Simulated practice learning in a pre-registration nursing programme

Barry Ricketts, Clair Merriman and Louise Stayt

Abstract

Following the publication of the Nursing and Midwifery Council's (NMC) (2007) *Simulation of Practice Learning Project*, simulated practice learning opportunities are now to be incorporated into pre-registration undergraduate nursing programmes across the UK. Since 2008, the Faculty of Health and Life Sciences at Oxford Brookes University has incorporated simulated practice learning into their curriculum to contribute towards students' 2300 direct clinical care hours. This paper presents the findings of an evaluation project that was conducted by academic staff within the faculty to ensure that they could continue to meet the principles set out by the NMC for auditing simulated learning environments used by higher education institutes (HEIs), and to meet the Essential Skills Clusters (NMC, 2010a) for registration as part of the quality assurance processes. The evaluation took place over 2 days, with a total of 52 participants, including practice partners, mentors, practice educators, academic staff and students from all four branches of nursing (adult, mental health, learning disability and children). Results indicated that the support of direct care hours through simulated practice learning can permit students to practice essential clinical skills in a designated clinical skills suite. These learning experiences can also offer positive outcomes and the opportunities to maintain partnership for students, placement partners, and mentors.

Key words: Simulated practice learning ■ Clinical skills teaching ■ Pre-registration nursing ■ Essential Skills Clusters

Following publication of the *Simulation and Practice Learning Project* (Nursing and Midwifery Council (NMC), 2007), which included 13 higher education institutes (HEIs), simulated learning opportunities have now been incorporated into more than 40 pre-registration undergraduate nursing education programmes in the UK. A maximum of up to 300 hours of simulated practice learning, undertaken in a designated simulated learning environment, can be included as part of the compulsory 2300 direct clinical care hours. The simulated practice learning hours may be used to substitute direct clinical care hours in the practice setting during the 3-year nursing programme.

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The NMC's (2007) study revealed that simulation could not replace the clinical experience, but that it may complement it, and that simulation in the clinical laboratory setting or a designated suite can provide a controlled environment for the development of clinical skills. Consequently, health professionals and academic staff are increasingly considering the use of simulation as an important component of pre-registration nurse education programmes (Kneebone et al, 2004; Dix and Hughes, 2005; Haigh, 2007; Cant and Cooper, 2009).

The project also identified the advantages of simulated practice learning and its' value as a learning strategy, simulation however is not a mandatory component of all pre-registration nursing programmes in the UK. In addition, while HEIs have the opportunity to implement a range of teaching and assessment simulation strategies across their pre-registration programmes as part of the learning outcomes for students to achieve clinical competency, they have the flexibility to decide the degree to which these are incorporated into the curriculum. The preparation of undergraduate pre-registration nursing students to ensure that they practice skills safely and effectively is intended to protect themselves, the public and clients (NMC, 2010b). The estimated adverse incidents as reported by the National Performance Safety Agency (NPSA, 2009) confirms the necessity to reduce the incidence of clinical litigation, highlighting the benefits of 'trial and error' that can be experienced through simulation within nursing education (Harder, 2010).

Similarly, the publication of the Essential Skills Clusters (ESCs) for pre-registration nursing programmes forms part of the educational standards of proficiency for entry to the UK nursing register (NMC, 2010a). The ESCs place an increased emphasis on the importance of specific clinical skill acquisition, and suggest that simulated practice learning may be a useful strategy for fulfilling the requirements for registration and client safety (NMC, 2010a).

Oxford Brookes University

In response to the developments detailed above, the academic staff within the Faculty of Health and Life Sciences at Oxford Brookes University (OBU) conducted an evaluation event. This event also formed part of the university's annual quality asurance process, to ensure they could continue to meet the principles of auditing skills laboratories used for simulated practice learning, as set out by the NMC (2007) (*Table 1*).

In this paper, the authors present the findings of the evaluation event, which aimed to evaluate the principles

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Table 1. Principles of auditing skills laboratories used for simulated practice learning (NMC, 2007)

Maintain partnerships for simulated practice learning
Managing simulated practice learning safely and effectively
Assessment and the promotion of competence through simulated and practice learning

and associated indicators for learning within a simulated environment (NMC, 2007), and the implementation of the newly released Essential Skills Clusters (NMC, 2010a).

