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