2026, Volume 58, Issue 0, 1-5, e-ISSN 1938-3800

Family Medicine

SPECIAL ARTICLE

New England Point-of-Care Ultrasound Residency Education: Comparing and Contrasting Approaches

Rebecca Gwaltney, MD, MPH[a]; Erin Cathcart, MD, MPH[a]; Kyle Flattery, MD[b]; Daria Szkwarko, DO, MPH[b]; Nathan Macedo, MD, MPH[c]; Elizabeth Lorick, MD[d]

AUTHOR AFFILIATIONS:

[a]Department of Family Medicine and Community Health, Worcester Family Medicine Residency, UMass Chan Medical School, Worcester, MA

[b]Department of Family Medicine, Warren Alpert Medical School, Brown University, Providence RI

[c]Department of Family Medicine, Greenfield Family Medicine Residency, UMass Chan Medical School–Baystate Health, Greenfield, MA

[d]Department of Family Medicine, Family Medicine Residency, School of Medicine, University of Connecticut, Hartford, CT

CORRESPONDING AUTHOR:

Rebecca Gwaltney, Department of Family Medicine and Community Health, Worcester Family Medicine Residency, UMass Chan Medical School, Worcester, MA, Rebecca.Gwaltney@umassmemorial.org

HOW TO CITE: Gwaltney R, Cathcart E, Flattery K, et al. New England Point-of-Care Ultrasound Residency Education: Comparing and Contrasting Approaches. *Fam Med.* 2026;58(0):1-5.
doi: 10.22454/FamMed.2026.0041

FIRST PUBLISHED: September 10, 2026

KEYWORDS: curriculum development, point-of-care ultrasound, residency education

© Society of Teachers of Family Medicine

INTRODUCTION

Point-of-care ultrasound (POCUS) in family medicine has the ability to increase speed to diagnosis and improve patient care.[1] Modern devices are increasing access to testing, especially in resource-limited settings.[1] The Accreditation Council for Graduate Medical Education now requires POCUS training in family medicine residencies; however, the ability to build curricula and integrate POCUS into patient care is challenging.[2,3] Prior studies have cited lack of resources—information technology (IT), equipment, finances, and faculty training—as reasons for the slow integration of this valuable clinical tool.[3,4]

In 2025, a group of POCUS champions and their department chairs in New England met to brainstorm ways to support one another moving forward. The meeting included POCUS faculty from six institutions; each participant served as facilitator for structured discussions about the following topics: resources, residency curriculum, and goal setting. We discovered that we shared similar challenges but each created novel approaches to solutions, depending on the local needs and existing strengths of our departments. We aim to highlight the successful strategies of four of our residency POCUS curricula and to discuss the similarities and differences of our approaches.

SUCCESSFUL STRATEGIES

Worcester Family Medicine, UMass Chan Medical School, Worcester, MA

UMass Worcester Family Medicine Residency is a 3-year program with 40 current residents. In 2022, the department chair made a strong investment in POCUS; she appointed a departmental POCUS director who completed the inaugural Society of Teachers of Family Medicine (STFM) POCUS Educator Certificate Program with an initial 0.05 full-time equivalent (FTE) administrative offset. Further investment in 2023 expanded the role to 0.15 FTE and added a new position of POCUS education director with an additional 0.15 FTE. From 2022 to 2023, a needs assessment was completed; the majority of the 43 respondents practiced primary care and had no formal POCUS training. All respondents reported wanting more POCUS training, though no appreciable trend existed toward a specific topic in POCUS. This data were utilized to focus investments in both a resident curriculum and faculty development series. Together with family medicine department monetary commitments, we obtained an internal UMass Idea Fund grant to offset the cost of handheld POCUS devices (Philips Lumify) for each residency site.

Over the 2023 to 2025 academic years, we developed and implemented for the residency a POCUS curriculum, which is both longitudinal and integrated into all clinical settings. Using pre- and postassessments, resident and faculty evaluations, and procedure tracking, this curriculum has been found to increase residents' knowledge, confidence, and integration of POCUS use across clinical settings. For example, residents reported an increase in confidence, from an average of 2.5 to 3.7 on a 5-point Likert scale, in their ability to use the cardinal movements of ultrasound to center an image. The curriculum features a variety of components, including the following:

- **Didactic workshops**. Workshops are during protected time, based on prior American Academy of Family Physicians curriculum guidelines and topics of graduating complexity.

- **Elective rotations**. Structured electives combine independent learning and resident directed scholarship, such as local presentations, including grand rounds and journal clubs.
- **Independent learning**. Independent modules are assigned to complete during specific rotations.
- **Handheld devices**. These were available across residency sites.

