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Simulated Learning Environment (SLE)   
integration and development project for the   
Loddon Mallee region

Submitted by:

Monash University

School of Rural Health – Bendigo and Mildura

In partnership with:

Bendigo Health Care Group

La Trobe University

Bendigo TAFE

**September 2013**

Definitions

For the purpose of the report, please use the definitions and explanations below:

Simulation

Learning methods provided in Simulated Learning Environments which support experiential learning. Key components of experiential learning include:

* The learner interacts with a simulated or controlled real environment;
* A high proportion of the learning activities enact activities and tasks representative of the learner’s real world responsibilities;

The environment needs to be sufficiently realistic for experiential learning to occur. Depending upon the learning objectives, realism can be built into the equipment, the surrounding environment or the overall integration of equipment, environment and interactions between learners and instructors.

Students

Students are participants in eligible simulation programs which may include professional entry-level courses, postgraduate and VET sector courses and ongoing professional development.

Total number of simulation education hours

The total number of simulation education hours is reported over the life of the project for the purposes of measuring the baseline and growth of simulation activity across all projects covered by this funding agreement. The calculation for counting the total number of simulation education hours is as follows:

**Calculation:** As an example, if a simulation course, workshop or other form of simulation education program runs for a duration of eight hours and there are ten participants/students, the total number of simulation hours for that course or workshop is 80. All courses, workshops or other forms of simulation education programs delivered through the project during the period to which this report relates, should be included in this calculation of total number of simulation education hours.

Please calculate the growth in simulation education hours for the project using the baseline simulation education hours previously reported.

Rural and remote

For the purpose of these reports, use the AGSC RA (Remote Area Classifications) used by the Department of Health and Ageing.

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| RA1 | Major Cities of Australia |
| RA2 | Inner Regional Australia |
| RA3 | Outer Regional Australia |
| RA4 | Remote Australia |
| RA5 | Very Remote Australia |

RA2 and RA3 are rural and are in scope for this report. RA4 and RA5 are remote and are in scope for this report.

The definitions can be found at: [www.health.gov.au/internet/otd/publishing.nsf/content/ra-intro](http://www.health.gov.au/internet/otd/publishing.nsf/content/ra-intro)

To find the classification for a specific locality, click on the above link and select ‘What is the RA classification of my locality?’ Click on the available link and enter the postcode for the locality.

Interprofessional learning

Interprofessional education occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcome.

Executive summary

The purpose of the Simulated Learning Environment (SLE) integration and development project for the Loddon Mallee (LM) region was to develop two integrated regional hubs in Bendigo and Mildura from which the SLE needs of the students who completed placements and for clinicians who delivered services and clinical supervision to professional-entry students. The project brought together Monash University’s Mildura and Bendigo Regional Clinical Schools and La Trobe University’s Rural Health School in Bendigo to develop and deliver a quality offering of clinical simulation options to medical, nursing, midwifery and physiotherapy students and clinicians during the project term. Bendigo Health supported the project as a partner by employing a project coordinator and Bendigo Regional Institute of TAFE served as a reference point to ensure the interests of the VET sector were appropriately catered for.

The project partners delivered 52 809 hours of professional entry simulation hours to 2845 students during the project period, which represents a 58% increase in clinical simulation hours in the LM region as a direct result of the project.

In addition to this, the project partners committed to delivering up to four simulation days to twenty health services throughout the LM region. This served to reliably meet the needs of the regions clinical simulation education from the regional hubs rather than trying to resource and educate twenty health services to deliver their own clinical simulation sessions. As a result, the project partners delivered 6835 hours of simulation to1570 clinicians during the project period, which introduced clinical simulation to post graduate clinicians in the LM region.

The relationships built with the twenty LM health service partners and the strengthening of collaboration within the Clinical Placement Network (CPN) is consistent with the purposes of the Integrated Regional Clinical Training Networks (IRCTN) initiative and the Victorian Government Department of Health’s SLE Strategic Plan.

All clinical simulation delivered during the project period was evaluated by participants on completion of the training received and results entered and analysed with Survey Monkey. Evaluation results were reviewed by senior management and the education team at monthly intervals to ensure quality targets were met and maintained throughout the project period. The robust and ongoing nature of this evaluation and review is considered a key strength of the project in tracking progress and implementing a continuous improvement approach to ensure the quality and relevance of SLE sessions, scenarios and the curriculum in meeting identified needs.

