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| SGV 541 as RGB - 2cm wide at 300dpi1009016 VCP A4 newsletter portrait_Word setup topCase studySimulated Learning Environments Program  |

Provision of a low/medium-fidelity simulation environment for teaching and learning in healthcare

Background

The project proposal was to create a teaching and learning environment where low-fidelity simulation (to the extent that this refers to the use of strategies such as basic written case studies, role playing, and administration of injections using partial task trainers) and medium fidelity simulation (to the extent that this refers to the use of more realism but without the automatic cues such as the rise of the chest on inspiration or pupillary constriction from an administered medication needed for complete realism) could be used as a supplementary method for teaching students on clinical placement and promote experiential learning without risk to students or patients; i.e. deliberate practice in a controlled setting. The project also provided an impetus for close collaboration with key education provider partners to analyse curricula and evaluate simulation within their placement models.

Problems/drivers

Health education stakeholders have been engaged in recent years to address the challenge of improving the capacity and efficiency of clinical training through innovative solutions. There is considerable evidence, supported by experience in the use of simulation worldwide, that learning in simulated environments can provide a safe and more controllable setting for components of clinical education. The opportunity to move a proportion of clinical placement activities away from the clinical interface into a simulated learning environment created opportunities for growth in clinical placement capacity. Simulation environments are often high fidelity, this project provided the opportunity to develop low to medium fidelity simulation.

Arriving at a solution

Initial input was sought from education provider partners prior to clinical placements commencing in regard to suitable activities that could be targeted using simulation-based education (SBE). Three University partners engaged in discussions. All were in favour of using simulation within the clinical placement context as a value-adding modality for students and all were forthcoming with suggestions of activities to be offered.

Careful planning and coordination followed these initial conversations with academic staff. The design of appropriate content was approached via:

* Face-to-face meetings with academic staff wherever possible;
* Mapping 2013 clinical placements in seven professions – nursing, midwifery, physiotherapy, occupational therapy, speech pathology, podiatry and social work;
* Analysis of semester course content for student groups;
* Familiarisation with learning tools specific to upcoming placements;
* Needs analysis discussions with clinical facilitators and educators in the health service;
* Familiarisation with clinical skills aligned to particular year levels for student groups; and

Identification of activities that lent themselves to teaching with interprofessional student groups.

Implementation process

Two SBET spaces were created with the refurbishment of former ward areas at McKellar Centre and Geelong Hospital. Part task trainers and other equipment were purchased to create flexible learning spaces with a range of assets for scenario delivery. Simulated learning activities were developed and targeted clinical skills in alignment with the student groups’ current curricula and skills that they might not be exposed to routinely during clinical placement (e.g. transfusion of blood products, nasogastric tube insertion, airway suctioning, delivering information to next of kin as part of a family meeting).

From 1 January to 30 June 2013, the project delivered 38 simulation sessions to entry-level student groups; a total of 511.5 hours of face-to-face simulation activity. Of this, 166 hours (33%) were delivered as interprofessional simulation activity.

Outcomes

Written feedback from students who participated in the simulation activities demonstrated a high level of satisfaction with the SBET offered. Evaluation of the student surveys collected (n=180) showed:

* 87% of participants agreed the simulation activities added value to their clinical placement;
* 90% rated the simulation activities positively; and

91% felt activities were aligned with what they were learning at university and on clinical placement.

Qualitative feedback from student participants demonstrated learning across multiple skill domains.

Table 1: Examples of feedback from entry-level students

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| Psychomotor domain | Cognitive domain |
| “I learned how to teach a patient to transfer up a flight of steps or get up off the floor.”“I learned a better way to conduct an abdominal palp exam.”“I learned sterile suctioning technique.”“It was good to practice the placement of cardiac leads for an ECG.” “I learned how to call a MET call.” | “I learned how to manage multiple medication orders (IV) and work out the order of administration.”“I learned that O2 should be administered as soon as chest pain presents. I need to check blood pressure and pain every 5 minutes.”“I learnt some new information and could go away with ideas to look up more about Speech Therapy with Parkinson’s Disease clients.” |
| Interpersonal/affective domain | Analytical domain |
| “This was good to talk over what the nurses, physios and OTs roles are in mobilising patients.”“I learned that with paediatrics you need to look after the parent as well.” “I learned how important it is to listen to the woman, and that women-centred care means working with the woman for the best outcome.”“I got feedback from the patient’s perspective (simulated patient).” | “I learned how to remain calm and in control in confronting situations.”“This was good for on-the-spot problem solving.”“I learned the importance of acting early and teamwork.”“It was good to learn about real-life experiences and try to think outside the box.”“I learned how to be in control in a stressful situation.” |

* “Emotional aspects cause events to stick. We won’t forget this.”

“Very valuable. Practical is always better and having a real person (simulated patient) is great. This scenario will stick in all our heads.”

Clinical facilitators/educators contributed to evaluation of the transferability of the student’s learning from the simulation activities to other clinical placement experiences. In terms of transferability of skills, anecdotal feedback was promising:

* “The feedback is all very positive. The students appear to be able to apply the simulations to real world cases.”

“The students tell me they are using what they have learned [in the simulation activities] with their patients on the ward which is really helpful.”

Barriers and solutions

The hours agreed to by the primary education provider in nursing posed a significant limitation to increasing capacity for clinical placements through simulation. For nursing, time spent in simulation activities as part of clinical placement was not counted towards clinical hours and, given entry-level nursing has very little margin for absence in their current allocation of clinical hours to meet the requirements for professional registration, the capacity was minimal. Nursing student participation in the simulation scenarios was capped by the university at two hours per student for those students on a four-week clinical placement. At a stakeholder level, the value of simulated learning during clinical placement time was questioned, with direct patient contact being the preference over any other form of learning activity. In contrast, midwifery was keen to embrace and extend SBE activities for students whilst on clinical placement to supplement and reinforce their patient experiences. In addition, several allied health disciplines offered more opportunity in this regard (e.g. physiotherapy, occupational therapy). As the education providers for midwifery and allied health all acknowledged simulation as a clinical activity whilst on placement, this provided a potential capacity-building mechanism. Many allied health and midwifery students participated in two to four hours per week of scenario-based simulations whilst on clinical placement (between April and June 2013).

Logistics and scheduling to organise the simulation activities was a barrier. Mapping exercises were crucial to assist scheduling, but nevertheless the implementation of scenario-based simulation was challenged at times by factors including:

* diverse clinical placement geography and travel between health service sites;
* last-minute cancellation by facilitators/educators citing other clinical priorities;
* over-subscription without notification resulting in a large group of observers;
* miscommunication due to inefficiencies in relaying information to staff; and

lack of uptake of simulation techniques by some facilitators/educators.

The project was in delivery mode for only half the calendar year (January to June 2013) limiting the exposure to groups of students on clinical placement which impacted the simulation education hours able to be achieved.

Future directions

Ongoing dialogue with current workforce and education providers concerning the application of simulation during clinical placements with entry-level students is necessary. Further engagement and collaboration with the wider simulation community at state and national levels will support simulation as a learning tool at Barwon Health. Several strategies have been introduced to continue the work that has been established in the current project. Support for the continued growth and acceptance of simulation as a teaching method will build capacity for future workforce training at Barwon Health.

Further information

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