Simulated learning for staff at a children’s hospice: a quality improvement project

Sally Richardson, Jayne Price, Rebecca Whiting et al

Abstract

Simulated learning has well known positive effects but its use in palliative care education is limited. A quality improvement project was undertaken at a children’s hospice to develop and evaluate simulation workshops. The aim was to increase the knowledge, skills and confidence of nurses and healthcare assistants in managing challenging situations commonly experienced when caring for children with life-limiting conditions and their families. The Plan, Do, Study, Act (PDSA) model for improvement was used to test simulation workshops on a small scale using a post-workshop questionnaire and reflective diaries. Despite some initial anxiety, participants felt that the workshop had enhanced their confidence, knowledge and skills, particularly in relation to conducting challenging conversations. The project has provided insight and evidence to develop simulated learning at the children’s hospice and further afield.

Author details


Keywords

clinical, education, end of life care, hospices, management, professional, service improvement, simulation, palliative care

SINCE THE first children’s hospice in the world opened in Oxford in November 1982, hospices have become central to the care of children with life-limiting conditions and complex needs and their families (Menezes and Lewin-Taylor 2018). Caring for these children and their families can be rewarding, but it can also be challenging given the complexity of the care required (Taylor and Aldridge 2017) and the emotional, intensive nature of the work (Tatterton et al 2021).

Establishing a workforce that has the appropriate skills is central to the provision of safe and effective palliative care to children and their families (Whiting et al 2021). Educating and supporting staff is essential to assist them to develop the confidence and competence to care for children with life-limiting conditions and their families (Taylor and Aldridge 2017, Together for Short Lives 2018). However, there are concerns about the recruitment and retention of staff in the children’s palliative care sector, including in children’s hospices (Together for Short Lives 2017).

This article presents a quality improvement project, Simulated Learning in Children’s Hospices (SLinCH), undertaken between 2019 and 2022 (with an interruption due to the coronavirus 2019 disease pandemic) at a children’s hospice in collaboration with a local university and a palliative care specialist doctor. The aim was to improve the knowledge, skills and confidence of nursing staff through the use of simulation.
The Plan, Do, Study, Act (PDSA) model for improvement (NHS England and NHS Improvement 2022) was used to test the use of simulation at the hospice on a small scale and provide a platform from which to develop simulation as an educational tool, at the hospice and potentially further afield.

**Background**

**Simulation**
Simulation has become increasingly used in nurse education in recent years (Bienstock and Heuer 2022). Simulation replicates an intervention or situation and uses role play to give learners an opportunity to practise their skills in a safe environment. It can involve the use of low-, medium- or high-fidelity manikins. Fidelity in the context of simulation refers to the extent to which the simulation approaches reality (Association for Simulated Practice in Healthcare 2017).

The General Medical Council (2015) and the Nursing and Midwifery Council (NMC) (2018a, 2018b) have recognised that simulation can create an environment that is conducive to deep and meaningful learning. In its standards for preregistration nurse education, the NMC (2018b) has placed greater emphasis on simulation than in the past. Learning through simulation has been shown to be beneficial when educating staff in the palliative care setting (Renton et al 2017) but the use of simulation in palliative care education has been identified as being limited (Evans and Taubert 2019).

**Plan, Do, Study, Act model for improvement**
The PDSA model for improvement is used in the workplace to assist in implementing change and is one of the quality improvement tools most frequently used in healthcare (Christoff 2018). It provides a framework for developing, trialling, evaluating and implementing changes with the opportunity to test these changes on a small scale before their wider implementation (NHS England and NHS Improvement 2022).

The four stages of the PDSA model for improvement are (NHS England and NHS Improvement 2022):

- **Plan** – Plan the change.
- **Do** – Carry out the change.
- **Study** – Evaluate the effects of the change and what has been learned based on agreed measurable outcome data.
- **Act** – Implement the change or undertake another PDSA cycle as needed.

