

HNE SIMULATION CENTRE



Safer health care through training and research excellence using simulation

OVERVIEW



Who we are

The Hunter New England Simulation Centre (HNE SC) is a world-class educational facility that delivers training to several thousand participants each year. The centre is supported by a team of 35 specialist doctors and senior nurses who are trained simulation instructors and clinically active in the specialty areas of anaesthesia, intensive care (adult, paediatric and neonatal) and emergency medicine. The faculty is passionate about enhancing patient safety through simulation training and research.

About the centre

Established in 2002, the HNE Simulation Centre is one of the longest running centres in Australia. It underwent a \$2.8 million refurbishment in 2013 and now operates from a state-of-the-art facility with the latest equipment including a replica emergency department/intensive care unit and operating theatre.

Our mission

Our goal is to enhance patient safety and clinical outcomes by integrating innovative clinical training using simulation based techniques with research that explores individuals, teams and systems.

What we do

Training

We provide simulation-based training that addresses clinical and non-clinical challenges with the overall aim of enhancing patient and staff safety, minimising adverse events, and ensuring fitness to function as part of a team. The centre offers more than 65 different courses including instructor training, and advanced communications programs. These courses include inter-professional team training focussing on communication, leadership, decision-making and resource management, specialised skills training, including advanced airway skills, and niche courses for defined groups e.g. procedural sedation training for endoscopists. In addition, we offer bespoke courses tailor made for specific participant groups.

Research

Our multidisciplinary faculty have a track record in innovation and research. We conduct human factors research that aims to improve patient safety by developing new tools to use in crisis situations, and testing new processes and equipment prior to their implementation into clinical practice. We also conduct research into why and how simulation works as a teaching tool and are particularly interested in understanding which elements of a clinical encounter should be retained in a simulated encounter.

Support for Simulation

The centre also provides support for simulation-based training including instructor and faculty development, curriculum development and evaluation, and advice regarding the establishment and running of simulation centres.

Our facility

Our facility is a highly flexible space that incorporates two clinical simulation spaces and five flexible areas, including two debriefing rooms suitable for advanced communications training.

The facility is supported by a fully integrated audiovisual system. We use B-Line Medical (a video coding system suitable for research purposes) to manage our video data by capturing vision, sound, instructor and course details.



Teaching methodologies and technologies

The HNE SC provides a diverse range of courses employing a number of simulation methodologies and technologies suited to the needs of each program.

Methodologies

- Bench top skills training
- Pause and discuss (in-simulation debriefing) type simulation
- Role-play
- Full mission simulation, including Crisis Resource Management style simulation, with instructor facilitated post-simulation debriefing
- Advanced communication training employing combination of role-play and full mission simulation



HNE Simulation Centre Overview



Technologies

- Screen based simulators
- Part-task trainers
- Computerised mannequins
- Standardised patients

We have accumulated considerable expertise in the delivery of inter-professional, interdisciplinary training and have an inter-professional, inter-disciplinary group of faculty and instructors.



Our participants

In 2014, 4000 participants (students and staff) were trained in the centre. This included teams and individuals of all levels of seniority from the following services/units:

- Women's Health
- Child Health, including Neonatal Intensive Care
- Mental Health
- Community Practice, including GP Anaesthetists, GP Surgeons, Nurse Practitioners
- Emergency Department
- Intensive Care
- Operating Theatre, including Anaesthesia & Surgery
- Medicine, including diagnostic procedures
- Imaging (radiology, nuclear medicine)
- Hospital ward emergencies
- Private practice or private hospital teams



Simulation: enhancing patient safety in HNE Health

Our equipment

Our family of Laerdal newborn, infant, child and adult mannequins includes SimNewB®, SimBaby®, SimJunior®, SimMan®, SimMan3G® and SimMom®.

We also have a family of METI mannequins including PediaSIM ECS, PediaSIM HPS and METI HPS. The ultra-sophisticated METI HPS is one of only three in NSW, and PediaSIM HPS is one of only two in Australia and New Zealand. These are the only simulators on the current market able to respond to the administration of real anaesthetic gases, and to provide respiratory gas exchange.

Clinical equipment in our replica operating theatre, ICU/emergency department and wards includes:

- piped gases
- Sonosite M-turbo ultrasound
- GE Aisys electronic anaesthesia machine
- fibre-optic and video bronchoscopes
- video-laryngoscopes
- defibrillators
- warming devices
- infusion pumps
- ventilators

Our other specialised educational equipment includes:

- Ventriloscope (transmits heart & lung sounds to a realistic stethoscope receiver)
- iSimulate (a pair of iPads that operate as a patient monitor and instructor controller for mobile use, or use with standardised patients),
- Smartboards and video-conferencing facilities



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