Simulation Project Training Evaluation

Evaluation Report

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Executive Summary

This project was established as a tool to understand whether simulation-based training can be delivered effectively in primary care and adult social settings in Devon. Two key system-level priorities of early cancer detection and end of life care were chosen as the themes for the development of a set of context-specific scenarios.

The project established a Simulation Training Fellow, to lead on the design and delivery of these joint health and social care scenarios. The scenarios included situations located in care homes, private homes, and clinical settings; and focussed on interactions with patients with learning disabilities, care staff, and patient representatives/guardians.

The training was offered to selected PCN MDT and adult social care teams across Devon and delivered in different formats across a range of settings, including healthcare centres, event spaces, and simulation suites. Alongside the project, a formative and summative evaluation gathered data from both participants and training delivery stakeholders, to assess multiple aspects of the training associated with the clinical and care context, delivery mechanisms, project outputs and potential outcomes.

The project delivered five training events in total, with a pilot session at the outset, followed by a full training event. A second pilot was then run to refine aspects of the delivery, followed by two more full training events. The aim of the parallel evaluation was to understand whether simulation-based training could be an effective learning tool for raising staff awareness and confidence in engaging with early cancer detection and end of life care in the selected settings, and whether it had potential relevance to be applied in other regional and national primary and adult social care settings.

The results clearly show that participants found the training highly relevant to their work; felt they had gained confidence and were more willing to engage with challenging discussions around end-of-life care, and early cancer diagnosis; and were happy with the way the training was organised and delivered. Evidence from the debrief and training team

washup discussions raised important points regarding best practice and offered useful suggestions for how to develop the programme in future.

Given the high levels of satisfaction expressed and the organisational and individual levels of learning achieved across all pilot and training events, it is clear that this project has successfully delivered effective and valued simulation-based training, and that it would be of significant value to many others both regionally and nationally. Key to any future programme rollout will be identifying a sustainable funding model.

Recommendations

- Broaden the topic offer to include other system-level priorities, as well as training and knowledge gaps identified through further market research within the sector

- Offer a simulation-based training programme to all PCN and adult social care organisations across the wider southwest of England

- Invitation materials need to provide sufficient information to reassure potential participants that being the active learner is voluntary and not mandatory

- Group size should be no more than 10 participants per scenario, so larger cohorts need to be split into smaller groups, with associated additional training and debrief facilitators and ESPs (the sim training 'faculty') to ensure the most effective experience for all learners

- Use trained actors as ESPs, as this delivers a rapidly immersive experience and enables the scenario to be adjusted according to the specific cohort of participants on the day

- It is important for participants to experience two scenarios during a training session, to help embed the learning and enable time for trust to develop to support deeper discussions and the creation of a safe and comfortable debrief space

- Debrief sessions need at least two facilitators to support the in-depth discussions; these facilitators should include the trainer and, if possible, the ESP(s)

- Provide handout sheet to take away with good practice guidelines and signposting info

- Consider the training location carefully to achieve a balance between fidelity to context and convenience for participants. The immersive experience can be enhanced by delivering training in a dedicated simulation suite, but it is not essential. Different scenarios have different levels of tolerance in terms of context fidelity, so some training may be offered on site; other training offered in a dedicated simulation suite

1. **Background and Context**

1.1 VOCAL Simulation Project Purpose

The aim of this Simulation Training project is to have a greater understanding about what can be delivered for early cancer detection and end of life care for multi-professional clinical teams in Primary Care Network (PCN) settings. PCNs are groups of GP practices working more closely together, with other primary and community care staff and health and social care organisations, providing integrated services to their local populations. End of life care and earlier cancer diagnosis were identified as key system priorities by the Integrated Care Board, and were, therefore, chosen as the target themes for the project.

To achieve its purpose, the project established a Simulation Training Fellow, to lead on the design and delivery of a range of joint health and social care scenarios for collaborative learning in practice (CLiP) training. The scenarios developed specifically for the project included situations located in care homes, private homes, and clinical settings; and focussed on interactions with patients with learning disabilities, care staff, and patient representatives/guardians. The project was designed to test new opportunities for delivery of training and integrated working, which, as noted above, is currently lacking in Devon.