**Quality improvement project**
The aim of the SLinch quality improvement project was to test and evaluate simulation workshops in a children’s hospice to increase the knowledge, skills and confidence of nurses and healthcare assistants in managing challenging situations when caring for children with life-limiting conditions and their families. This was a new approach at the hospice. Ultimately, the aim was to embed simulation in the hospice’s education programme in the future.

Much debate exists about the ethical considerations in quality improvement projects and whether such projects require ethical approval (Hunt et al 2021). To ensure all ethical issues were addressed, and given the nature of the subject and the fact that several organisations were involved, approval was obtained from the relevant university ethics committee.

**Plan**
A collaborative approach to planning was adopted. The project team included the five authors of this article: a professor of children’s nursing (JP), an associate professor in simulated learning and clinical skills (SR), a practice education facilitator (RW), the head of hospice services (GS) and a registrar in paediatric palliative care (AC). The project team formed three planning workstreams (Table 1) and met regularly, with each workstream team feeding back on their progress. The hospice’s parent participation group took part in the planning process by giving feedback on the scenarios that would be used in the simulation workshops. A high-fidelity full-body child simulator was purchased thanks to funding from the Burdett Trust for Nursing.

**Scenario writing**
Three scenarios were written to reflect situations commonly encountered in a children’s hospice which staff had said they found challenging:

- In the first scenario, participants were tasked with identifying and managing respiratory deterioration in a child (‘deteriorating child’ scenario).

**Key points**

- Caring for children with life-limiting conditions and their families brings with it challenges for nursing staff
- Simulation has proven valuable in the education and training of healthcare professionals
- Adopting a collaborative approach and measuring the effectiveness of an intervention is crucial in quality improvement projects
- Simulation can support staff in children’s hospices to develop their skills, knowledge and confidence in providing safe and effective care

### Table 1. Planning workstreams

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<th>Workstream</th>
<th>Aim</th>
<th>Project team members</th>
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<td>Scenario writing</td>
<td>To develop three scenarios incorporating communication skills essential in challenging conversations and clinical skills essential in identifying and managing a deteriorating child</td>
<td>Anna Chadwick, Rebecca Whiting, Sally Richardson</td>
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In the second scenario, participants were tasked with talking to the child’s mother, who was concerned about the use of morphine to manage her child’s symptoms (‘challenging conversations’ scenario).

In the third scenario, participants were tasked with identifying and managing pain in the child and discussing the child’s care with the mother (mixed scenario).

In the first scenario the use of the high-fidelity full-body child simulator was central. In the second scenario, which followed on from the first, a trained and experienced role player acted as the child’s mother. In the third scenario, participants interacted with the child simulator and the role player at the same time.

The scenarios were written by AC with input from RW and SR. Drafts were sent to the parent participation group, which endorsed the scenarios as suitable and realistic.

Train-the-trainer days

Five senior nurses from the children’s hospice who had never facilitated simulated learning participated in two train-the-trainers days. The aim was to teach them to:

► Set up, animate, problem solve and close the manikin.
► Undertake a ‘deteriorating child’ scenario with the manikin.
► Undertake a ‘challenging conversations’ scenario with a role player.
► Use a debrief model.

Before the training, the five trainees had been asked to complete the e-learning for healthcare (portal.e-lfh.org.uk) simulation pack and had received pre-reading material, the three simulation scenarios and the plan for the train-the-trainer days.

During the first train-the-trainer day, the trainees went through the use of the manikin with RW, SR and AC and a representative from the company that had provided the simulator.

The second train-the-trainer day focused on the ‘challenging conversations’ scenario and on debriefing methods. The ‘challenging conversations scenario’ was run with the role player, with time for debriefing factored in because of the emotional content of the scenario. The trainees also observed the trainers run the ‘deteriorating child’ scenario with the manikin and worked with the trainers to operate the manikin. At the end of the morning, the trainers and trainees identified areas for further training for the afternoon, which included the use of the manikin and how to conduct a debriefing after a simulation scenario.