Background

Simulation practice learning as a strategy

The aim of simulated practice learning is to provide students with learning opportunities that develop professional practice skills and help to increase student's confidence during practice learning (Davis, 2002). Morton (1995) defined simulated practice learning as:

> **'To replicate some or nearly all the essential aspects of a clinical situation so that the situation may be more readily understood and managed when it occurs for real in clinical practice'**

Morton (1995) reflected the nature of simulation that encompasses both the low and medium fidelity simulation, as seen nationally with the pre-registration nursing programmes (Cant and Cooper, 2009). Conversely, Gaba (2004) described simulation as a technique within health care that can mirror and exaggerate real experiences through replication. He suggested that simulation should be considered as a technique that can offer educationalists diverse experiential activities within an educational context. This description supports how simulation can enhance practice learning by supporting the application of knowledge, skills and attitude when providing future direct care in the practice setting.

The aims of simulation activity can be diverse, from the assessment of performance through objective structured clinical examinations (OSCEs), to education and training, with the focus being to develop basic clinical skills and conceptual knowledge (Gaba, 2004). Types of simulation activities may be divided into two educational contexts: processes and actions (Schiavenato, 2009). An 'action activity' includes physical exposure to simulated learning to master tasks or skills (e.g. cardiopulmonary resuscitation, urinary catheterisation). The focus would require the use of a human patient simulator, a high fidelity simulation mannequin, or a virtual reality task trainer, which is often referred to in the literature as 'simulators' (Bradley, 2006).

Alternatively, the 'process context' may include intangible phenomena such as critical thinking concepts and communication techniques. This would require low technical equipment such as roleplay and video analysis, and the term 'simulation' is often used to denote a range of methods of simulation (Harder, 2010).

For the purpose of this paper, the term 'simulation' will be used to reflect the broad provision for learning, through simulation in a skills suite, which can bring together both practice related learning and a blend of related theory learning (NMC, 2007).

Implementation of simulated practice learning within pre-registration nursing curriculum

Following the publication of the NMC's (2007) *Simulation and Practice Learning Project*, the recommendations that were implemented within the pre-registration nursing curriculum at Oxford Brookes University from September 2008 were:

- The increased use of simulated learning opportunities within an audited simulated practice learning environment across all 4 branches of the pre-registration undergraduate nursing programmes (adult nursing, mental health nursing, learning disability nursing and children's nursing). This involved a variety of simulation from low-to-medium fidelity and included the use of video playback facility, volunteer patients and OSCEs
- Simulated practice learning supported direct care in the practice setting. Up to 00 hours of simulated and practice learning hours may contribute to the NMC's requirements to complete a minimum of 2300 direct care hours.

A review of the pre-registration nursing programmes identified that 146 hours of simulated practice learning opportunities were taught within the pre-registration nursing curriculum. Simulated learning included many of the ESCs that complemented the existing NMC's (2010a) pre-registration proficiencies. These were mapped and shared learning opportunities were explored along with collaboration of the HEI and clinical placement providers.

All of the simulated practice learning took place within designated clinical skills or communication suites, which are thought to offer a safe and supportive environment for the activities being undertaken (Ker et al, 2003). To concur with recommendations from Kneebone (2004), the timetabling offered sufficient time within the simulated practice learning to allow students to fully engage in each activity along with further opportunities to rehearse and practice. The use of a video playback facility permitted students to engage in reflection time to offer peer review and constructive feedback of individual or group performance, bringing together both the educational contexts of 'process and action activities' (Schiavenato, 2009).

Attendance at all the scheduled simulated practice sessions offered timely supervision and facilitator feedback to enhance the students' practice experience, and a record of attendance was held at all simulation sessions as a requirement of the NMC (2007). A facilitator supported students during the scheduled sessions, and students were given opportunities to access simulated learning opportunities outside of the normal scheduled lessons. This provided the additional rehearsal time sometimes necessary for the confirmation of attainment and successful competence (Ricketts, 2011). Online and interactive clinical skills workbooks, skills videos and virtual learning resources were used to maximise the learning opportunities, permitting students to access relevant theory and knowledge to complement a number of 'action' activities.

