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Practical MRI sessions: The road to an in-house facility in the technical medical education program

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Background: Magnetic resonance imaging (MRI) is an important diagnostic tool in clinical practice that exhibits many technical complexities. Technical medicine students are trained in both understanding clinical outcomes of MRI, as well as its technical principles, possibilities, and limitations. We report how an in-house MRI facility is deployed to teach students both technical and medical aspects of MRI.

Summary of Work: An in-house MRI facility was specifically designed for educational purposes. Practical assignment questions were adapted to the capabilities of the MRI system. The introductory lecture, preparation materials, practical instructions and questions, and practical supervision were evaluated by all participating students.

Summary of Results: 43 first-year technical medicine master students were the first to undergo the in-house 4-hour during practical sessions. They were (clinically) trained in patient safety and interaction, and (technically) in recognizing and understanding MRI-related artifacts and sequences. Students were highly satisfied with instructions and supervision during the practical session in this set-up, only a small remark was made on the clarity of the preparation materials and assignment questions.

Discussion: The main advantage of this set-up is the cost-effective aspect of owning a low-cost MRI system while having a learning experience equal to a hospital setting. Furthermore, this creates the opportunity to supervise multiple groups at once by one supervisor.

Conclusion: The opportunity of conducting in-house practical sessions with students has shown great promise. Preparation instructions and assignment questions should be improved to maximize learning experience and to conduct practical sessions more efficient.

Take Home Messages: We have taken the first step towards a cost-effective and fully integrated setting in which one supervisor can ideally guide multiple groups of technical medicine students. Additionally, students do not need to be proficient in patient interaction for this training, which would be required before working with clinical patients in more complex environments like hospitals.

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Promoting ultrasound in undergraduate medical education: an exploration of truth statements and a critical narrative review

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Background: There are increasing calls for early integration of ultrasound into medical education, beginning in medical school. However, the evidence base underpinning these calls has not been sufficiently examined. In this study we identified the 'truth statements' (discursive rationales) that support the move towards incorporation of ultrasound in undergraduate medical education, and examined the evidence base for these truth statements.

Summary of Work: We systematically identified 68 medical education publications containing statements calling for early ultrasound training. We used Foucauldian critical discourse analysis techniques to identify frequently occurring 'truth statements'. We then conducted a critical narrative review to identify supporting evidence that supported these statements.

Summary of Results: We identified four dominant 'truth statements': Undergraduate ultrasound training (1) ensures a minimum skill level for patient safety; (2) is necessary because graduates must acquire advanced skills during post-graduate training; (3) improves medical students' diagnostic accuracy and ability to learn physical examination techniques; (4) allows students to see inside a living body, leading to better understanding of anatomy. Despite a systematic search, we found minimal empirical supporting evidence for any of these 'truth statements'.

Discussion: We approached this topic from a critical theoretical perspective, and then examined each truth claim within its authors' research paradigms. Our analysis highlights the constructed nature of the discourse promoting early integration of ultrasound in medical education.

Conclusion: Early integration of ultrasound in medical education is seen by authors within the field as natural, inevitable, and positive. We have, however, found minimal evidence to support the claims legitimizing this move.

Take Home Messages: The push for ultrasound training in undergraduate medical education is rationalized through a set of 'truth statements' that appear in academic publications, creating a sense of legitimacy and consensus. The lack of empirical evidence for these 'truth statements' demonstrates that factors other than research evidence play in propelling curricular change.