

QUERI Partnered Evaluation Initiative

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Principal Investigator: Nilam J. Soni, MD, MS

Nilam.Soni@va.gov | Sonin@uthscsa

Evaluation of Implementation: National Point-of-care Ultrasound Training Program

South Texas Veterans Health Care System

Overview

Point-of-care ultrasonography (POCUS) has been shown to reduce procedure-related complications from invasive bedside procedures and reduce ancillary diagnostic testing, which ultimately decreases patients' exposure to radiation as well as healthcare costs. Despite its potential advantages, POCUS has not been well adopted into healthcare, an important barrier being the limited numbers of providers trained in its use. The VA's Simulation, Learning, Education, and Research Network (SimLEARN) and Specialty Care Centers of Innovation have launched a collaborative initiative to develop a national POCUS training program. The goal of this program is to teach frontline VA providers basic diagnostic and procedural applications of POCUS. The aims of our partnered evaluation are to:

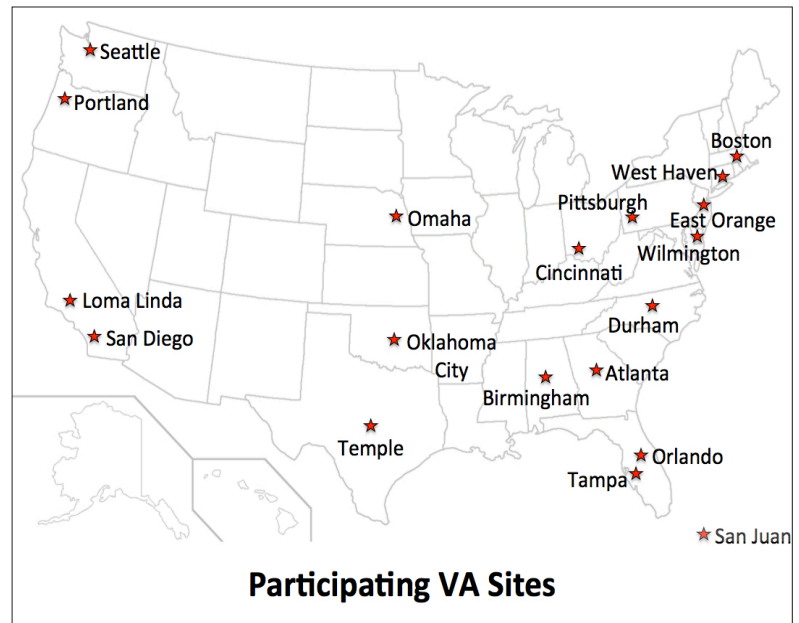
- 1 Evaluate provider skill acquisition and retention, and frequency of POCUS use after participation in the POCUS Training Course.
- 2 Determine the effect of the POCUS Training Course on facility-level frequency of POCUS use.
- 3 Determine provider- and facility-level barriers and facilitators to POCUS use.

Methodology

Evaluation activities are being conducted on-site at the SimLEARN National Simulation Center in Orlando, Florida and remotely using teleconferencing software. Both qualitative and quantitative data are being collected with the following strategies.

- A national Facility POCUS Survey was completed by all facilities in the VA healthcare system to assess

readiness for implementation of POCUS. Nineteen facilities willing to support their providers' participation in the POCUS training program were recruited and randomized to early-intervention vs. delayed-intervention groups during FY17.



- Providers from selected facilities are participating in a 2.5-day POCUS Training Course at the SimLEARN National Simulation Center. Pre- and post-course tests are being used to assess acquisition of knowledge and technical skills to perform POCUS exams. Post-course retention testing for knowledge and skills are being performed 6-8 months after the training course. A brief Provider POCUS Survey is being used to determine frequency of POCUS use by providers at baseline and 6-8 months post-course.

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- Facilities in the early-intervention group will be compared to the delayed-intervention group with regard to frequency of POCUS use and bedside procedural complication rates. Using the Provider POCUS Survey, frequency of POCUS use by providers in both early- and delayed-intervention facilities will be compared at baseline and post-course. Additionally, coding data will be reviewed to assess frequency of procedures performed with and without imaging guidance and procedural complication rates.
- Provider and facility-level barriers will be assessed using three tools: 1) Provider POCUS Survey completed by all participating providers, 2) Facility POCUS Survey completed by Chiefs of Staff of all VA facilities, and 3) field notes gathered by faculty during post-course retention testing at 6-8 months. Differences in barriers reported and their relationship to frequency of POCUS use will be compared.

Findings and Anticipated Impacts

- From October 2016 to November 2017, 127 VA providers from 19 VA facilities participated in 12 POCUS Training Courses at the SimLEARN National Simulation Center, and courses are ongoing in fiscal year 2018.
- Both providers' POCUS knowledge and hands-on skills were assessed pre-course (day 0), immediately post-course (day 3), and remotely post-course (6-8 months). The mean knowledge test scores improved from 66% pre-course to 90% immediately post-course, and then declined slightly to 83% after 6-8 months. After participating in the POCUS Training Course, participants' mean skills test scores pre-course, immediate post-course, and remotely post-course were: lung (19% vs. 74% vs. 72%), cardiac (16% vs. 65% vs. 59%), abdomen (25% vs. 79% vs. 69%), and peripheral IV insertion (32% vs. 74% vs. 69%).
- At 6-8 months post-course, 73% of participants reported using POCUS, with 46% of participants who were not previously using POCUS now using it, and 92% of pre-course users continuing to use it. Using facility coding data, our participating facilities increased POCUS usage by 6% vs. 2% among 86 non-participating facilities for the diagnostic and procedural applications of interest.
- Baseline barriers to POCUS implementation reported by chiefs of staff at facilities not currently using POCUS were: lack of trained providers (71%), lack of ultrasound equipment (63%), lack of a clinician champion (29%), no perceived clinical utility (29%), lack of funding for ultrasound equipment (25%), and lack of training opportunities (21%).
- Course evaluations have been in the excellent range with nearly all participants "strongly agreeing" (91%) or "agreeing" (9%) to recommend the POCUS Training Course to others.

Findings from this project are guiding ongoing efforts of this QUERI's operational partners—Specialty Care Centers of Innovation and the Simulation Learning and Research Network—to establish and grow the national POCUS training program. Additionally, this project's findings are guiding implementation of POCUS use at VA hospitals throughout the system.

Operational Partner(s)

- VHA Simulation, Learning, Education, and Research Network (SimLEARN)
- VHA Specialty Care Centers of Innovation (SCCI)