At the time of writing this final report, Health Workforce Australia (HWA) has funded a subsequent regional SLE collaborative program in the LM region with an 80:20 professional entry clinical student to postgraduate model. This continued investment will see projected increases comparable to those achieved during this project.

However, with sustainability at the forefront of the project partner’s considerations throughout the project, the following amendments to the business model will be made:

* Each of the higher education partners have agreed to coordinate their own in-house simulation session bookings into the future and utilise the SimBook website developed for the LM region to manage simulation education session spaces and training bookings. This reduces the need for a 1.0 FTE coordinator position to 0.5 FTE.
* VET sector education providers will continue to deliver their simulation training as part of their regular training program at no additional cost to the delivery.
* Health services will contribute towards the training of post graduate health professionals on a cost-recovery basis in 2013 and beyond.
* Health services will access the regional hub simulation labs on an in-reach basis to reduce travel and accommodation costs associated with outreach services, or they will cover these costs themselves if an outreach model is their preferred option.

It is this self-sufficiency and lean business model which will deliver sustainability into the future.

Background and context

The SLE integration and development project was developed in response to an SLE needs analysis of the region which took into consideration the equipment, educator skill set and critical masses required to establish and maintain simulation resources to adequately service the entire region. Through this process it was identified that the critical mass of professional-entry students, clinicians and educators resided in the two regional centres: Mildura and Bendigo. As a result, it was decided that the most sustainable model would be to establish the SLE resources in these two regional hubs and then service the region on an outreach and in-reach basis.

The Mildura hub had an established SLE centre but identified gaps in equipment resources. The SLE capital and establishment fund enabled the Monash Bendigo hub to build, fit-out and resource a state-of-the-art clinical skills and simulation centre. La Trobe was in the process of building its own clinical placement building with SLE facilities on the Bendigo Health Education and Research Precinct site and had a need for equipment resources this need was met by the capital and establishment program.

Monash’s Schools of Rural Health (Mildura and Bendigo) and La Trobe’s School of Rural Health Bendigo set about delivering SLE education to their own enrolled students three days a week with the new resources, while providing outreach SLE education in the region one day a week and making the SLE facilities available to local health services the remaining one day a week on an in-reach basis. This commitment from La Trobe and Monash to deliver two days per week each (four in total) of SLE training to health services throughout the region was the basis on which the region was happy to support a region-wide SLE project approach as distinct from seeking as many resources for themselves as possible.

Concurrently, the LM CPN Governance Committee worked with the Senior Management Committee to embed sustainable and efficient processes that could be replicated throughout the region.

With respect to the capital works’ build at Monash Bendigo, a Project Control Group consisting of representatives from Monash, Bendigo Health Care Group and an architectural firm met on a monthly basis to manage the building project. This achieved the project’s target of being completed on time and on budget.

Project objectives and expected impacts

Project objectives

1. To supplement the current SLE capacity (human resources, infrastructure and equipment) already available in participating health service and educational institutions, with the additional resources needed to establish an integrated SLE for the LM region that includes hubs in Bendigo and Mildura, and an out(in)reach program for health services throughout the region.

2. To resource the Bendigo and Mildura SLE hubs with human resources, infrastructure and equipment of equivalent quality to those available to health professional students and health service communities in metropolitan and regional Victoria outside the LM CPN.

3. To service the anticipated simulation educational needs of the consortium partners in the LM CPN using an efficient and appropriate hub-and-spoke model.

4. The establishment of a multi-institutional governance structure that will maximise usage of, and provide equitable access to, simulated learning opportunities for health professional students placed in the LM region.

5. To monitor data relating to equipment usage, education and people management to track delivery hours’ progress, evaluate performance and make improvements.

6. To co-fund the strategy with sustainable ongoing funding commitments from the participating universities at a level at least equivalent to existing simulation costs in this region with a ‘user-pays’ contribution from participants and/or their health service employers/VET sector education providers on an ‘as needs’ basis.

Expected impacts

1. Establishment of enhanced multi-institutional capacity for simulation education for the training of professional entry and other learners in health professions in Bendigo, Mildura and affiliated smaller centres throughout the LM region CPN.

2. Establishment of a platform for multi-professional and interprofessional education in a wide range of settings through multi-institutional participation and ownership of this simulated learning environment model.

3. Improvement in quality, efficiency and safety of clinical education for health professions through clinical preparation and practice in simulated environments before and during their clinical placements.

4. Provision of contextualised and safe simulated learning environments to assist in providing clinical education for an increasing number of health professional students.

5. More efficient use of student clinical placements through curriculum development and planning that incorporates the enhanced simulated learning environment.