1.2 Project Context

Working with the CCG/ICS and other stakeholders associated with the provision of health and social care in Devon, DTH and colleagues have identified a need to expand the training solutions currently available in the region. Primary Care Networks (PCNs) working with multi-disciplinary (MDT) Health and Social Care Teams need to expand and develop their knowledge and skills in order to work effectively together. Due to a lack of joint training opportunities, Social Care colleagues often miss out on opportunities to learn from Health colleagues, and vice versa. Thus, by bridging this gap and offering MDT-inclusive simulation-based training to PCNs in the area, the intention was to promote widening participation and a more integrated and adaptable training offer.

Project objectives:
- Establishment of the Simulation Training Fellow
- Creation of several joint health and social care scenarios for CLiP learning
- Delivering a set of simulation-based training sessions
- Evaluation of multiple elements of the simulation-based training design and delivery process, outputs, and potential outcomes

2. SIM Training Project description

2.1 Purpose of SIM Training

Simulation-based learning has been used in many forms over the centuries, however, the sector began to take off in the 1960s when 'business games' emerged and then evolved into more mainstream simulation software, tools, and games [1, 2, 3, 4, 5]. Simulation-based learning has transformed these games into virtual reality tools that incorporate life-like

features, mirroring the 'work context' in which learners apply their knowledge in a safe environment [6, 7, 8].

Simulation-based learning facilitates deeper understanding of concepts, and the relationships between them; advances inquiry and problem solving; and deepens decision making. Simulations are the most effective means to facilitate learning of complex skills and communication, enabling participants to build upon their existing knowledge in a safe environment. As indicated by Chapman and Martin [9], the use of simulations can enhance capabilities such as teamwork, problem-solving, decision making, and critical thinking. This experiential learning process increases learner motivation and retention by providing a challenging, life-like, and meaningful context for learning [7, 10, 6, 11].

The simulation-learning approach also allows an important period of reflection and debriefing, to explore the learning achieved. Learners receive feedback on simulated decisions made in response to a changing situation. This enables students to 'experience' and 'see' results of their decisions, and to reflect on the pros and cons of their choices [12, 13, 6].

Simulation-based training provides learners with opportunities to practice authentic, true-to-life scenarios, implementing different types of scaffolding to facilitate learning. Simulation- based training has been widely applied within an acute environment, with already established positive impacts on individual learning and patient outcomes. However, little is known on the impact of simulation-based training within a primary care setting.

2.2 Scenario development

The scenarios were developed according to the key ICB system priorities noted above. Initially the IRIS system was interrogated to identify any pre-existing scenarios that could be used in a primary care setting. Out of over a thousand available scenarios, however, only 11 were even marginally suitable, hence the need to develop a set of bespoke scenarios for this specific context.

The overarching ideas for each scenario were drawn from clinical experience, and from widespread recognition that early cancer diagnosis leads to better outcomes in this setting. Screening is a critical tool in early detection, so promoting screening is key. Hence scenarios were developed to focus on early detection and identifying opportunities to promote screening uptake. For end-of-life care, the quality of discussions with patients and carers was identified as a key target, with TEP form completion with relatives as well as symptomatic recognition of end of life being staff-identified priorities. Prior to each event, the chosen scenarios were adapted specifically for each context to ensure that they aligned to the specific training needs identified by the participating PCN or social care providers.

2.3 Recruitment of participating PCNs

Participating organisations were selected based on a mixed modality approach. Fingertips public health databases were used initially to identify QOF achievement, for example, to identify low attainment in cervical screening uptake. This data (up to 2021) was then used to create a spreadsheet which was overlaid with demographic data on cancer prevalence, new cancer cases, and QOF markers of cancer care reviews, as well as emergency admissions with cancer. The data on percentage attainment of cervical screening uptake, breast and bowel cancer screening uptake was then mapped across all 31 PCNs across Devon. Using the combined criteria, data were then ranked the rankings used to select PCNs. These PCNs were then invited to participate in the project, with those who came forward first being selected. For the final training event, an open call was made to all PCNs and social care organisations in Devon, inviting them to participate. This was done to provide an additional opportunity for any Devon-based PCN or social care organisation to try the simulation training approach.

2.4 Delivery of SIM training

Prior to each training event, the first step was to orientate the scenarios to the specific setting and context required by the participating organisation(s). The tailored scenarios were then pre-briefed with the ESPs and the facilitators to ensure consistent understanding across the delivery faculty, and identify any last-minute issues, challenges or amendments. This scenario refinement process happened at least a day before the event.