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Table 2. Broad skills and knowledge covered within the simulated practice learning hours and the related five Essential Skills Clusters for pre-registration nursing

Simulated practice learning – common foundation	Related Essential Skills Clusters	Simulated practice learning – branch specific	Related Essential Skills Clusters
Vital signs	Organisational aspects of care	Continence including urinary catheter care	Organisational aspects of care
Verbal and nonverbal communication skills	Care, compassion and communication	Respiratory assessment	Organisational aspects of care
Standard infection control precautions	Infection prevention and control	Cardiac assessment	Organisational aspects of care
Wound care and principles of asepsis and aseptic non touch technique	Infection prevention and control	Neurological assessment	Organisational aspects of care
Moving and handling principles	Organisational aspects of care	Diabetes care including measuring blood sugars	Organisational aspects of care
Hospital life support	Organisational aspects of care	Rapid tranquillisation	Medicines Management
Nutrition and hydration	Nutrition and fluid management	High dependency care skills	Organisational aspects of care
Medicines management	Medicines management	Intravenous therapy	Medicines management
Elimination	Organisational aspects of care	Advanced counselling skills	Care, compassion and communication

Simulation, practice learning feedback sheet, and record of simulated and direct care hours in the practice setting

During simulated practice learning, the students were given the opportunity to receive timely feedback immediately following the activity; this permitted student to provide written reflections on their performances. The written reflections were completed on a newly developed simulation and practice learning (SPL) feedback sheet (*Figure 1*). The SPL feedback sheets were issued at the beginning of each module, and one sheet is provided for each simulated practice learning episode. Each sheet provides an outline of the specific pre-session activities that were completed to complement the session, the learning outcomes of the simulation, and the proficiencies that are linked directly to the individual simulated learning activity.

The four primary aims of the SPL feedback sheets were to:

- Communicate what was learnt to mentors during simulated practice learning during direct care in the practice setting
- Guide objective setting in the practice setting
- Provide evidence to support the assessment of pre-registration proficiencies
- Provide written feedback to students.

At the end of the simulated practice learning activity, students were asked to complete a summary of learning using the SPL feedback record. The facilitator could contribute to this process by offering additional comments and feedback, which could be used later during the student's direct care experience and later verified by mentors, as supported by Kneebone et al (2004) and Freeth and Fry (2005). The documentation offers an audit trail of the student's progression as students were encouraged to keep the SPL sheets within their practice portfolios and mentors could refer to these to help set realistic and meaningful objectives during their direct care hours in the practice setting.

Evaluation event

A total of 52 participants attended the evaluation event, including practice partners (and mentors), academic staff, and students from all 4 branches of pre-registration nursing programme. The aims of the evaluation event were to:

- Secure shared commitment from programme providers, stakeholders and commissioners
- Maximise opportunities for simulated practice learning
- Identify effective communication infrastructures
- Ensure that the simulated practice learning environments were supportive, safe and appropriate. Ensure that the learning resources supported evidence based practice.

These aims were categorised under the following key principles identified by the NMC (2007) as a means of auditing the environments for simulated practice learning:

- ***Theme 1:*** Maintaining partnerships for simulated and practice learning
- ***Theme 2:*** Managing simulated practice learning safely and effectively
- ***Theme 3:*** Assessment and the promotion of competence through simulated and practice learning.

Participants were divided into practice partners (including mentors), academic staff and students, so that mutual experiences could be shared and to provide a consensus of feedback. An academic staff member from the faculty facilitated each group, and all participants were asked to comment on the following themes by answering the following series of questions: The questions were designed to prompt discussion and participants were asked to consider what evidence would support each theme and what future improvements