6. Growth in clinical education capacity and expertise on the Bendigo and Mildura campuses to support and develop simulated learning in Bendigo, Mildura and the LM CPN.

Project management

Project management/governance, including staff changes

A collaborative agreement contract between the project lead (Monash University) and the project partners (La Trobe University, Bendigo Health and Bendigo Regional Institute of TAFE) were completed at the end of May 2012. This project submitted reports on a monthly basis to the LM CPN, where members had an opportunity to flag any concerns and raise queries relating to the project and its progress. A Senior Managers’ Committee was established and met on a monthly basis. Terms of Reference were clearly outlined and relevant to this group. An Educators’ Committee was also established and met on a regular basis to allow for the planning and development of the specific education resources in response to a detailed needs analysis and review process.

Staffing

An SLE Coordinator was employed and commenced on the 6 August, 2012. The education team, consisting of educators and technicians, were recruited by each hub and university. The employment contracts were mixed and mostly driven by finite funding arrangements. The universities’ policies restricted employment to sessional staff and to short term contracts. Where possible, SLE educators were employed full-time and SLE technicians were employed part-time, as budgeted in the original proposal.

There were some delays to employment. However, performance and budget targets were met by successfully purchasing additional casual staff to deliver the projected outcomes in short timeframes where required. This meant extra staff training which the hubs fulfilled.

Stakeholder engagement and consultations

Stakeholder engagement was first established through our CPN in the pre-funding stage. Our Project Coordinator made between two and four visits to every site in 2012 and 2013 to carry out consultations regarding education hours and scheduling and to conduct face-to-face interviews evaluating the overall benefits and drawbacks of the SLE project.

The education teams had regular contact with staff from each of the twenty health services they were providing SLE education to conduct pre-session consultations regarding scenario content, training needs and pedagogy.

Throughout the project’s timeframe two forums were held, one through the CPN in December 2012 and one based in Bendigo at Monash University in February 2013.

A total of thirty-eight educators from the LM region participated in the National Health Education and Training in Simulation (NHET-Sim) training.

Budget

All funding budgeted for, and received, was expended as per the funding acquittal submitted as part of this report. Any unspent funds resulting from delays to recruitment of positions were used to increase the FTE of staff to deliver projected SLE education within shorter timeframes.

Funding transfers between the project partners were made according to a collaborative agreement signed by all parties at commencement of the project.

The budget was lean in comparison to the amount of training delivered during the project period. This will only serve the ongoing sustainability of the project if funding is reduced over time, as the project partners have had to run the project using lean-business principles.

Timelines

The Bendigo hub utilised two brand new facilities from January 2013 within the area known as the Bendigo Health Care Group Education Precinct where the two University buildings and staffing are based. This has significantly increased the accessibility and use of simulation for clinicians and students in Bendigo.

The specialised simulation equipment was purchased by each hub and the majority of equipment was delivered in October 2012. The remaining items were delivered by the end of December 2012. Laerdal had some production delays which affected the Monash Bendigo site only.

Equipment could not be used by educators prior to the Laerdal training otherwise warranties would have been void. Delays from Laerdal in delivering this training resulted in training sessions being modified. The last training provided by Laerdal to Monash Bendigo staff was not until March 2013.

Despite the delays to accessing the new buildings and equipment growth in clinical simulation, activity exceeded projections throughout the project period. This was achieved through the use of existing equipment and providing more training within compressed timeframes.

Project activities and methodology – performance against stated deliverables

The LM SLE project has been harmonised to each hub and site within the hubs. Monash primarily supported medical student education for 60% of the time and interprofessional (mostly nursing discipline) education for the remaining 40% of other learner education time. La Trobe supported a mix of nursing and allied health student education as the 60% split and the remaining 40% of other learner sessions were delivered to nursing, paramedicine and physiotherapy. The nursing profession was the primary discipline accessing the offer of in-reach and outreach simulation based learning from this project.

Human resources risks were encountered in the early phase of staff recruitment. People with suitable skills’ experience and mix of real experience as simulation technicians were not easily found in the regional and rural settings. More time had to be allowed for training on the job and also educators were required to fill the void at times at a more expensive hourly rate. The half-time technician has been a limiting resource factor for some hubs and this role should ideally have been a full-time position. The pressure and workload on educators has been higher than ideal as a result.

