

# Teaching Chest Radiograph Interpretation Through Simulated Resuscitation Scenarios: A Novel Approach to Medical Student Education

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# Introduction

- ▶ Chest radiograph (CXR) interpretation is an important skill for medical students, however, teaching provided by medical schools is often inadequate.(1)
- ▶ We devised a quality improvement project to evaluate whether CXR interpretation could be taught via an engaging, simulated-based approach

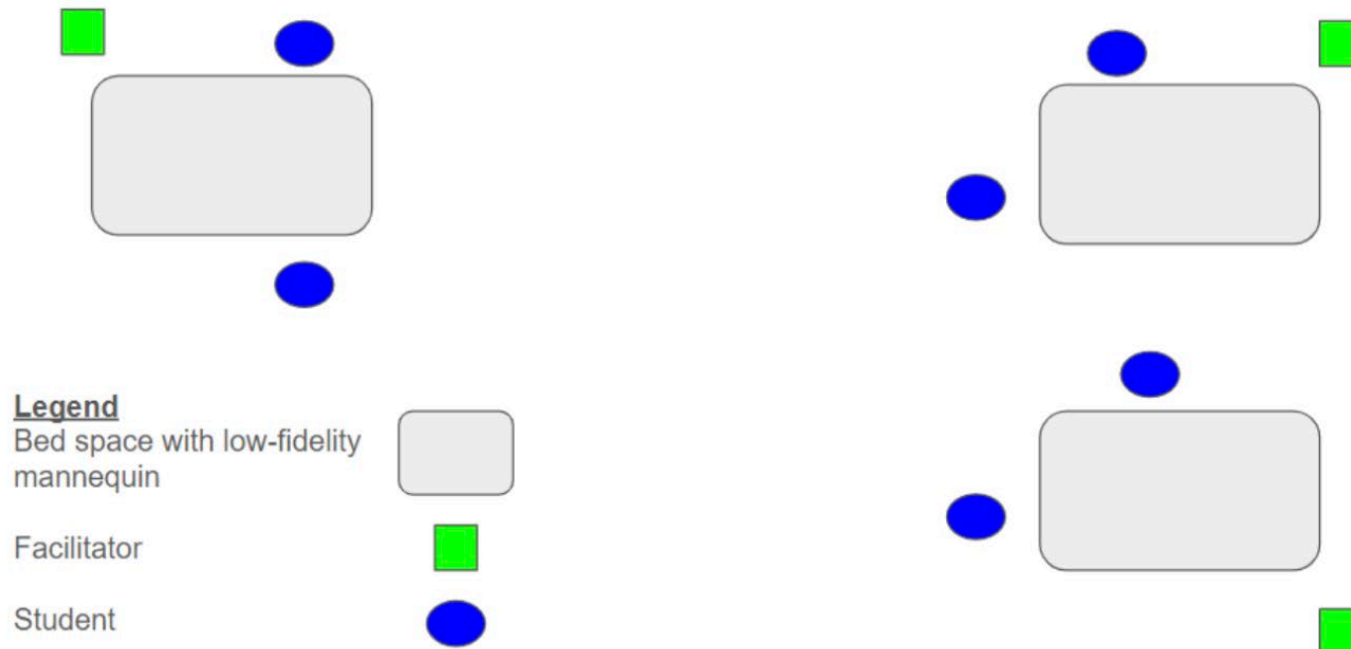
1) Chew C, O'Dwyer PJ, Sandilands E. Radiology for medical students: Do we teach enough? A national study. Br J Radiol. 2021; 9(1119) 20201308

# Methods

- ▶ We recruited 3<sup>rd</sup> year medical students on their medicine and surgery clinical rotations.
- ▶ The intervention consisted of three 15-minute simulation scenarios (tension pneumothorax, pleural effusion, pneumonia) on a simulated ward (shown on next slide). Low-fidelity mannequins were used and students were expected to use the ABCDE approach and to request appropriate imaging. Students rotated through each scenario sequentially in pairs and were debriefed on CXR interpretation and acute illness management at the end.
- ▶ Pre- and post-intervention results were collected using 5-point Likert scales using Google Forms. Statistical significance was calculated using the paired samples t-test.