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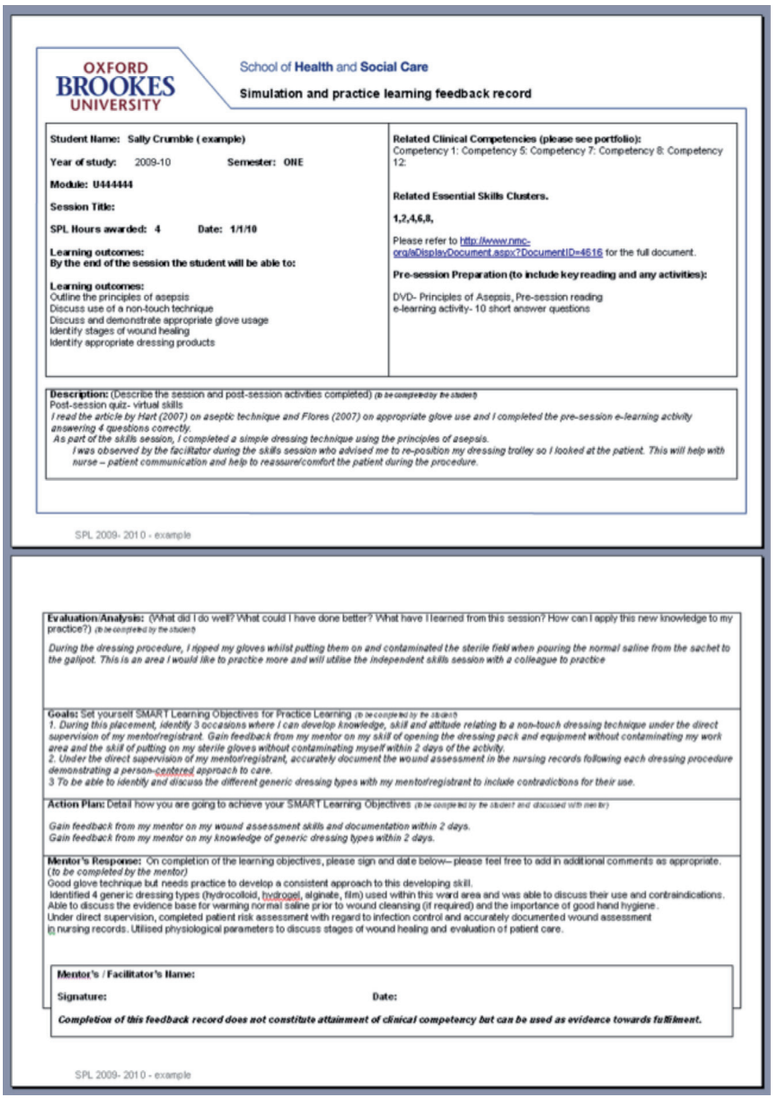

OXFORD BROOKES UNIVERSITY

School of Health and Social Care

Simulation and practice learning feedback record

Student Name: Sally Crumble (example)

Year of study: 2009-10 **Semester:** ONE

Module: U444444

Session Title:

SPL Hours awarded: 4 **Date:** 1/1/10

Learning outcomes:
By the end of the session the student will be able to:

Learning outcomes:
Outline the principles of asepsis
Discuss use of a non-touch technique
Discuss and demonstrate appropriate glove usage
Identify stages of wound healing
Identify appropriate dressing products

Related Clinical Competencies (please see portfolio):
Competency 1: Competency 5: Competency 7: Competency 8: Competency 12:

Related Essential Skills Clusters.

1,2,4,6,8,

Please refer to http://www.nmc-org/aDisplayDocument.aspx?DocumentID=4616 for the full document.

Pre-session Preparation (to include key reading and any activities):

DVD- Principles of Asepsis, Pre-session reading
e-learning activity- 10 short answer questions

Description: (Describe the session and post-session activities completed) *(to be completed by the student)*
Post-session quiz- virtual skills
I read the article by Hart (2007) on aseptic technique and Flores (2007) on appropriate glove use and I completed the pre-session e-learning activity answering 4 questions correctly.
As part of the skills session, I completed a simple dressing technique using the principles of asepsis.
I was observed by the facilitator during the skills session who advised me to re-position my dressing trolley so I looked at the patient. This will help with nurse – patient communication and help to reassure/comfort the patient during the procedure.

SPL 2009- 2010 - example

Evaluation/Analysis: (What did I do well? What could I have done better? What have I learned from this session? How can I apply this new knowledge to my practice?) *(to be completed by the student)*

During the dressing procedure, I nipped my gloves whilst putting them on and contaminated the sterile field when pouring the normal saline from the sachet to the gallipot. This is an area I would like to practice more and will utilise the independent skills session with a colleague to practice

Goals: Set yourself SMART Learning Objectives for Practice Learning *(to be completed by the student)*
1. During this placement, identify 3 occasions where I can develop knowledge, skill and attitude relating to a non-touch dressing technique under the direct supervision of my mentor/registrant. Gain feedback from my mentor on my skill of opening the dressing pack and equipment without contaminating my work area and the skill of putting on my sterile gloves without contaminating myself within 2 days of the activity.
2. Under the direct supervision of my mentor/registrant, accurately document the wound assessment in the nursing records following each dressing procedure demonstrating a person-centered approach to care.
3 To be able to identify and discuss the different generic dressing types with my mentor/registrant to include contradictions for their use.

Action Plan: Detail how you are going to achieve your SMART Learning Objectives *(to be completed by the student and discussed with mentor)*

Gain feedback from my mentor on my wound assessment skills and documentation within 2 days.
Gain feedback from my mentor on my knowledge of generic dressing types within 2 days.