Simultaneous efforts are underway to expand residency faculty skills, including a faculty development series adapted from the previously developed resident workshops. Sessions are offered in a variety of settings, including faculty meetings, retreats, annual grand rounds, and periodic evening workshops. These sessions include both didactic presentations and hands-on scanning and are open to all family medicine faculty. Residency owned handheld devices are used and participants practice on each other as patient models. Family medicine championed the creation of an interdisciplinary workshop, through the medical school simulation center, for faculty from all specialties. POCUS leadership also led efforts to establish a departmental credentialing pathway, which launched in 2025, for faculty planning to formally incorporate POCUS into their practice.

Brown Family Medicine, the Warren Alpert Medical School, Pawtucket, RI

Brown Family Medicine is a 3-year residency program with 48 current residents. In 2016, a group of trailblazing faculty and residents attended the STFM POCUS Workshop and brought this education back to Rhode Island. Since 2017, Brown Family Medicine has hosted approximately five POCUS didactic sessions per year for residents and faculty alike, running for 2 hours at a time. While these sessions are led by faculty members who consider their POCUS skills to be strong in particular organ systems, these same faculty members often switch into student roles for POCUS subjects they have less experience with. Ultrasound equipment was purchased through various educational funding programs, including Health Resources and Services Administration (HRSA) grants. Faculty members have built on their POCUS skill sets at national, regional, and local conference workshops, as well as third-party virtual POCUS certificate programs. Clinical integration within the residency clinic has proven to be more challenging due to the additional needs for documentation and timely quality assessment when assessing patients presenting with real pathologies.

After hiring a POCUS fellowship-trained family physician with administrative time (0.2 FTE) for designing a clinical integration model, breakthroughs have occurred in preparing residents to utilize POCUS—namely, educational ultrasounds are supported for patients in the outpatient setting. An example of an educational ultrasound would be a patient with intermittent right upper quadrant pain who has an order to receive a comprehensive ultrasound and who is agreeable to allowing a point-of-care study to help primary care physicians learn to identify gallstones at the bedside. Examples like this one allow residents to scan not only the normal anatomy that they observe in each other, but also to scan for pathologies during a clinical encounter. To allow for quality assessment of these ultrasound images, an affordable subscription to a third-party image storage website was utilized to organize these studies. A billing system was designed by the hospital system's IT department to pair Current Procedural Terminology codes with the signed scan, after quality assessment by credentialed faculty. Reimbursement for clinically indicated POCUS scans will begin in 2026.

In addition to five didactic sessions each year, as of 2025, postgraduate year-1s (PGY-1s) have been assigned 32 hours of POCUS instruction during their Community Medicine month. These instructional hours include scanning their peers to practice identifying normal anatomy, educational POCUS scans in the outpatient and inpatient settings, slideshow didactic sessions, and video review for past submitted scans identifying pathology. PGY-2s and PGY-3s have been encouraged to join on their elective months, and many have taken advantage of this opportunity.

Greenfield Family Medicine, UMass Chan–Baystate, Greenfield, MA

As a newer residency program, the Greenfield Family Medicine Residency at UMass Chan Medical School and Baystate Health is in its fifth year of training and now supports 14 residents across three classes. Start-up grant funding from HRSA for a new rural residency enabled the purchase of two GE Healthcare Vscan Air handheld probes and two iPads, which were configured by our IT department into a secure mobile cart with a flexible arm and larger screen for use in outpatient exam and procedure rooms similar to the ones used for video interpreters. This early investment demonstrated that acquiring equipment was only the first step. Limited faculty experience initially constrained the ability to use ultrasound in a true point-of-care workflow.

To address this gap, several faculty attended POCUS workshops at regional and national conferences and prioritized further development among the program's proceduralist faculty. Although our residency is not yet billing for ultrasound-enhanced services, our initial strategy deliberately focused on ultrasound applications commonly incorporated into family medicine outpatient practice—such as ultrasound-guided joint injections and intrauterine device placement, soft-tissue imaging for abscess or foreign-body identification, and abdominal aortic aneurysm.

Five faculty partnered with the Global Ultrasound Institute (GUSI) to complete a 2-day workshop in the fall of 2025, which enabled the program's proceduralist faculty to grow their ultrasound-guided procedure skills. This training substantially increased resident exposure to POCUS while continuing to improve faculty confidence and competence in scanning.

The program's next challenge is developing a practical workflow for storing and sharing ultrasound images for educational review. The solution developed by IT understandably focused on clinical use cases, emphasizing secure storage of studies that might contain protected health information, and integration with the electronic medical record. As a result, the iPads were configured to save images securely to the same universal viewer used by our radiology department. While this infrastructure ultimately positions the program well for future clinical documentation and billing of POCUS studies, it initially exceeded our immediate educational needs and remains somewhat cumbersome for quickly sharing nonclinical scans.

