

'STEP UP': UTILISING SIMULATION TO ASSIST IN THE TRANSITION FROM MEDICAL SENIOR HOUSE OFFICER TO REGISTRAR

Roy Edward¹, William Gubbins¹, Hannah Pleasance¹, Megan Rowley¹, Benjamin Giles¹, Benjamin Smalley¹; ¹Portsmouth Hospitals University NHS Trust, Portsmouth, United Kingdom

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Background: Core medical training was replaced by Internal Medicine Training (IMT) in August 2019. One of the more notable changes was the introduction of a 3rd year, known as IM3, to IMT. This year is considered a step-up year or a junior registrar year, where advice from a supervising physician is readily available. To assist with this transition, we created step-up simulation-based scenarios. Previously, it has been demonstrated that simulation is an important tool in improving the confidence and knowledge of first year doctors. Simulation provides doctors an ethically and educationally safe setting to develop their practice [1]. The purpose of these scenarios is to replicate the complex patients and dynamic environments that on call general medical registrars need to manage.

Methods: We created an in-person teaching day, entitled 'Step up', which consisted of four 20-minute, IM3 specific, high-fidelity scenario-based simulations. In each scenario, a computerised full-body manikin (SimMan Essential) was used. The manikin could be programmed to provide physiological response to scenario participants' actions. The participants were each tasked to assess an acutely deteriorating patient (the manikin), whilst managing a demanding bleep to add realistic distractions and human factor issues to the scenario. Each participant completed one scenario and watched their peers complete the others from a separate room. Following this, participants were debriefed by qualified member of staff and then taught by a speciality registrar or consultant. Feedback forms were collected. The participants were tasked to rate the simulation day, using a nominal Likert scale from 1 to 10, for usefulness, relevance, clarity, and overall quality. 1 represented strong disagreement and 10 strong agreements with a particular domain.

Results: Across 4 full days, we had 11 IM3 doctors take part in the 'step up' scenario-based simulations. 9 of the 11 participants completed feedback forms. Scores ranged from 8 to 10. Median scores for all domains were 10.

Conclusion: We have demonstrated that 'step up' scenarios are a useful and relevant aid for those transitioning into IM3. Further research utilising comparative data will provide more meaningful conclusions. We will be repeating the simulation programme for the next cohort. We will have baseline, one and three-month follow up questionnaires to assess these scenarios further.

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SIMULATING PRETERM BIRTH IN THE COMMUNITY

Jessica Groucutt¹, Diana Aguirre², Stephanie Henry³, et al.; ¹Birmingham Women's and Children's NHS Trust, Birmingham, United Kingdom, ²University Hospitals Birmingham, Birmingham, United

Kingdom, ³West Midlands Ambulance Service, Brierley Hill, United Kingdom

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Background: Childbirth can be unpredictable in its timing and clinical course. Unplanned pre-hospital birth occurs in 0.5% of babies [1]. Premature babies are also born in the community and in these cases, every minute matters in order to reduce morbidity and mortality. Hypothermia has been shown to causes a rise in mortality in low-birth-weight infants – in fact a 28% rise per 1 degree decrease in admission temperature [2].

In 2020–21 webinars were delivered to West Midlands Ambulance Service (WMAS) paramedics to improve their knowledge and expertise when attending preterm births [3]. This encompassed training on basic Neonatal Life Support skills and a focus on thermoregulation. A heated mattress is also now carried routinely by WMAS. There was overwhelming positive feedback [3] so the education was expanded.

Our aim was to show the clinical management of a marginal preterm infant in the community focussing on simple interventions known to improve outcomes such as delayed cord clamping and optimal thermal care.

Methods: The simulation involved a low-risk term pregnant woman who went in to preterm labour and quickly delivered at 35 weeks. The paramedics attended as the baby delivered. It established regular respirations with simple airway manoeuvres. They used a heated gel mattress to maintain the baby's temperature and allowed delayed cord clamping and then conveyed the mother and infant to hospital for assessment.

Results: The simulation was recorded and is now being used to deliver training to West Midlands Ambulance Service. The paramedics who attended stated how much it had increased their confidence in managing a preterm delivery and consolidated their learning from the previous webinar.

Conclusion: We expect that with increased staff training and confidence, the incidence of preterm babies admitted with hypothermia following an unexpected birth in the community will reduce, thus reducing mortality.

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VISUALISATION OF THE TRANSMISSION OF MICROBIAL PARTICLES IN THE NEONATAL INTENSIVE CARE UNIT

Jessica Groucutt¹, Matthew Nash¹; ¹Birmingham Women's and Children's NHS Trust, Birmingham, United Kingdom

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Background: Neonates in intensive care are vulnerable to colonisation and invasive infections from multi-resistant gram-negative bacteria [1]. In 2021 our neonatal unit (NNU) fell victim to an ESB: *Klebsiella* outbreak. An outbreak control plan was formulated that included education; hand-hygiene