Measuring effectiveness

Having a means of measuring the effectiveness of the intervention is crucial in a quality improvement project. The project team planned to measure effectiveness through a questionnaire completed by participants immediately after the simulation workshop and reflective diaries completed by participants, on paper or online, in the four months following the workshop. The aim was to establish the effects and potential value of simulation in a children’s hospice as well as the merit of developing a set of recommendations on the future use of simulation in children’s hospices.

JP and GS developed a questionnaire to evaluate the experiences of workshop participants. The questionnaire was adapted from an evaluation form used in previous teaching. It contained questions aimed at determining whether participants had previous experience of simulated learning; whether they had had any anxiety or concerns before attending the workshop; to what extent they felt the workshop had enhanced their knowledge, skills and confidence; and which aspects of the workshop they had found effective. The questionnaire was anonymous.

The project team thought that it was important to explore longer-term effects of the workshop on practice, so a reflective diary was designed for participants to complete in the four following months. The reflective diary was also anonymous.

Do

Four simulation workshops were held between March and June 2022. Each workshop accommodated between four and six participants who had been randomly selected to represent a range of roles. There were 19 participants in total: nine healthcare assistants, seven children’s nurses from the in-house care team and three nurses from the community team. Each workshop lasted 3.5 hours and included a debriefing.

The first simulation workshop was facilitated by RW, SR and AC with the five newly trained trainers observing. A debrief at the end of that workshop gave an opportunity for the new trainers to ask questions and for some aspects of training to be reiterated. The three following workshops were facilitated by the new trainers alongside RW, SR and AC. This increased the confidence and competence of the new trainers in operating the manikin, running the scenarios and undertaking debriefs.
Study

Outcomes of the post-workshop questionnaire

Of the 19 participants, 18 completed the post-workshop questionnaire (95% response rate). Of those 18 respondents, 50% (n=9) had no previous experience of simulated learning (Figure 1). Those who did have previous experience of simulated learning indicated that they had gained it during their undergraduate studies or in previous posts before working at the hospice.

Simulated learning can cause anxiety among participants (Shearer 2016). Two participants (11%) felt no anxiety, ten (56%) felt some anxiety and six (33%) felt very anxious (Figure 2). There was a link between anxiety and previous experience. The two participants who felt no anxiety had previous experience of simulated learning. Of the nine participants who had no experience of simulated learning, six experienced some anxiety and three felt very anxious. Participants suggested several reasons for their anxiety and three main themes emerged from their responses:

- Fear of the unknown, fear of being watched and fear of messing up.
- Worry about being observed in test-like circumstances.
- Getting things wrong.

Participants were asked to rate the enhancement of their knowledge, skills and confidence immediately after the workshop on a 10-point Likert scale (where 0 indicated no enhancement and 10 indicated significant enhancement). Of the 17 participants who had responded to that question, all (n=17, 100%) rated the enhancement of their knowledge, skills and confidence between 5 and 10 and 65% (n=11) rated the enhancement between 8 and 10. This suggested that overall, despite participants’ anxieties or concerns before the workshop, they found that the workshop had enhanced their knowledge, skills and confidence (Figure 3).

In the post-workshop questionnaire, participants had the opportunity to give further feedback via free-text boxes. Participants mostly commented on the skills and confidence they felt they had developed during the workshop. Box 1 shows verbatim quotes from participants’ free-text feedback.

Outcomes of reflective diaries

The response rate to the reflective diaries was disappointing, with only four diaries (22%)

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of 18 participants) completed. Examination of the diary entries indicated that, in the four months since the simulation workshop, the four participants had been involved in challenging conversations with families and that learning and experience gained at the workshop had supported them in these challenging conversations. Evans and Taubert (2019) identified that the use of simulation in palliative care education has value in relation to communication skills. It was interesting that all four diaries mentioned the application of learning from the ‘challenging conversations’ scenario to their practice and none mentioned the ‘deteriorating child’ scenario. This may have been because they had not been caring for a deteriorating child in the four months since the workshop. However, learning from the ‘deteriorating child’ scenario had been mentioned in the post-workshop questionnaire.

