



MEDICAL EDUCATION  
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## Medical Education Scholarship Forum Proceedings

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### Examination of the effect of low versus high fidelity simulation of Neonatal Resuscitation Program (NRP) learning outcomes

**Vernon Curran, Centre for Collaborative Health Professional Education, Professional Development and Conferencing Services; Lisa Fleet, Professional Development and Conferencing Services; Susan White, Business Administration; Clare Bessell, Akhil Deshpandey, Anne Drover, Pediatrics**

**Background** Approximately 6% of all newborns and up to 80% of infants weighing less than 1,500 grams require some resuscitation intervention at birth and the quality of care provided at that time can have a significant impact on the outcome of that life. The Neonatal Resuscitation Program (NRP), introduced in Newfoundland and Labrador (NL) in the early 1990's, has been developed to educate physicians and other health care providers about newborn resuscitation. Several studies have examined the use of simulation in resuscitation training, but few have compared low and high-fidelity simulation for NRP learning outcomes. **Objectives** To examine the effect of using low versus high-fidelity manikin simulators for NRP training on medical student knowledge, skill, confidence, and teamwork performance. **Methods** Randomized posttest-only control group study; experimental group received NRP instruction and megacode assessment using a high-fidelity manikin simulator, while control group received NRP instruction and megacode assessment using a low-fidelity manikin simulator. Students completed: performance skills stations; a megacode skills assessment; and teamwork simulation scenario. As part of participating in the study, students were asked to complete participant evaluation and confidence surveys. Their teamwork simulation (which was recorded and used for debriefing during training) was provided to two raters who examined teamwork characteristics and functioning. **Results** Sixty-six (N=66) medical students participated in NRP and the study (N=31 high fidelity and N=35 low-fidelity). Participant megacode, satisfaction, and confidence data has been collected. Preliminary analysis indicates that students who received NRP training using the high-fidelity simulator report a higher degree of confidence in performing various skills related to NRP. **Conclusions** In 2003, the International Liaison Committee on Resuscitation (ILCOR) recommended that high-fidelity simulation-directed training should increasingly supplement instructor-directed training in advanced life support/advanced cardiac support.<sup>3</sup> High-fidelity training has the potential to add more realism to NRP training, thereby increasing participant satisfaction and confidence, and in turn, improving learning and patient health outcomes.