Additionally, two of our faculty are also now part of a yearlong GUSI fellowship to further deepen their expertise. The fellowship uses live virtual scanning sessions with mentors who can remotely connect to the GE Healthcare Vscan Air and observe image acquisition in real time. However, this functionality requires a device capable of maintaining both a Wi-Fi connection to the probe and a cellular Internet connection simultaneously. Standard Wi-Fi–only iPads do not support this capability. As a result, the program is now exploring transitioning to tablets with cellular connectivity to more seamlessly integrate this type of teaching and precepting into future POCUS training with our residents.

Next steps are to formalize the POCUS curriculum by introducing faculty-led training workshops, incorporating asynchronous scan-review, and expanding quality assurance pathways for image review for both faculty and residents.

University of Connecticut (UConn) Family Medicine, School of Medicine, Hartford, CT

The UConn Family Medicine Residency is a 3-year program with 21 residents. Initial implementation efforts focused on securing equipment through Graduate Medical Education funding, resulting in one GE cart-based ultrasound for our associated sports medicine fellowship and, in 2022, five handheld Butterfly devices paired with tablets and portable stands in the clinic. While this investment has facilitated resident exposure and skills practice, ultrasound use is limited to nonbillable educational purposes only. Residents also have access to cart-based ultrasound machines during inpatient rotations, and handheld devices may be signed out for independent practice.

Attempts to integrate POCUS were constrained by limited faculty experience and competing clinical and educational demands. In 2023, four faculty completed a half-day GUSI course at Family Medicine Education Consortium. One faculty member, supported by their department, was accepted into the inaugural 2024–2025 cohort of the STFM POCUS Educator Certificate Program and completed this intensive, yearlong faculty development pathway.

From a resident curriculum standpoint, interns participate in a half-day POCUS introduction at the start of the academic year. This session involves a didactic component covering foundational ultrasound concepts (probe handling, terminology, image orientation, probe selection, and common artifacts) and hands-on lung ultrasound to build core scanning skills. The goal is to establish a baseline skill set that prepares interns to engage with ultrasound during subsequent rotations, particularly intensive care, emergency medicine, and obstetrics rotations.

A key component of sustaining and expanding this curriculum has been regional faculty development through the Connecticut Learning Enterprise and Development Series, a statewide American Board of Family Medicine Residency Learning Network, sponsored by UConn. The network brings together Connecticut family medicine residency programs for shared faculty development through a series of 4 hour workshops. POCUS-focused programming, recognized as a priority through a preliminary statewide needs assessment, remains ongoing and is designed to support collaborative training, build faculty confidence, and share curricular resources. Workshops incorporate organ-based lectures, hands-on scanning portions with low learner-to-facilitator ratios (typically 3:1), and interactive pass-the-pointer sessions, emphasizing a train-the-trainer model to encourage sustainable teaching capacity statewide.

Image storage and review can be done through Butterfly middleware; however, a formalized quality assurance workflow is not yet consistently utilized. This delay is likely because most scans are performed during teaching sessions or at the bedside with real-time faculty supervision, where immediate feedback has been prioritized over image archiving. Additional barriers include perceived limited time with clinical workflows, uncertainty around documentation practices for educational scans, and lack of incentive for image storage when studies are not used for billing.

Future priorities include integrating ultrasound into procedure clinics and inpatient rounds, expanding simulation-based applications using Sonosim LiveScan, developing a robust quality assurance infrastructure as integration into clinical workflow expands, and securing ultrasound equipment to support clinical use and billing pathways.

DISCUSSION

Our regional collaboration highlights that our programs all face similar barriers to integrating POCUS into residency education, such as funding, access to devices, protected faculty time, and baseline faculty POCUS skills. Our collaboration identified the following similarities and differences in our approaches.

Great Minds Think Alike: Things We Did the Same

- **Formal didactics**. While the specific topics, frequency, and duration of the curricula differed, all utilized structured didactic sessions, including both lecture-style presentations and hands-on skills sessions. Several faculty chose to start with the topics with which

they were most confident—the teach-what-you-know approach—and then broadened from there. Many of our faculty had foundational skills in either obstetrics or sports medicine ultrasound, and so leveraged those as the starting point. **Pearl:** Dedicated core didactic time, including both lecture and hands-on practice, is necessary for success.