# Figure 1: diagram showing the simulated ward layout

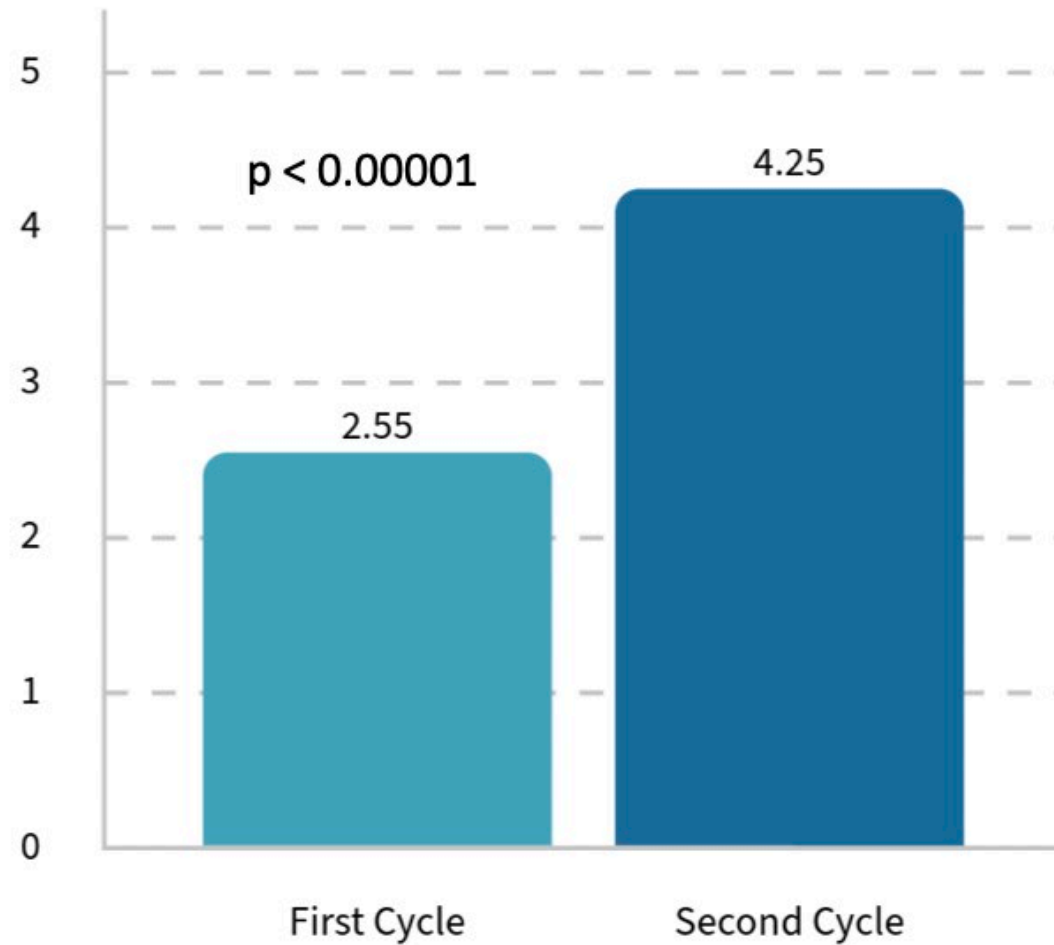
## Simulated Ward Layout



# Results

- ▶ 20 participants participated in the study.
- ▶ Confidence: Before the intervention, the mean confidence at interpreting CXRs was 2.55 out of 5. After the intervention, mean confidence rose to 4.25 out of 5 (increased by 1.70,  $p < 0.00001$ ).
- ▶ Usefulness: Participants rated the session 4.8 out of 5 on average.
- ▶ Free text comments mentioned the case mix, integration of radiographs into the ABCDE assessment and teaching on systematic methods to interpret radiographs as being assets of the intervention.

Figure 2: Graph showing student confidence before and after the intervention



# Conclusion

- ▶ Simulation can improve student confidence in CXR interpretation.
- ▶ Students find simulation-based scenarios to be an engaging and interactive way to learn about imaging.
- ▶ To improve student confidence and ability further, we could introduce multiple radiology-based sessions throughout their rotation.

# Thank You

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