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CORR Insights®: Teaching the Basics: Development and Validation of a Distal Radius Reduction and Casting Model

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Where Are We Now?

Despite strict regulations for trainee work hours and a greater respect for patient autonomy, the foundational structure of surgical training promoted by William Halsted—apprenticeship and graduated responsibility—has essentially remained unchanged over the past century.

This CORR Insights® is a commentary on the article “Teaching the Basics: Development and Validation of a Distal Radius Reduction and Casting Model” by Seeley and colleagues available at: DOI: [10.1007/s11999-017-5336-3](https://doi.org/10.1007/s11999-017-5336-3).

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While the educational structure remains intact, the way in which orthopaedic educators teach and assess competency is much more flexible. Orthopaedic educators are collaborating with professional educators to address teaching within our evolving healthcare delivery systems, work-hour restrictions, and changing societal and bioethical imperatives. These partnerships have assisted orthopaedic educators in developing sound educational techniques for teaching new surgical skills to orthopaedic trainees while also measuring and assessing skill fluency (accuracy in relation to time) [2, 3]. One of those educational techniques, surgical simulation, is considered an effective strategy for orthopaedic resident training [1].

This *CORR Insights®* comment refers to the article available at DOI: [10.1007/s11999-017-5336-3](https://doi.org/10.1007/s11999-017-5336-3).

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In their study, Seely and colleagues developed a simulation model to train residents in the skills necessary to reduce displaced distal radius fractures in children and adolescents. The benefits of this model seems indisputable—every participant noted that the model taught the basic steps of fracture reduction and 15 of 18 believed it was a realistic anatomic reproduction and simulated their experience of distal radius reduction in a clinical setting.

Where Do We Need To Go?

Simulation models that accurately, anatomically, visually, and texturally reproduce realistic clinical presentations can address the emerging challenges to classic surgical training. Ideally, future trainees will have developed substantial surgical skills before even stepping into the operating room. The incorporation of newer and more-realistic simulation models and continued collaboration with professional educators will allow us to achieve this goal. The greater the

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number of models that are available to simulate common outpatient and intraoperative clinical situations, the better prepared our trainees will be to care for their patients before they utilize these skills in the emergency department and operating room. I believe the opportunity to learn procedural and operative skills before utilizing these skills on patients will dramatically help ease the ethical tension of training future surgeons while protecting patient autonomy and the primacy of patient welfare. With financial backing, these innovations can revolutionize surgical training and allow improvement and customization of training to each trainee's needs. But funding for medical education and skill training is severely limited.

How Do We Get There?

The cost, durability, and longevity of this wrist-fracture model (and any

future models) will influence its availability and usage.

In addition, the present design of clinical training primarily remains a mentor/apprenticeship model in which the trainee learns their skill by watching and assisting in patient care with a busy clinician. We all have experienced busy days in our clinics or in the operating room in which the students and trainees learning experience is compromised by the work load. Our responsibilities as successful and effective educators are overcome by our clinical responsibilities and our institutions do not financially reward (and sometimes penalize) physicians who decrease their clinical volume to be more effective educators. Orthopaedic educators need to be afforded the necessary time and to be supported financially to train future physicians and surgeons.

Orthopaedic chairs should identify "educators" in their departments and support them financially in the same

fashion that orthopaedic surgeons in poorly reimbursed subspecialties who are integral contributors to their department are reimbursed. This support will allow orthopaedic educators the necessary time to train surgeons, create realistic and effective simulation models, and identify training strategies that improve how we train surgeons.

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