- **Initial investment in POCUS faculty skill set**. All programs chose to utilize third-party resources to develop POCUS faculty knowledge and skills. A wide variety of options exist: the STFM POCUS Certificate program, GUSI, SonoSim, and Butterfly Network, to name a few. Regardless of specific third-party organization, all our POCUS faculty benefited from additional training to solidify POCUS skills. **Pearl:** Investment in POCUS champions' formal training is crucial.
- **Ongoing investment in POCUS faculty**. A consistent predictor of the speed of POCUS expansion was departmental or institutional buy-in. The degree of investment into POCUS faculty varied and was predictive of the capacity for teaching and systems building. For example, programs that invested in POCUS faculty administrative time leveraged that resource to offer more resident and faculty teaching, scholarship, and systems building. **Pearl:** Ongoing departmental investment into POCUS faculty protected time is essential to POCUS uptake and integration.
- **Creative cost-saving measures for equipment**. The cost of POCUS equipment and training can be a considerable barrier, so many of our programs found creative ways to cut costs. Many of our institutions secured discounts for the purchase of equipment by buying in bulk and opting for educational ultrasound devices rather than clinical ones (ie, the same clinical grade device, which can be used for patient care, but is discounted when its primary use is for education). Another strategy employed was to share licenses for various subscription-based educational tools. Many chose to ask their learners to serve as each other's patient models when practicing hands-on scanning rather than use paid patient models. **Pearl:** Get creative when seeking POCUS resources.
- **Grant funding to offset costs**. All found seeking external funding to be necessary for the launch and expansion of POCUS programming. Some groups used local or institutional funding opportunities (such as an area health education center or an institutional fund). Others integrated POCUS education into federal grant funded educational programs. Although the majority of these were relatively small funding opportunities, this support allowed for meaningful progress. **Pearl:** Every dollar counts—apply broadly for varied funding opportunities to cover start-up costs.

Different Strokes for Different Folks: Things We Did Differently

- **Institutional resources**. Our programs range widely in size, makeup, age (from one of the oldest family medicine residencies to one of the newest), preexisting POCUS foundation, and financial capacity; yet we are all making strides toward improving POCUS education. **Pearl:** Start somewhere—use what you have and don't be afraid to start small.
- **Devices**. Among our collaboration were a variety of both handheld and cart-based ultrasounds in use. Many shared that their institution spent a lot of time and effort deciding which devices to purchase, and while each has pros and cons, most felt that any brand would work well in both clinical practice and resident education. With the benefit of hindsight, several felt that they could have spent less time on this decision. **Pearl:** Don't overthink the device selection decision; they all work.
- **Credentialing and billing**. Credentialing and billing practices varied widely among our various programs and institutions. Notably, many of our programs were teaching POCUS and did not have any POCUS credentialing and billing process in place. Despite many people's fears about teaching ultrasound skills without clear credentialing and billing pathways established, most felt that starting the educational component of the program was worthwhile. **Pearl:** It's a process, and we are all building the airplane as it flies.

Through this collaboration, we found solidarity in our shared struggles and strength in numbers. We are excited to continue sharing resources and supporting one another on our parallel journeys toward POCUS integration in our unique systems. We are happy to share the following recommendations, based on our collective experiences in building POCUS systems:

1. **Start with a needs assessment**. Each program and department is unique. Assess your program's strengths and limitations.
2. **Develop an individualized plan for your program**. Leverage your strengths to build the foundation upon which your program will grow.
3. **Capital investment is crucial**. No matter the starting point, capital resources are necessary for building POCUS systems. Often a steep start-up investment is required. This must include protected time for faculty development and administrative time for POCUS champions.
4. **Top-down support is critical**. Beyond the initial investments, ongoing departmental and institutional buy-in are essential for long-lasting success. Development of integrated systems for POCUS education,

quality assurance, credentialing, and billing requires real buy-in from leadership.

5. **It's okay to start small**. Even small steps build enthusiasm and generate further capacity for future success.
6. **Find your support network**. Remember that your team is bigger than your institution. Every family medicine program and department is working toward the goal of POCUS integration, and collaboration is a key feature of success.

This collaboration of the New England Family Medicine Department POCUS directors is the beginning of a fruitful partnership and will be the launching point for future joint efforts. Our next steps include regular meetings of the regional POCUS directors, shared resources (eg, educational materials, credentialing pathways), joint educational workshops and didactics, joint scholarship opportunities, supporting one another's successes, and working together on our shared challenges.

REFERENCES

1. Shen-Wagner J, Deutchman M. Point-of-care ultrasound: a practical guide for primary care. *Fam Pract Manag*. 2020;27(6):33–40. https://www.aafp.org/fpm/2020/1100/p33
2. Accreditation Council for Graduate Medical Education. ACGME Program Requirements for Graduate Medical Education in Family Medicine. 2023. Accessed September 1, 2026. https://www.acgme.org/globalassets/pfassets/programrequirements/2025-reformatted-requirements/120_familymedicine_2025_reformatted.pdf
3. Hall JWW, Holman H, Barreto TW, et al. Point-of-care ultrasound in family medicine residencies 5-year update: a CERA study. *Fam Med*. 2020;52(7):505–511. doi:10.22454/FamMed.2020.223648
4. Capizzano JN, O'Dwyer M-C, Furst W, et al. Current state of point-of-care ultrasound use within family medicine. *J Am Board Fam Med*. 2022;35(4):809–813. doi:10.3122/jabfm.2022.04.220019