On the day, participants were given an overview of the purpose and structure of the day, and an introduction to the ideas and practices behind simulation-based training, including participant wellbeing and the importance of creating a safe environment for learning. A volunteer active learning participant was self-selected from the group for each scenario, with each active learner being given the candidate brief and a few minutes on their own with the facilitator to ask questions. The candidate brief was also read out to the group, for the benefit of all, with an opportunity provided to identify any unfamiliar terms/concepts.

Once the ESP was ready and in situ, group was asked to move to the simulation room, whilst the active learner remained outside to prepare for the scenario. Once ready, the active learner joined the group, and the scenario began. The length of time taken by each scenario was driven primarily by the active learner, with arms-length guidance by the facilitator to ensure that all learning points had emerged.

At end of each scenario, all participants were invited to reflect on the experience. The debrief format followed a three-phase debriefing technique [14]; reaction, analysis and summary. This ensured that all participants, including active participants and observers, shared in the discussion and had an opportunity to reflect on how the process felt from their unique perspective, and relate the emergent learning to their own job role.

3. **Evaluation Objectives**

3.1 Purpose of the Evaluation

This evaluation was designed as a process-based evaluation in that its purpose was to 'test' the design and delivery of a short programme of simulation-based training in a primary care setting. The aim of the evaluation was to understand whether simulation-based training is an effective learning tool for raising staff awareness and confidence in engaging with early cancer detection and end of life care in a selected group of Primary Care Network (PCN) and care settings. A secondary aim was also to understand whether this model of training could be rolled out for multi-professional clinical teams and adult social care staff in the wider southwest of England, and beyond.

The evaluation collected perceptions, insights and feedback on the project and its delivery from both training participants and delivery partners. This data has enabled us to understand how useful and relevant the training was to participants; gather feedback on the content and mechanisms of training delivery; and collect insights and observations on how this method of scenario-based training might be improved or developed for future programmes in similar settings.

The objectives of this evaluation were:

- Design and delivery of a questionnaire to all participants attending training
- Collection of participant reflections during training ('participant debrief sessions')
- Design and delivery of a set of semi-structured interviews ('washup' discussions) with key delivery partners (those involved in designing and delivering the training)
- Collation and analysis of all strands of data (questionnaire, participant debrief sessions, washup discussions)
- Production of an evaluation report

3.2 Evaluation Methods and Tools

The evaluation used a mixed method approach (post-session questionnaires, participant reflections during training (debrief sessions) and semi-structured interviews with delivery partners ('washup' discussions)) to collect both qualitative and quantitative data on the **context** of the training, the training **process**, the **outputs**, and potential longer-term **outcomes** (impacts). The project used a formative as well as summative evaluation approach by including two pilot training runs alongside the three training events. These two pilot runs – one at the beginning and one part way through the project – allowed the project team to reflect on the process of training delivery and scenario content, adjust, and continue to develop the delivery tools and process. This formative approach also enabled the evaluation team to test and refine the evaluation tools. Data from both pilot runs and full training events is reported below.

Copies of the evaluation tools (participant questionnaire and 'washup' discussion interview schedules) can be seen in **Appendices A1 & A2**. Full sets of graphical data of the questionnaire results from each pilot run/training event can be provided on request. In

summary, the questionnaire, training debrief and washup interviews were designed to collect the following data:

- Perceptions on need for training (knowledge and experience gaps that this project could potentially fill)
- Feedback on whether this type of simulation training offers something more than traditional approaches to training (e.g., classroom based)
- Feedback on willingness and commitment to participation (whether important enough to commit time to attend)
- Feedback on participants' perceived ability to implement learning (direct connection to perceived need; relevance to participants' own context; impacts on future practice)
- Feedback on the value of the programme in general in filling knowledge and skills gaps
- Feedback on the quality of training delivered
- Feedback on practical aspects of the training (timing, location, and duration)

Questionnaire

The questionnaire was distributed to all training session participants. The main body of the questionnaire consisted of a mix of open and closed questions, both single and multi-choice response options, and used a consistent Likert scale to gauge levels of agreement or disagreement to key statements. Metadata on the date and location of the training, and the job role of the individual completing it was also collected.