Mentor's Response: On completion of the learning objectives, please sign and date below– please feel free to add in additional comments as appropriate. *(to be completed by the mentor)*
Good glove technique but needs practice to develop a consistent approach to this developing skill.
Identified 4 generic dressing types (hydrocolloid, hydrogel, alginate, film) used within this ward area and was able to discuss their use and contraindications.
Able to discuss the evidence base for warming normal saline prior to wound cleansing (if required) and the importance of good hand hygiene.
Under direct supervision, completed patient risk assessment with regard to infection control and accurately documented wound assessment in nursing records. Utilised physiological parameters to discuss stages of wound healing and evaluation of patient care.

Mentor's / Facilitator's Name:

Signature: **Date:**

Completion of this feedback record does not constitute attainment of clinical competency but can be used as evidence towards fulfilment.

SPL 2009- 2010 - example

Figure 1. Example of a completed simulation and practice learning feedback sheet

and recommendations for practice could be developed to enhance the simulated practice learning opportunities within the pre-registration nursing programmes. The results were collated during the event to offer preliminary findings.

Results

The results were collated by each facilitator and organised in accordance to the three identified themes. The common findings identified by all 3 groups also indicate specifically where a certain discipline has evaluated their experience and involvement in the process.

Maintaining partnerships for simulated and practice learning

The use of clinical practitioners to support simulation skills practice and to assess or act as a patient during the OSCEs is clearly evident. Guest lecturers and carers contribute to module delivery through formalised shared meetings and shared practice at annual mentor updates.

The use of the SPL sheets offers an excellent method of promoting partnership between HEIs and the practice setting to share best practice using related theory, research and best practice. The learning resources, pre-reading and complementary learning activities were made available using an online virtual skills website to facilitate improved access and increased self-directed learning materials.

Managing simulated practice learning safely and effectively

SPL feedback documentation offers all students the opportunity to address the ESCs learning outcomes through both simulated practice learning and while providing direct care in the practice setting. An advantage of SPL feedback is that there are fewer margins for discrepancy as all the skills can be addressed within the practice setting, offering all students an opportunity for rehearsal (NMC, 2010a). The SPL sheets offer conferment that the simulation practice learning activities meets the ESCs (NMC, 2010a). Documentation can create opportunities for discussion and further simulated practice learning during direct care in the practice setting with mentors (NMC, 2010a) that might not otherwise have been addressed. Small group work using a ratio of 1 facilitator to 10 students was implemented; this did not always permit sufficient feedback time and facilitation of all the simulated practice learning activities and opportunities for students.

Assessment and promotion of competence through simulated and practice learning

SPL documentation prompts earlier discussion with mentors and practice assessors to allow for improved objective setting. The use of formative and summative OSCE assessments (Alinier et al 2006) raises the profile of the ESCs (NMC, 2010a) required for proficiency. Simulated practice learning and feedback documentation offers a platform on which to build skills and knowledge, and offers evidence that contributes to the assessment of the competencies for proficiency (NMC, 2010a). A number of students expressed concerns regarding linking theoretical sessions with the realities of direct care in the practice setting, which mirrors similar findings by Hennman and Cunningham (2005). The discrepancies experienced between clinical skills taught within the HEI and observations made by students while providing direct care in the practice setting may cause students additional stress.

Future recommendations

Participants were given the opportunity to review the results so that additional analysis of the feedback and evidence could be considered. Future recommendations for practice were mutually identified, discussed and agreed during the event by using the same themes discussed in the results section.

Maintaining partnerships

Participants requested the use of annual mentor updates training to improve dissemination of information about the simulated practice learning opportunities for students. This could include a comprehensive list of simulated practice learning activities across all nursing education programmes,

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Theme 1: Maintaining partnerships for simulated and practice learning:
What evidence is there of partnership within the direct care setting and simulated practice learning and what other partnerships could be developed or explored?

Theme 2: Managing simulated practice learning safely and effectively:
What are the direct care learning opportunities that can be achieved or rehearsed to help meet the learning outcomes of the programme?
What evaluation and evidence is there to demonstrate that simulated practice learning supports the student's application of knowledge and skills in the practice setting?