A further early risk was the lack of lead time to schedule bookings for simulations. Despite this, the project coordinator was able to schedule 100% of the expected sessions across the region with twenty-four health services by December 2012. A scheduling issue was faced again in 2013 as January and February are difficult months for making contact with key health service personnel on leave. The scheduled sessions therefore had to be booked from March through to early June as a result. This added pressure to the education team’s timetables in 2013. Having the project running separately from the normal student program in terms of systems and scheduling was a major downside with respect to coordination and administration. Staff at each site ended up spending too much time trying to understand the requirements for the deliverables and how to work out what amount of time was the right amount to spend on each activity. The new business model orientates SLE activity around professional-entry students and therefore this scheduling issue has been resolved.

Cancellations were considered a major risk at the beginning of this project but in fact were minimal. The project had eight cancellations overall in the Bendigo hub for the duration of the project with a 50/50 split between health services or universities causing the cancellation. All but one was successfully re-scheduled. (The last health service did not take up the option of re-scheduling their missed session.) In the Mildura hub the only cancellations were from the weekly pre-scheduled session set aside for the Mildura Base Hospital. This course of weekly pre-scheduling sessions was not successful due to the Hospital’s priorities for staff around patient-care and quality health services as well as practical constraints making it difficult for staff to go off-site (even for a short distance to an adjacent campus) to take part in weekly training.

Another key risk for this project was not having allocated project manager time in the fixed term funding. This was provided on an ‘in-kind’ basis by a 0.4 FTE by Monash Bendigo via a suitably qualified and experienced project manager with workload incorporated into their usual role.

Quality delivery across the region was considered a risk by the SLE education team early in the project and a prevention strategy was put in place to maintain a high standard. One single curriculum with multiple scenarios was developed by the education team and implemented across the region based on the theme of the ‘deteriorating patient’. The scenarios were written for each health service according to agreed and desired outcomes of the training. These outcomes were defined through educator discussions. Curriculum design proved to be an element that was unfunded in terms of allocation of adequate staffing resources and as a result the universities offered this service on an ‘in-kind basis’ as it could not be omitted.

The booking system for this whole-of-region project was considered a risk factor in terms of being administratively intensive and difficult to maintain on a lean budget. An online web-based booking system designed to meet the needs of students and health services, multiple hub sites, multiple universities and multiple TAFE’s was explored. The SimBook website is now available for use by the Hume and LM regions. It was decided to include the two regions to share the costs as a sustainable budget strategy for hosting, upgrades and administration. The challenges of multiple universities managing one website across two regions will be resolved through the local partner relationships.

Project activities

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| Project activity | Project deliverable | Due date | Achieved / not achieved |
| Establishment of SLE Governance Committee | Progress and final reporting | 1 July 2012, 10 December 2012, 1 June 2013 | Achieved |
| Establish a consistent and accessible method to book SLE facilities and equipment capable of reporting usage and availability | SLE usage and availability statistics in progress and final reporting | 1 July 2012, 10 December 2012, 1 June 2013 | Achieved |
| Implementation of the Regional Simulation Out(In)reach Service | Progress and final reporting on education provided to stakeholder services | 1 July 2012, 10 December 2012, 1 June 2013 | Achieved |
| Employ 1FTE SLE Educator – Bendigo | Progress and final reporting | 1 July 2012, 10 December 2012, 1 June 2013 | Achieved |
| Employ 1FTE SLE Technician – Bendigo | Progress and final reporting | 1 July 2012, 10 December 2012, 1 June 2013 | Achieved |
| Employ 0.9 SLE Coordinator – Bendigo | Progress and final reporting | 1 July 2012, 10 December 2012, 1 June 2013 | Achieved |
| Employ 0.5 SLE Technician – Mildura | Progress and final reporting | 1 July 2012, 10 December 2012, 1 June 2013 | Achieved |
| Employ 1FTE SLE Educator - Mildura | Progress and final reporting | 1 July 2012, 10 December 2012, 1 June 2013 | Achieved |

Project outcomes and discussion

Overall, the LM SLE project was successful. The key elements attributed to this success are:

* The engagement of twenty health services in the region,
* close working relationships with the LM CPN,
* the deliberate set up of two hubs to cover the region via Mildura and Bendigo; and

sound pedagogy being applied to the sessions delivered by expert and highly trained university educator teams.

Overall, this project enabled health facilities to:

* Utilise already purchased simulation equipment,
* increase clinical training capacity,
* identify the educational needs of their staff,
* through continuous improvement, increase the quality of their education; and

deliver simulation education locally, preventing unnecessary travel demands.

The major advantage which has been identified most importantly is the ability to deliver higher quality care to patients.

