

# Evaluating a Network Based Multi-Professional Neonatal Emergencies Simulation Course

Davidson S.L<sup>1,3</sup>, Naidu S<sup>2, 3</sup>, Ratnavel N<sup>2, 3</sup>, Sellwood M<sup>1</sup>, Mohinuddin S<sup>2, 3</sup>

1. University College Hospital Foundation NHS Trust 2. Royal London Hospital, Barts Health NHS Trust  
2. 3. London Neonatal Transfer Service, Barts Health NHS Trust

## Objective

To evaluate the usefulness of a network based multi-professional neonatal emergencies team training simulation course on participants self perceived level of confidence in dealing with common neonatal emergencies.

## Background

The development of networks and centralisation of services has decreased the exposure of staff to neonatal emergencies. Following an analysis of patient safety incidents by the London NTS, a neonatal emergencies team training simulation (NETS) course was developed in collaboration with tertiary network centres.

The course was designed as a one day multi-professional training initiative with an aim to enhance staff confidence in dealing with neonatal emergencies. A variety of educational methods within a facilitated team based learning environment were used. The course focused on communication, team working, leadership skills and awareness of human factors on patient safety. It reinforced key aspects of knowledge pertaining to common neonatal emergencies.

Simulation scenarios were designed to use clinical, organisational and communication skills and provide operational learning [1]. Debriefing and group discussions were used to promote knowledge acquisition through social conversations and agreement [2]. Faculty was formed using senior members of the multidisciplinary team. 18 courses have occurred in the last 2 years with in excess of 300 staff attending including consultants, junior doctors, nursing and paramedic staff.

## Methods

Feedback was collected during the course to encourage participant reflection and allow the faculty to evaluate effectiveness and improve future experiences [3]. A self-assessment questionnaire was completed before and after the training using a 5 point scale. Other questions requested open responses to encourage responses which have been categorised. Data from the last five courses has been evaluated in this study.

## References

- Hoffman, K.G and Donaldson, J.F. 2004. Contextual Tensions of the Clinical Environment and their Influence on Teaching and Learning. *Medical Education* 38, pp. 448-454.
- Philpott, J. and Batty, H. 2009. Learning Best Together: Social Constructivism and Global Partnerships in Medical Education. *Medical Education* 43, pp. 923-925.
- Richards, J.T.E. 2005. Instruments for Obtaining Student Feedback: a Review of the Literature. *Assessment and Evaluation in Higher Education* 30(4), pp. 387-415.

## Results

Over the 5 courses feedback was collected from 95 participants. Table 1 shows the responses before and after the course of the participants self assessment in the various categories. The results show a positive trend with an increase in the modal value from 3 to 4 (out of 5) for most categories.

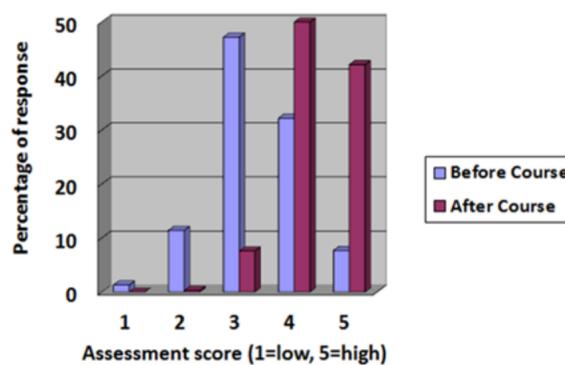


Table 1 showing the participants self assessment on their confidence for the questions before and after the course using a 5 point scale with 1= no value and 5= excellent value.

Before Training						After Training				
1	2	3	4	5	SELF-ASSESSMENT OF KNOWLEDGE AND SKILLS:	1	2	3	4	5
	10%	59%	26%	5%	Structured approach a clinical situation.			2%	58%	40%
	11%	52%	32%	5%	Assessing hierarchy of needs.			7%	46%	47%
	6%	48%	38%	8%	Prioritization.			4%	44%	52%
7%	25%	45%	15%	8%	Structured communication with the help of SBAR / PIER tool.			11%	50%	39%
3%	20%	47%	25%	5%	Confidence in dealing with neonatal clinical emergencies			16%	51%	33%
1%	12%	48%	35%	4%	Using clinical situations to enhance learning and teaching			6%	47%	47%
	5%	32%	52%	11%	Working effectively in a team		1%	6%	44%	49%
1%	12%	49%	31%	7%	Leadership and followership		1%	10%	58%	31%
1%	9%	52%	30%	8%	Giving constructive feedback		1%	10%	60%	29%
	4%	40%	38%	18%	Learning from mistakes			4%	42%	54%

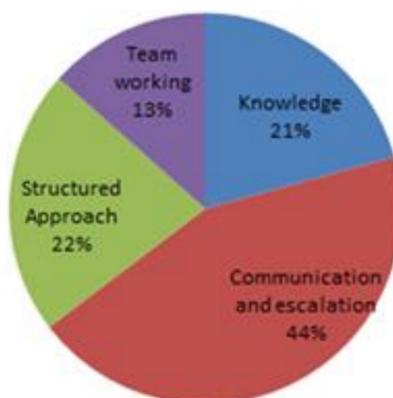
The results from table 1 have been combined showing a positive trend in confidence in managing emergency situations and in team working (shown in figure 1).

Figure 1 showing the Participant self assessment of knowledge and skills before and after the course (n=95).



Candidates were asked to reflect on their key learning outcomes (Figure 2)

Figure 2 showing Participant reflection on the positive outcomes of the course.



92% of participants felt that they could apply what they had learnt in their clinical capacity. The course used the Situation, Background, Assessment and Recommendation (SBAR) handover tool and this was popular with participants in providing a structure they could take back to their workplace.

The importance of knowing how equipment worked and where it was in kept was also highlighted.

Whilst many felt their knowledge had improved, many stated that it was the understanding of the operational and human-factors that is the strength of the course.

## Conclusion

We have demonstrated that a network based multi-professional education programme on neonatal emergencies can be delivered using simulation technology. The evaluation is subjective and we appreciate that the impact of this kind of course can be difficult to measure. We are currently reviewing our patient safety data to observe any change in trends and aim to perform a delayed re-evaluation by the course participants.