The questionnaire was designed to gain participant feedback on the quality of content and method of delivery of the training; on their perceptions of the usefulness of the training; and on the impact that they expected the training to have on their future practice. Paper questionnaires were handed out to all participants at the end of the training, and time allocated before the close of the session to enable them to complete it. Completed questionnaires were placed in a collection box. Completion of the questionnaire was entirely voluntary and anonymous; no personal or identifying information other than job role was collected. Job role was collected to ascertain the spread of roles attending and was not associated with questionnaire responses during data analysis. Data was analysed using Excel, with graphs produced for each closed question, and thematic analysis, with a set of quotes produced for each open question.

Debrief sessions

Debriefing participants was a key part of each training event. On completion of each scenario, participants were asked to reflect on how the simulation felt; the challenges faced, and any learning and action points. In evaluation terms, these debrief discussions provided insight into how participants experienced the simulation training, and often included suggestions for improvements to both scenario and delivery mechanisms, to support better fidelity. These discussions were not audio recorded but written notes were taken by the evaluator.

Washup discussions

Immediately after each training event, semi-structured interviews, or 'washup discussions' were conducted with those involved in designing and delivering the training (trainer, ESPs), to gain reflexive feedback on the practical aspects of scenario delivery; the value and novelty of the training (compared to more traditional training methods) and potential adjustments and developments for future programmes and events. These discussions were audio recorded (with the consent of all participants) and summary transcripts produced for further analysis as part of the evaluation.

Ethics

This evaluation project was subject to thorough review by the University of Plymouth Faculty of Health Research Ethics and Integrity Committee. Ethical approval was granted prior to any evaluation activities taking place. The draft questionnaire was piloted by colleagues within the wider project team, and with training participants at the first pilot run in February 2023. Minor revisions were made, and the final version delivered to all subsequent training events. The semi-structured interview (washup) discussion schedule was also piloted at the first pilot run.

All of those participating in the training were offered the opportunity to participate in the evaluation; no participants were excluded on any grounds. All participants (training participants, training providers and all other stakeholders) were fully informed of the evaluation activities and asked for their informed consent to participate. Participants were given information about the purposes of the evaluation, their rights as a participant, and the conditions of their participation were clearly stated in accordance with the University of Plymouth's Research Ethics Policy and Code of Good Research Practice.

4. Results

Separate evaluation results for each training event are presented here. The data for each event has been summarised and organised by evaluation tool (questionnaire; debrief discussion with participants; washup discussion with training delivery teams), with key metrics selected to highlight emergent themes. These emergent themes are further discussed, and key lessons drawn from them, in the Discussion section (section 5).

4.1 Pilot run 1

Date: Wednesday 22nd February 2023
Location of training: Consulting room in an East Devon medical centre.
Trainers: trainer + one ESP (DTH staff member)
Attendees: 4 participants + evaluator
Attendee job roles: Mixed – see **Table B1**
Scenarios used: Learning Disability – administrator/receptionist; Cervical (Bowel) Screening – wellbeing practitioner

This pilot run was the first of two planned pilot events, to test the newly designed scenarios and their delivery mechanism in a small practice in East Devon. From an evaluation perspective, this also offered an important opportunity to pilot the questionnaire and

washup discussion evaluation tools. Four members of the Practice staff participated in the sim training, bringing a mix of specialisms and perspectives. Two scenarios were run, with all attendees in a single group. The first scenario was run with a member of the reception team as the learning participant; the second with a social prescriber as the learning participant.

Questionnaire data

All four participants returned a completed questionnaire (100% response rate). The responses received were all positive, with all participants either strongly agreeing, or agreeing, that the training was of interest and value to them and would have positive impacts on their day-today practices. All four felt that the training sessions were well organised, with sufficient time allocated to both the simulation aspect and the debrief discussions. There were some issues during the running of the first scenario, in terms of how the instructions mapped onto specific sections of the IT systems within the practice (see debrief session results below) which resulted in lower agreement scores for the statement '*The training materials were clear and well structured*'. In addition, participants did not necessarily agree with the statement '*My previous knowledge was sufficient to understand the content of the session*' (25% agree, 50% slightly agree, 25% slightly disagree), highlighting a potential issue driven in part by participants' diversity of roles in relation to the topic of the scenario. These points were discussed further during the debrief session (see below). The following comments highlight participants perspectives on their experiences, and the value of the simulation training:

Table 4.1 Participant comments, Pilot run 1, 22/02/2023

What did you particularly like about the simulation training?	What could be improved?	What impact do you think your attendance at this simulation training will have on your everyday practice?
Practical and discussion session mixed together helped with learning	*Perhaps a whiteboard to be used to keep track of key ideas/lessons learned as a whole group*	*Better understanding of roles, and also QOF box use*
We were made to feel at ease. Reviews done regularly throughout the morning		*Reminders to look at other points, other than those I thought I would focus on*
The ability to review areas that I don't normally address, sparking/reminding me of others		*Opening my mind to new things. Allowed me to recognise other roles' input*
Insight into others' roles. Useful to reflect on clinical considerations not usually part of my job role		*More awareness of physical health considerations*

Debrief session

The debrief discussion for this first pilot run provided useful feedback on the fidelity and operational aspects of the setup and information provided to the learning participant. There was a lack of coherence between the scenario and the way that the systems are set up to deal with appointment no-shows in this practice which, participants felt, caused some jarring and a stilted start to the simulation, and led to a lower level of 'buy-in'. This wobble

did, however, result in some useful discussion around how to resolve the issue and create a better set of instructions, and a simulation scenario 'toolbox' which could include laminated screenshots of the different screens likely to be encountered within the different systems, that could then be attached to the computer monitor to help create a more realistic environment.

Some participants felt they would have been uncomfortable if they had been asked to be 'in the hot seat' (as a learning participant) so it was felt important those in the 'hot seat' are self-selected volunteers, as not everyone feels comfortable in that position. Despite the challenges at the start of the session and initial fears about what they would be asked to do in the simulation context, participants said that they felt a lot more engaged when compared to normal (classroom-type) training.

Washup discussion

The washup discussion was an opportunity for the trainer, ESP, and evaluator to reflect on the setup, content and delivery of the two scenarios. As this was the first pilot run, there was considerable discussion on the mechanisms of delivery as well as debrief feedback and experiences. The scenario used in the second group was written around cervical screening, but as the ESP in this instance was male, it had to be changed to bowel screening at the last minute. This issue highlighted the need for scenarios to be written in such a way that they can be adapted and produced for sharing at the last minute. It was noted that this can be difficult where paper copies of instructions are needed for ESPs and participants. Scenarios are difficult to make 'real' for every context and there is clearly a tipping point between what is similar enough to reality to enable a participant to run with it, as opposed to being so different that it undermines the feeling of fidelity.

The discussion also focused on how to make the participants feel comfortable and create a safe space where they could openly and honestly share feedback, both positive and negative. One idea was to open the discussion with the whole group by asking the learning participant how the experience felt to them. That approach worked well with this group and enabled them to open up about their hesitation and nervousness before the session, which had been dispelled once they realised that they didn't all have to engage in the role-play.

The scenario topic and context were also discussed. It was clear from participant reactions that which topics feel comfortable to 'tackle' depends on the participants' personal experiences. In that respect, it's good to have a range of scenario contexts and be aware that personal experience might impact on how the scenario plays out, for example. One idea suggested was to create a mini-handbook for ESPs with multiple context-adjustable back stories so that scenarios could be adjusted at the last minute.

The following additional points also emerged from the washup discussion:

Context

- This type of sim training within the PCN setting and context also provides an important opportunity to flag up systems issues in the Practice that are preventing

opportunities being taken, as well as encouraging participants to spot new opportunities to engage.

- Scenarios are difficult to make 'real' for every context – complexity of systems etc. Tipping point between what is not too different that learning participant can run with it, as opposed to too different that stops them from running with it.

Process

- Good engagement in discussions – everyone participated. No-one seemed to feel 'why am I here?'. Lots of spontaneous discussion between participants. Everyone contributed well to the discussions.

- It was quite difficult to know what to tell them to expect in the preparatory materials. The preliminary material needs to give them enough information so that they are a little bit prepared, but not prevent the spontaneity needed on the day. Getting the pre-information and the information on the day right, is critical for people to feel relaxed.

- Options for the ESP to steer the scenario one way or a different way on the day worked well and is a strength of the scenario design.

- An option could be to include a 'feisty' scale for the ESP to draw on, to take the role play in a particular direction, depending on the responses of the learning participant. It could then make the scenario closer to reality and provide an opportunity to have an uncomfortable experience in training, where it is safe to do so. However, it would be critical to avoid creating an experience that puts them off Sim training in future. A fine balance and careful management would be needed.

