

## Regular Laboratory Based Neonatal Simulation Program Increases Senior Clinicians' Knowledge, Skills and Confidence Caring for Sick Neonates

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**Abstract :** Introduction: Simulation technology is used by neonatal teams to learn and refresh skills and gain the knowledge and confidence to care for sick neonates. In-situ simulation is considered superior to laboratory-based programmes as it closely mirrors real life situations. This study reports our experience of running regular laboratory-based simulation sessions for senior clinicians and nurses and its impact on their knowledge, skills and confidence. Methods: A before and after questionnaire survey was carried out on senior clinicians and nurses that attended a scheduled laboratory-based simulation session. Participants were asked to document their expectations before a 3-hour monthly laboratory programme started and invited to feedback their reflections at the end of the session. The session included discussion of relevant clinical guidelines, immersion in a scenario and video led debrief. The results of the survey were analysed in three skills based categories - improved, no change or a worsened experience. Results: 45 questionnaires were completed and analysed. Of these 25 (55%) were completed by consultants seven and six by nurses and trainee doctors respectively, and seven respondents were unknown. 40 (88%) rated the session overall and guideline review as good/excellent, 39 respondents (86%) rated the scenario session good/excellent and 40/45 fed back a good/excellent debrief session. 33 (73%) respondents completed the before and after questionnaire. 21/33 (63%) reflected an improved knowledge, skill or confidence in caring for sick new-born babies, eight respondents reported no change and four fed back a worse experience after the session. Discussion: Most respondents found the laboratory based structured simulation session beneficial for their professional development. They valued equally the whole content of the programme such as guideline review and equipment training as well as the simulation and debrief sessions. Two out three participants stated their knowledge of caring for sick new-born babies had been transformed positively by the session. Sessions where simulation equipment failed or relevant staff were absent contributed to a poor educational experience. Summary: A regular structured laboratory-based simulation programme with a rich content is a credible educational resource for improving the knowledge, skills and confidence of senior clinicians caring for sick new born babies.

**Keywords :** knowledge, laboratory based, neonates, simulation

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