Theme 3: Assessment and the promotion of competence through simulated and practice learning
How does the simulation and practice learning assessment feedback documentation support and respond to evidence based criteria?
How does the assessment of simulated practice e.g. OSCE support practice learning and the decisions made in relation to competency assessment?
How does the safe rehearsal of skills within simulation support the summative assessment or contribute to competency assessment in practice?

which could be disseminated more widely to the practice settings. It was also suggested that mentors should be invited to attend simulated practice learning activities as part of their mandatory annual mentor update training and continuing professional development (CPD) activity.

Participants felt that the use of SPL sheets should be promoted earlier on during the student's direct care experience in the practice setting, to help improve clinical objective setting, and contribution to care delivery and proficiency assessment. A full set of documentation should be provided for all practice settings to keep as a reference for access by practice partners and mentors.

Additionally, learning outcomes should be reviewed and detailed on the SPL sheets to ensure that they are valid and reliable when mapped alongside the learning opportunities within the practice setting and pre-registration proficiencies.

Managing learning safely and effectively

The request by students for increased time to practice skills is necessary in the simulated clinical skills laboratory if mastery is to be achieved through rehearsal and feedback. This could be achieved through the increased use of introductory and reflection time using increased video playback facility and repeat rehearsal time to generate further SMART objectives, as supported by Arundell and Cioffi (2005) and the NMC (2007). SPL learning outcomes and activities should be incorporated as part of the NMC (201a) proficiencies and promote their use as evidence of achievement.

Participants stated that consideration should be given to the fact that it may be unrealistic to define a specific ratio number of facilitators to student numbers, but also said that the nature of the clinical skills activities should strongly influence this decision. However, participants also agreed with Nikendei et al (2005) that the smaller the size of the group, the greater the opportunity for the student to be at the centre of the learning. As a result, the authors have not been able to define a standard student facilitator ratio, but agree with Childs and Sepples' (2006) findings that this should be determined by the simulated practice learning activity. For example, the psychomotor skill of taking manual blood pressure readings can be facilitated with a ratio of 1 facilitator: 10 learners, while certain clinical scenarios where learners are required to work in teams and implement decision making skills (e.g. rapid tranquillisation or caring for the deteriorating patient), a smaller ratio of 1 facilitator: 4 learners is more appropriate.

Assessment and promotion of competence

Participants believed that the SPL documentation process should be revised to simplify the allocation of SPL hours versus direct care hours. Consider how to promote the use of the OSCE assessment criteria and assessment documentation more freely with mentors/practice assessors by improved linkage with the portfolio of evidence. Repeat rehearsal should be encouraged to allow for increased exposure and transfer of the skills across a range of practice areas. Further consideration of how to increase the link of theory and practice and vice versa within the constraints of the student programme was also requested. Explore how the allocation of direct care experience within the practice settings can be further enhanced so that the simulated practice learning experience, the theoretical sessions and direct care experiences can be fully integrated as supported by Morgan (2006). Explore the use of simulated practice learning to support the weaker student by offering increased rehearsal time and independent simulated practice learning experiences.

Conclusions

The findings from the evaluation event offered an opportunity to evaluate curriculum development, and identified that simulated practice learning in the pre-registration nursing programme supported essential learning opportunities across all 4 pre-registration nursing programmes in partnership with practice partners, mentors, students and academic staff. The support of direct care through simulated practice learning can permit students to practice essential clinical skills in a designated clinical skills suite, and the learning experiences can offer a positive outcome and opportunities to maintain partnerships for students, placement partners and mentors.

Students can learn from their mistakes and gain confidence through simulated practice before providing direct care in the practice setting. Clear objective-setting before providing direct care can help indicate where students need to practice their nursing skill acquisition. The SPL sheet offers documentation of best practice alongside links to the relevant literature and theory; this can help to guide the student's learning alongside appropriate mentor supervision and rehearsal, either in the

KEY POINTS

- The support of direct clinical care hours through simulated practice learning (SPL) may permit students to practice essential clinical skills safely in a designated clinical skills suite
- The shared learning experiences of SPL may offer a positive outcome and opportunities to maintain partnership for students, placement partners and mentors

safe environment of a designated clinical skills suite, or within the realities of the practice setting.

Simulated practice learning requires excellent facilitation skills and further review and evaluation of the facilitator's role and ratio of facilitator to student numbers is necessary to optimise simulated practice learning opportunities. Further research following implementation of the recommendations outlined is required to confirm whether improved learning outcomes are being achieved, and that audit of the simulated practice learning environment is maintained and enhanced through ongoing review and monitoring. BJN

Conflict of interest: none

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