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Conference Abstract

Serious gaming for neonatal resuscitation skills maintainance

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Abstract

During the first moments after birth, neonates undergo dramatic physiological changes to successfully adapt to the extra uterine environment the most important of which is establishment of independent respiration. Although other newborn body systems change their level of functioning gradually, radical and rapid cardiopulmonary adaptation must occur for neonates to survive. For some, the physiological challenge is great. It is estimated that approximately 10% of all newborns require some assistance to begin breathing and less than 1% require extensive resuscitation. Live births in the United Kingdom in 2011 were 797,778 therefore around 79,700 babies require assistance each year in the UK to establish independent respiration.

Although early neonatal depression is common, it may not be always predicted prior to birth. The need for resuscitation may only be anticipated in around 50% of cases therefore, the presence of personnel adequately prepared to perform resuscitation is an important first step in newborn resuscitation. A rapid, knowledgeable, and skilful response by all caregivers is essential.

However, there can be significant variation in the presence of skilled personnel at newborn resuscitation. Maternity Care professionals who have attended simulation training have demonstrated that they retain knowledge, but alarming loss of skill performance occurs by 6 months after training for resuscitation.

This situation is exacerbated when professionals have relatively few opportunities to use their skills. Midwives and Doctors in large urban maternity units usually perform resuscitations on a regular basis, which reinforces their knowledge and skills gained during participation in simulation training. Professionals providing care in rural hospitals usually practise as generalists and are challenged in maintaining their resuscitation skills because the number of births to which they attend is small.

Scottish remote and rural maternity service teams face increasing challenges in maintaining a broad range of skills in the context of isolated clinical practice and a dispersed patient population. Skills may not be honed when the unexpected need to use them occurs. Incomplete or erroneous knowledge, skills that are out of practice and lack of confidence or belief in the effectiveness of an intervention may all contribute to delayed initiation of resuscitation or ineffective performance.

National clinical skills training through the SMMDP exists to support such teams but ways of extending the effective lifespan of training and maintaining skills were sought by SMMDP.

There is increasing evidence that serious games that are designed to solve a problem may be of use to today's practitioners. It has been demonstrated that video game skill correlates with

laparoscopic surgical skills. Training programmes that include video games may help in the technical interface between surgeons and screen-mediated applications, such as laparoscopic surgery.

There are many advantages to using simulated or computer based environments, including: they present no risk to human patients, they provide structured learning opportunities with defined learning objectives. They enable practice without interruption or interference and can be scheduled at times convenient to users. They also facilitate practice of routine and rare situations and foster integration of cognitive, technical and behavioural skills.

The SMMDP has developed a neonatal serious game with a number of resuscitation scenarios and is exploring the world of computer games and mobile apps in the light of the considerable body of evidence to prove that regular play has a beneficial impact on spatial awareness and coordination. Playing this game on PC, and on ipads and mobile phones, may be practical teaching tools to help maternity care professionals maintain their skills.

Keywords

resuscitation; neonatal; gaming; maintenance; innovative

PowerPoint presentation:

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