

Simultech - Innovative Country-Wide Ultrasound Training Center

Authors : Yael Rieder, Yael Gilboa, S. O. Adva, Efrat Halevi, Ronnie Tepper

Abstract : Background: Operation of ultrasound equipment is a core skill for many clinical specialties. As part of the training program at -Simultech- a simulation center for Ob\Gyn at the Meir Medical Center, Israel, teaching how to operate ultrasound equipment requires dealing with misunderstandings of spatial and 3D orientation, failure of the operator to hold a transducer correctly, and limited ability to evaluate the data on the screen. We have developed a platform intended to endow physicians and sonographers with clinical and operational skills of obstetric ultrasound. Simultech's simulations are focused on medical knowledge, risk management, technology operations and physician-patient communication. The simulations encompass extreme work conditions. Setup: Between eight and ten of the eight hundred and fifty physicians and sonographers of the Clalit health services from seven hospitals and eight community centers across Israel, participate in individual Ob/Gyn training sessions each week. These include Ob/Gyn specialists, experts, interns, and sonographers. Innovative teaching and training methodologies: The six-hour training program includes: (1) An educational computer program that challenges trainees to deal with medical questions based upon ultrasound pictures and films. (2) Sophisticated hands-on simulators that challenge the trainees to practice correct grip of the transducer, elucidate pathology, and practice daily tasks such as biometric measurements and analysis of sonographic data. (3) Participation in a video-taped simulation which focuses on physician-patient communications. In the simulation, the physician is required to diagnose the clinical condition of a hired actress based on the data she provides and by evaluating the assigned ultrasound films accordingly. Giving 'bad news' to the patient may put the physician in a stressful situation that must be properly managed. (4) Feedback at the end of each phase is provided by a designated trainer, not a physician, who is specially qualified by Ob\Gyn senior specialists. (5) A group exercise in which the trainer presents a medico-legal case in order to encourage the participants to use their own experience and knowledge to conduct a productive 'brainstorming' session. Medical cases are presented and analyzed by the participants together with the trainer's feedback. Findings: (1) The training methods and content that Simultech provides allows trainees to review their medical and communications skills. (2) Simultech training sessions expose physicians to both basic and new, up-to-date cases, refreshing and expanding the trainee's knowledge. (3) Practicing on advanced simulators enables trainees to understand the sonographic space and to implement the basic principles of ultrasound. (4) Communications simulations were found to be beneficial for trainees who were unaware of their interpersonal skills. The trainer feedback, supported by the recorded simulation, allows the trainee to draw conclusions about his performance. Conclusion: Simultech was found to contribute to physicians at all levels of clinical expertise who deal with ultrasound. A break in daily routine together with attendance at a neutral educational center can vastly improve performance and outlook.

Keywords : medical training, simulations, ultrasound, Simultech

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