

# Simple or sophisticated: how should paediatric simulation training be deployed?

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## Authors:

Fenton O'Leary [1, 2, 4]

Richard Lennon [3]

Ella Scott [1]

Jane Cichero [1, 4]

Leonie Watterson [2, 3, 4]

1. Sydney Children's Hospitals Network ( Randwick and Westmead), Australia
2. Sydney Medical School. University of Sydney. Australia
3. Royal North Shore Hospital, Australia
4. Sydney Clinical Skills and Simulation Centre, Australia

**Contact:** Fenton O'Leary [fenton.oleary@health.nsw.gov.au](mailto:fenton.oleary@health.nsw.gov.au)

## Background

During the last decade our team has been involved in the design and delivery of paediatric simulation programs, servicing several hundred front line health professionals from across rural and metropolitan acute care facilities in Australia. These programs vary in a number of ways including (1) the target participants who vary from novices to experts; (2) their emphasis of simulation educational methods including E learning, practical workshops, simple scenarios, intensive full scale immersive scenarios and debriefing.; (3) their use of modalities including task trainers, simple manikins, sophisticated robotic manikins and actors; (4) the content which spans didactic clinical topics to highly experiential learning about non-technical skills and (5) the scale of the programs which range from small bespoke courses to those intended for state-wide deployment. With considerable choice available to us how do we decide what's best for any group in respect to educational methods and modalities?

## Aim

This presentation provides appraises a suite of validated paediatric training programs deployed over the last decade by a community of instructors associated with a large simulation training centre with the aim of informing educators on instructional design for paediatric simulation.

## Methods

The presentation will be presented as a journey describing the development of six paediatric simulations programs: Paediatric Emergency Trauma and Life Support (PETALS), Paediatric Team Training (PTT), Paediatric Trauma Team Training (PTTT), Paediatric Emergency Medicine Crisis Management (PEMCM), Paediatric In-situ Program and Resus4Kids™. These locally developed courses range from networked programs deployed to large numbers of staff to small bespoke programs designed to meet the particular target groups. An appraisal of the strengths and weaknesses of these will be provided drawing on personal reflection, educational theory and published literature, the latter including BEME guidelines for effective simulation training.

## Results

Evaluation data will be provided including quantitative and qualitative methods. Several themes emerge including the experience of participants and instructors and the importance of mobility and in-situ deployment. A dominant theme is the ingoing tension between the aims of achieving high levels of realism and uniformity. Respectively, these are achieved with sophisticated scripts, intensive involvement from faculty and tolerance of improvisation during scenarios versus tight control of conditions and scenario scripts. The tensions between achieving realism and uniformity mirror those observed by researchers measuring validity and reliability as metrics of validity in educational assessment.

## Conclusions

One of the strengths of simulation-based educational methods is its ability to be easily adapted to respond to specific training needs of learners. In the future the sustainability of these programs will in part be influenced by their ability to be deployed to large numbers of entry level health professionals, favouring simple, scalable programs achieving high reliability in respect to delivery of content. However, small groups of health professionals will continue to have needs for highly specialised training, requiring more focussed content and sophisticated simulation modalities. Ideally, a range of simulation programs should be available representing both ends of the spectrum of scenario-based simulation.

## References

1. Paediatric Emergency Trauma and Life Support (PETALS) developed for staff working within Northern Sydney Local Health Network
2. Paediatric Team Training (PTT) developed by the SCSSC and affiliates on behalf of the Greater Eastern and Southern Child Health Network (GESCHN)
3. Paediatric Trauma Team Training (PTTT) developed by the SCSSC and affiliates on behalf of GESCHN and the NSW Institute for Trauma and Injury Management (ITIM)
4. Paediatric Emergency Medicine Crisis Management (PEMCM) developed as a collaboration between Children's Hospital Westmead, the SCSSC and ITIM.
5. Paediatric In-situ Program developed by the SCSSC and affiliates on behalf of GESCHN and the NSW Institute for Trauma and Injury Management (ITIM)
6. RESUS4KIDS developed by Western Sydney Child Health Network (WESCHN)
7. Issenberg, S.B, McGaghie, WC, Petrusa, ER. BEME Guide 4: Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review.  
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