Summary

The LM SLE project demonstrated it has increased the use of simulated learning modalities in clinical training for entry-level health professionals, postgraduate and vocational education and training health professionals overall from 1243 participants in 2011 to 8413 participants having attended SLE education sessions of two hours or more by June 2013.

The LM SLE project established education teams who were able to successfully optimise clinical training experiences through the use of simulated environments to develop clinical skills and competencies required by health professionals on both an outreach and in-reach basis. This component of the project brief was addressed by thorough needs analysis, bi-annual visits to all twenty health services to discuss and plan training schedules, the development of a purpose designed curriculum for the ‘deteriorating patient’, pre and post-simulation sessions, SLE session evaluation and participant feedback from sessions. The extensive outreach efforts ensured the actual delivery targets were met for this project.

The LM SLE project, through the additional assistance of ‘capital and establishment’ funding, has invested in the building of a Clinical Skills and Simulation Centre at Monash Bendigo via the capital works sub project. The Mildura and Bendigo hubs were provided funding for key assets such as mannequins, AV technologies and other equipment essential to providing hi-fidelity as well as low and medium-fidelity simulation training sessions. Other sources of funding have assisted both universities to provide equity of access for students to simulated training experiences in regional, rural and remote settings from late 2012. The schools for rural health across universities also have a complimentary and ongoing brief to provide access and equity for their students based in rural sites.

The project has clearly improved quality and consistency of clinical training through up-skilling educators (both health service and university-based) and technical staff via specific training e.g. NHET-Sim; the purchase of state-of-the-art equipment through this project; AV technologies and the new built environments with well-designed simulation spaces within teaching centres across the LM region.

Project objectives

Objective 1

To supplement the current SLE capacity (human resources, infrastructure and equipment), already available in participating health service and educational institutions, with the additional resources needed to establish an integrated SLE for the LM region that includes hubs in Bendigo and Mildura, and an out(in)reach program for health services throughout the region.

Outcome 1

The LM SLE project expended all funds on the establishment and resourcing of the two regional hubs in Mildura and Bendigo as proposed in the combined fixed term and capital and establishment project funds.

Objective 2

To resource the Bendigo and Mildura SLE hubs with human resources, infrastructure and equipment of equivalent quality to those available to health professional students and health service communities in metropolitan and regional Victoria outside the LM CPN.

Outcome 2

Site visits to make comparisons and canvassing of resources across other CPN regions was carried out, professional development was promoted and all project educators attended the NHET-Sim training.

Objective 3

To service the anticipated simulation educational needs of the consortium partners in the LM CPN using an efficient and appropriate hub-and-spoke model.

Outcome 3

All sessions offered in the hub-and-spoke model for this project were taken up with very good attendance rates at 90%. Satisfaction levels were reported at 89.5%.

Our region experienced an overall total increase of 52.5% in clinical simulation hours throughout the eighteen-month timeline of this project.

Objective 4

The establishment of a multi-institutional governance structure that will maximise usage of, and provide equitable access to, simulated learning opportunities for health professional students placed in the LM region.

Outcome 4

The multi-institutional governance structure implemented has contributed to a significant increase in the number of SLE hours being delivered to professional-entry students and clinicians throughout the LM region. During the project period, the SLE sessions were delivered across a total of twenty-six organisations to 8413 participants and for a total 64 906 hours. This represents an increase of 52.5% in simulation education hours delivered and an increase six-fold in total participant numbers (combined entry-to-practice students and other learners) compared to the 2011 LM SLE baseline figures for the region.

Objective 5

To monitor data relating to equipment usage, education and people management to track progress evaluate performance and make improvements.

Outcome 5

Throughout the term of the project, all SLE education delivered was recorded, evaluated and equipment tracked. The Senior Management Group and the SLE Educators reviewed SLE training evaluation on a quarterly basis to ensure training remained relevant and any training deficits identified were addressed in a timely manner. This approach saw the project receive an average overall satisfaction rating of 89.5% throughout the project period. This level of satisfaction has lead regional health services to see the benefits of simulation and it is anticipated that this will result in a greater willingness to pay a service fee for SLE training in 2013.

Objective 6

To co-fund the strategy with sustainable ongoing funding commitments from the participating universities at a level at least equivalent to existing simulation costs in this region with a ‘user-pays’ contribution from participants and/or their health service employers/VET sector education providers on a needs basis.

