Jefferson Center for InterProfessional Education (JCIPE) Interprofessional Education and Care e-newsletter

Volume 2 | Issue 1 Article 3

10-28-2010

Developing Interprofessional Teams using High Fidelity Resuscitation

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InterProfessional Education and Care
NEWSLETTER
Vol. 2, No. 1 | Fall 2010

Developing Interprofessional Teams Using High Fidelity Resuscitation

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Interprofessional simulations using scenarios, megacodes, algorithms, and high fidelity equipment provide a closer approximation to what clinicians are likely to face as a team in the actual resuscitation of a newborn infant.

The benefits that are achieved with interprofessional teams using high fidelity resuscitation scenarios in neonatal, pediatric and obstetrical training include enhanced learning experiences, improved professional interaction, application of clinical principles, and interpretation of clinical data. Participants using high fidelity scenarios with complex cardiac arrest events demonstrated increased confidence, knowledge, and treatment decisions rather than low-fidelity.[1]

A resuscitative event requiring a rapid response from a team of providers may occur at any time in the delivery room (DR), intensive care nursery (ICN), and/or pediatric floor requiring knowledge, skills, and competencies taught in standard resuscitative programs. Programs such as the Neonatal Resuscitation Program (NRP) and Pediatric Advanced Life Support (PALS) are two opportunities that nurses, physicians, respiratory therapist, residents, advanced practice nursing students, and faculty have leveraged to advance interprofessional education using high fidelity simulation at Thomas Jefferson University.

Since 1990, NRP has been taught to obstetrical residents using low fidelity simulation. At Jefferson, since 2004, neonatal, pediatric and obstetrical interprofessional teams have been collaborating in high fidelity simulation scenarios. Using SimBaby™, a high fidelity mannequin, NRP is taught by clinical interprofessional experts who participate in an annual training for incoming obstetrical residents. Currently, pediatric and neonatal experts are teaming to practice pediatric resuscitation codes using PALS guidelines with staff nurses and pediatric residents. The sessions are 90 minutes and include two pediatric resuscitation events such as acute respiratory distress, shock, seizures, and/or cardiac arrhythmias using SimBaby™. These team-based sessions give learners time to process the scenario and practice skills as a way of learning and doing in an environment more friendly to analysis and critical assessment, and less critical to the morbidity and mortality of patients.

SimBaby™ has "built-in" software that allows for automatic debriefing based on the event log synchronized with video pictures, which provides immediate, detailed feedback on performance to learners. The infant simulator mimics the clinical characteristics of the initial steps of an assessment, the "ABC's," with a realistic airway, infant breathing patterns, cardiac heart sounds, peripheral pulses, EKG patterns and an IV training arm.[2]

Interprofessional teams using high fidelity resuscitation scenarios in neonatal, pediatric and obstetrical training have been successfully implemented while utilizing NRP and PALS standards. Participants describe the scenario experiences as "that was great," "we really need to make sure we know who the team leader of the code is," "I was hyper extending the SimBaby™ head and that is why I could not get the ET tube in." Over time participants have noted how valuable the experience is for enhancing their skills.

Learning by doing in real-life situations has become less acceptable, particularly when invasive procedures and high-risk care are required. [3] Interprofessional teams using high fidelity resuscitation scenarios in neonatal, pediatric and obstetrical scenarios allow participants to practice and improve on their clinical skills. While completion of NRP or PALS programs do not ensure a *student* can successfully resuscitate an infant in an actual clinical setting, when students encounter a real emergency, it will not be the first time.[4-5] The interprofessional teams using high fidelity resuscitation scenarios combine knowledge and technical skills that can enhance their effectiveness in infant resuscitation outcomes. During the most critical time for patients, clear delineation of clinical skills, resuscitative efforts, and ability to work with a cohort of health care professionals present in the emergency event makes the difference in neonatal outcomes.

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