Act

The SLinCH quality improvement project had demonstrated the potential of simulated learning in children’s hospices, so the hospice where the project had been conducted started embedding simulation into its ongoing education programmes. Furthermore, the SLinCH project was presented at a national children’s palliative care conference in September 2022 and there was much interest from other children’s hospices in the UK and from one NHS trust providing specialist palliative care to children. These interested parties sought in-depth knowledge and understanding of how they could embed simulation in their own settings to develop their staff’s knowledge and skills. Following this a question and answer session was organised with participants from nine other children’s hospices and a Macmillan nursing team.

Funding has been secured to enable the project team at the hospice to develop an e-learning package based on the team’s experiences made through the SLinCH project and its expertise in simulated learning and children’s palliative care. The aim is to enable other children’s hospices to develop and run simulation workshops. Another PDSA cycle has begun as part of this new project.

Discussion

This small-scale quality improvement project has shown beneficial effects of simulation workshops for participating staff. Immediately after the training, participants felt that taking part in a workshop had enhanced their confidence, knowledge and skills, which echoes the findings of Renton et al (2017). Participants valued the realistic scenarios, the child simulator, the safe learning environment and the opportunity to learn with and from each other during the simulations and debriefs. The low rate of completion of reflective diaries is a limitation, but the four participants who did submit a reflective diary could still recall the workshop and identify that it had benefited their practice, particularly in relation to conducting challenging conversations.

The most significant barrier to learning appears to have been the anxiety of participants before the workshop. There was some indication that participants who had previous experience of simulated learning were less anxious. A potential focus for future investigation is whether anxiety decreases as simulation becomes embedded in training.

One of the strengths of the project was that it involved training new trainers to provide simulated learning, reinforcing the hospice education team’s capacity to use simulation in the future. It seems likely that the diverse backgrounds of the project team members was an important factor in the success of the project. The participation of university staff with expertise in simulated learning was key to equip and empower the hospice-based educators. The involvement of a palliative care specialist doctor enabled the production of relevant and relatable clinical scenarios.

Box 1. Verbatim quotes from participants’ free-text feedback

Skills developed

» Importance of ABCDE [airway, breathing, circulation, disability, exposure] and how it can relate to end of life
» Always talk through what you are doing – so other staff and family know what you are thinking
» Improving approach to difficult conversations
» Always remember to look at the child without feeling like you need to use the machines around

Confidence developed

» Helped me in believing in own capabilities and that you can handle the situation
» Helped me… to be more confident in myself
» Trust yourself and your role
» The simulation workshop gave me more confidence in own ability to support deteriorating children and their families

Effective aspects of the workshop

» Good to discuss what went well and didn’t and learn from others
» Having the actor made it feel very real
» I felt like I was supported. I was given constructive feedback and the scenarios felt very realistic and relevant to the job
The size of the quality improvement project makes it challenging to draw firm conclusions about the value of simulated learning for hospice staff. However, the positive responses of participants are encouraging. It is clear, from the feedback received by the SLinCH project team at the national children’s palliative care conference, that other hospices are interested in developing simulated learning as a training tool. The team hopes that other hospices will find it useful to learn from its experiences.

**Conclusion**

It is crucial to ensure that nursing staff working in children’s hospices have the appropriate skills, knowledge and confidence to provide safe and effective care to children with life-limiting conditions and their families. Simulation has been shown to be beneficial as a training tool for educating staff working in palliative care, but its use in palliative care education is limited. This quality improvement project aimed to develop the knowledge, skills and confidence of nursing staff at a children’s hospice through the use of simulated learning.

The project has provided a platform from which to develop simulation as an educational tool, at the hospice and potentially further afield. The project team is working on an e-learning package through which it will be able to share its experience and expertise with others interested in harnessing the power of simulation in the children’s hospice sector.

**References**


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