Outcome 6

Monash School of Rural Health Mildura and La Trobe University’s School of Rural Health continued to contribute university funds at 2011 levels throughout the project term for simulation related activity while Monash School of Rural health Bendigo actually increased its ongoing contribution to SLE costs in 2013. A fee-for-service model has been established in 2013 and is being delivered on a demand led basis which is currently sustainable through lean business practices by the project partners.

Sustainability

The project sustainability plan involved a pricing model for a ‘user pays’ system for activity beyond the scope of the funding, a booking system across locations and a model to address transport costs for outreach, staff training and staffing. In addition, the project has sought ways to increase efficiency.

Efficiency gains

* Simulation activities relating to professional entry clinical students will be increased to 80% while other learner simulation sessions will be reduced to 20% of the total funded SLE activity conducted by the SLE education team throughout the region in 2013. This will reduce the unproductive costs associated with travel intra-regionally, while still growing the amount of SLE education and training delivered to the region overall.
* Sharing education resources across hubs and partners has merit in that it will continue to increase productivity of the valuable educator team.
* Sharing policy and procedures and other administration documents will continue to mean the stretched professional administration teams across sites save time and experience increased productivity.

Partners have agreed to coordinate their simulation session bookings ‘in-house’ into the future and utilise the SimBook website developed for the LM region to manage simulation education sessions, spaces and bookings. This allows for a 1.0 FTE project coordinator position to reduce to 0.5 FTE.

User-pays system

While a fee-for-service (user-pays) model may dissuade some potential users, the project partners have developed a model based solely on cost recovery pricing. This fee-for-service model has been introduced in 2013 and is in place for all activities that are not funded by other sources and for those activities that do not fall within the scope of funded projects. The main elements of the user-pays model are staffing (hourly rates), equipment maintenance, transportation (outreach only) and infrastructure costs (in-reach only). Bookings for the user-pays model are pre-determined on the availability of staff (i.e. educators, technicians and administrative staff) for in-house or outreach SLE activities. This work is built into their substantive workloads or utilises the recruitment of qualified sessional educators.

Indicative fees for room hire range from $200 to $600 per half-day depending on the type of simulation space and equipment per room. This indicative fee does not include education time or GST.

Equipment and technology sustainability plan

* SimMan 3G and SimMan Essentials (Bleeding) were high-fidelity purchases. The high usage rate of these mannequins will contribute to their wear and tear. An extensive maintenance program has been negotiated with Laerdal. All education and technical staff have completed Laerdal training for SimMan 3G and SimMan Essential (five-day sessions) to ensure quality care of these high-fidelity equipment items is maintained. Online learning programs are also available to our staff with regard to technical support from Laerdal which serves as a refresher and reduces downtime of staff to travel to attend training.

Interdisciplinary team teaching for other learners: The education team has worked collaboratively with Bendigo Health emergency, anaesthetic and ICU physicians to team teach in simulations for other learners. Many of these sessions have included senior medical and nursing staff. The efficient utilisation of senior medical staff and co-teaching for simulations has decreased the burden on the teaching team. Overall, this has increased the teaching capacity of the SLE team and allows for more than one simulation scenario to be performed at the same time. The SLE team endeavours to continue this collaborative relationship with Bendigo Health throughout 2013 and into 2014.

Scenario development

The project’s educator team has developed a suite of scenarios which will save them time in the future in terms of curriculum design and planning specific sessions or lesson plans. Some of these scenarios are available for viewing on viCPortal (<https://vicportal.net.au/vicportal/>):

* ALS Curriculum Module: LM Monash University, SLE Fixed Term
* Scenario Acute Pulmonary Oedema: LM Monash University, SLE Fixed Term
* Interdisciplinary Rural Simulation: LM Monash University, SLE Fixed Term
* BLS AED Training Package: LM Monash University, SLE Fixed Term
* Scenario Confused Patient: LM Monash University, SLE Fixed Term
* Implanted Venous Ports: LM Monash University, SLE Fixed Term
* Vascular Access Device Setup: LM Monash University, SLE Fixed Term
* PICC Line Presentation: LM Monash University, SLE Fixed Term

Immersive APO Scenario: LM Monash University, SLE Fixed Term

Limitations and solutions

The limitations and challenges encountered by the LM SLE team were:

* Delays in purchasing and delivery meant that training delivery was also delayed. The project partners increased administrative and educator FTE in the first-half of the 2012/13 financial year commensurate with the unspent fixed term funding. This ensured that the SLE outreach education objectives were met despite the shorter time frames.
* The short-term (twelve months) contracts offered for the SLE technician roles meant it was difficult to recruit to these positions. As a result technicians were employed on a casual basis initially to support training demand. Eventually these positions were filled with longer or more substantive hours in their contracts for the technicians.
* The specialist nature of the technician role markedly reduced the pool of people in our region which were available for recruitment and were adequately skilled up front to do the job.
* Audiovisual and Studio Code systems were installed. However, there has been some ongoing technical issues related to Laerdal based problems with the patient simulator SimMan 3G leading to down-time and interrupted staff development time. Formal training has been inconsistent due to lack of time availability and access by educators because of full teaching loads. The educator team is currently engaging the Studio Code supplier and IT specialists internally to up-skill and expand their trouble shooting skills.
* The project partners have instigated a network for training and up skilling technicians across the LM and Hume regions. This is an ongoing training model for the professional development of technicians.
* Laerdal was unable to service the needs of all Victorian clients due to the sheer volume of equipment ordered within a short time frame. This meant that although equipment was delivered it could not be used until Laerdal was able to deliver training, otherwise the warranty would be void. This had the potential to delay training throughout the region and prevent growth from being achieved. Education teams used existing SLE mannequins to ensure in-reach and outreach SLE education could be delivered in a timely manner.
* One of the elements not considered in the proposal for funding was the workplace health and safety hazard of transporting heavy and awkward SLE equipment to health services throughout the region. This risk was identified early in the project and Monash University, as the lead, conducted manual handling and transport assessments by a qualified occupational therapist. Assistive devices such as trolleys, wheelchairs and transport with appropriate lifting devices were identified during this process and funded within the budgeted transport costs via the project partners.
* Travelling long distances on top of delivering education sessions made outreach days an OH&S risk. Consequently, on a number of occasions, educators stayed overnight and delivered two sessions back-to-back rather than delivering training on two separate occasions. This reduced travel time and managed OH&S risks. The program has remained within budget.
* The SLE outreach program coupled with existing SLE demand was such that SLE staff found it difficult to take leave. As a result, staff workloads had to be reviewed regularly and schedules amended. Outreach services will be rationalised in future to ensure staff take leave at appropriate and sustainable intervals.

Case study

The SLE delivery within the Mildura in-reach and outreach program ensured the development of a strong affiliation with Mildura Private Hospital. An assessment of the needs of the hospital was conducted and education delivery was tailored accordingly. The Mildura Private Hospital has reported in the past being limited to accessing staff education partly from being in a rural setting which dictates that staff have to either travel for education or education needs to be brought to them. Both issues have cost factors and time constraints associated with them.

One case example is the expertise and assistance provided by the SLE outreach program which allowed surgical patients to benefit from epidural therapy for the first time at their facility.

A second case example was the delivery of an immersive simulation for Ambulance Victoria to assess an interstate staff member with a significant performance discrepancy. The SLE enabled the above assessment procedure to take place in a realistic environment that was controlled, private, confidential and in a local setting whereby there was absolutely no risk to live patients.

Evaluation

Evaluation surveys

Since the commencement of the LM SLE project, 538 survey responses have been collected. These have been recorded directly into Survey Monkey. While there have been multiple sessions held since the education sessions commenced in September 2012, the maximum number of participants or leaners allowed to attend a simulation education sessions is six. These education sessions have been held in the university simulation spaces or centres and at the smaller rural health facilities within the LM region.

These education sessions are performed to a wide range of health professionals, including medical practitioners, registered nurses, enrolled nurses, allied health professionals and students.

From the eleven questions posed, most had a five-point Likert scale with response options of ‘strongly agree’, ‘agree’, ‘neutral’, ‘disagree’ and ‘strongly disagree’. Participants were also given the opportunity to provide additional comments in three sections of the survey.

Key observations and feedback

* Educators reviewed student and other learner feedback on an ongoing basis and with a focus on continuous improvement.
* It was valuable to engage senior management within health professions to participate in the sessions. This enabled these managers to motivate and encourage staff to participate in sessions as well as address staff concerns regarding this type of training which is seen as threatening or challenging.
* Attendance on the day can vary from the intended bookings due to clinical commitments. Flexible booking options were invaluable to health services to accommodate as many practical staffing needs as possible.
* Travelling time is extensive and is not factored into the SLE reporting hours of clinical education.
* Lack of involvement thus far from the medical profession to participate in the DETECT e-learning online program (Detecting Deterioration, Evaluation, Treatment, Escalation and Communicating in Teams) has been evident. Promotion of the sessions was found to be a major factor as the primary pathway used by the health services was nursing focused.
* Few participants prepared adequately prior to the simulation session despite offering online pre-learning. However, the evaluation and multiple choice questionnaires do not appear to have been influenced by participants not preparing for the session.
* Post session debriefing was found to be valuable.

Health services found the university educators to be highly knowledgeable and professional and believe they would fill more training sessions based on the positive staff feedback and word of mouth. They reported they would pay a reasonable fee for future training sessions held onsite.

Future directions

Project partners plan to continue the collaboration between the three education providers (Monash University, La Trobe University, Bendigo Institute of TAFE) and one health service provider (Bendigo Health Care Group). The project team aims to provide clinical education using simulation methods for professional entry students from Monash University (Medicine), La Trobe University (nursing, physiotherapy, occupational therapy and paramedicine) and TAFE (division 2 nursing) at its Bendigo and Mildura regional hubs and at four smaller rural health service hubs in the region.

The LM project has received additional funding from HWA through until the end of 2014. This new funding specifically relates to sustaining 3.0 FTE educator positions and 1.5 FTE simulation technician positions with ‘in-kind’ contributions from the two universities. The simulation education focus is for delivery across the two regional hubs plus a small number of sessions based at the four university rural hubs within the LM region. The student delivery targets are set at 80% of the total target numbers and other learner delivery targets set at 20%. Interprofessional simulation sessions are a focus of the sustainable simulated learning environments project, as is curriculum design activity to include simulation learning within curriculum and accreditation approval across nursing and allied health disciplines.

Monash Bendigo and La Trobe now have well developed simulation environment resources at a shared educational precinct of the Bendigo Health campus and in Monash Mildura the simulation centre is adjacent to the Mildura Base Hospital.

In the Mildura regional hub, simulation resources of equivalent quality to Bendigo are available on the Monash and La Trobe campuses that service the needs of clinical education for their own professional entry students and those of division 2 nurses from Sunraysia TAFE. It also serves the SLE needs of other learner recipients from Mildura Base and Mildura Private Hospitals. We work on a principle of harmonisation across this large region. Monash Mildura need to implement education delivery in their local context as it is different to Bendigo. However the application of fee-for-service models, bookings, curriculum design remain consistent.

The project partners have identified a need for more research to validate simulation as a teaching/learning strategy or as an assessment/evaluation method.

Accreditation of courses with SLE sessions included a continuous clinical skills program within the curriculum for the professional-entry medical program at the Monash School of Rural Health. The aim is to inform simulation as a methodology in the university curriculum, validate the use of simulation to support the learning outcomes for students and endeavour to improve patient outcomes in the health care community. The research activities will be facilitated by the educators in the centre who have a strong research record and will be supported by the resources within each university.

Conclusion

The collaboration for this project was between Bendigo TAFE, Bendigo Health, Monash University and La Trobe University.

Through this partnership, the project delivery hours and quality standards exceeded the objectives and goals set for the project.

The cost in terms of staff productivity, budgets and other resources to coordinate, administer, manage, report and communicate were also high.

The relationships built with the twenty-four health service partners and the strengthening of collaborations as a CPN were enhanced by the LM SLE project. Strong relationships are essential for the delivery of high quality education, clinical placements and professional development within the health professions. The project partners are committed to, and believe in, the rural health education mandate to build and maintain a well-trained health workforce for the LM region.

SLE sessions were well received as evidenced by the high attendance rates of students who often requested more sessions and our other learner groups who took time out from their busy work schedules to attend the scheduled SLE training.

Nursing was well supported as a discipline in the category of ‘other learners’. However, better strategies need to be implemented via the health services for medicine and other disciplines to participate in simulation scenarios.

Bendigo TAFE and Sunraysia TAFE have contributed to this simulation education model and their work in the education of enrolled nurses in this region is extensive.

Bendigo TAFE, as a partner, has been an important voice in discussions surrounding vertical integration training for nurses and we aim for this to continue.

With respect to the sustainability of simulation training in the LM CPN region, this project will continue to deliver high hours of simulation using a lean business model including cost recovery from a user-pays model.

Managers, administrators and education project teams aim to streamline processes, continue to share resources and most importantly maximise in-reach simulation sessions.

A new sustainable model, where SLE forms the basis of significant amounts of teaching before and during clinical placements, and a better learning model for students, has been embraced and accepted as the new best practice for this region. It is the aim of the project to make student and other learner SLE education more sustainable by a combination of not only external funding but also lean business practices, increased efficiencies and focused use of staff time.

Health services and education providers will continue to work together in the LM CPN to achieve the best possible results for students on clinical placements and health professional training.