- Who the ESP is on the day influences which scenarios can be run – i.e., gender; age; context etc. For that reason, it is important to know in advance who that person will be, as well as the mix of job roles that are likely to be in the trainee group on the day.

- In terms of the instructions given to the ESP, it was suggested to include a set of bullet points after the narrative to use as a crib sheet whilst the scenario is running. This would help to avoid having to read through all the text to find key information during the scenario.

- There was discussion of whether to use a member of staff from the practice as the ESP. Later discussion resolved this, when it was felt better to use an experienced actor who can adjust and respond to the scenario as it unfolds. Having an unfamiliar person as the ESP also creates better fidelity as the role-playing participant sees a person in front of them who is not a fellow member of staff.

- Group size of 4-6 people is good. This group size felt about right and ensured that not everyone had to be an active role player. More than six people was felt to be too large for a group to ensure equitable learning experiences.

- It would have been useful to have had a whiteboard/flip chart or some mechanism to put learning objectives up on, to keep people thinking about the key points and the take-home messages. Useful for the debrief, and to capture ideas and things they might do differently, such as action points for the practice as well as individuals.

- The content and shape of the debrief discussion afterwards is dependent on what came out during the scenario, so the trainer needs to be able to bring up the learning outcomes during the debrief discussion session if they haven't emerged during the scenario itself. There is a balance between how well the scenario points out the learning outcomes, and how well the ESP brings those aspects out through their responses. Key is to have an ESP who has clinical knowledge and is aware of the learning outcomes, to shape the interaction so that those learning outcomes are achieved during the scenario.

Outcomes

- The trainer needed to pose a few leading questions to get participants to think about the key learning outcomes. Ideally more solutions would come from the room, rather than having to be prompted. Also clear that the trainer needs to have knowledge of the PCN and/or practice context so that they understand the barriers and opportunities and can draw those out during the discussions.

- Key in terms of learning outcomes is what this particular Sim training session aims to achieve. The objective is to lead participants to think about, and spot, opportunities to engage patients with screening for early cancer diagnosis, so trainer/discussion facilitator needs to be clear on that aspect.

- It could be useful to have a handout of resources for participants (shaped to each scenario) to distribute at the end of the session. That could also deepen impact if participants can use those resources to pass on information to patients. Helps also to embed and reinforce the action plan that emerges during the discussion.

4.2 Training Event 1

Date: Tuesday 25th April 2023
Location of training: Hospitality boxes at an East Devon football club
Trainers: trainer + three ESPs (NHS Trust-based Sim suite Team)
Attendees: 32 participants split into 4 groups (two hospitality boxes; Box 1 ran a different scenario with each of the two groups; Box 2 repeated the same scenario with each of the two groups) + evaluator
Attendee job roles: Mixed – see **Table B1**
Scenarios used: Box 1 – Scenario 1; End of life relative – clinician; Scenario 2 Bowel screening patient – HCA/Nurse
Box 2 – Scenario 1; Learning Disability missed appointment relative – administrator/receptionist. Scenario 2; Learning disability missed appointment relative – administrator

This event was the first full-scale event, delivered during a 'shutdown afternoon' with an East Devon PCN. The event was held at a local football club ground, with two sim training sessions delivered simultaneously in two of the club's hospitality boxes, overlooking the football pitch. These two sessions were then repeated with a new group, so four sim sessions were delivered in total to four different groups of participants. Each session lasted around 50 minutes. The team washup discussion was held directly after the delivery of the four sessions.

From an evaluation perspective, this first full training event was valuable in that the location of the training was very different from the pilot run, held in a PCN Practice. A total of thirty-two participants had signed up for the sim training, from five different Practices within the PCN network. These participants were allocated to mixed groups, bringing a mix of specialisms and Practice perspectives to each group.

Questionnaire data
The sim training for this event was part of a larger training event, organised during the network's shutdown afternoon. A total of 26 completed questionnaires were received from the 32 participants, representing a response rate of 81%. In the questionnaire, several participants included comments highlighting their reasons for choosing to attend the sim sessions: '*There were three options for the day's activities. Not done SIM before, so thought it would be good to try*'; and '*Interesting learning how different surgeries work*'.

In terms of the organisation of the training (location, timing, topics covered etc), the feedback was entirely positive, with all participants either slightly agreeing, agreeing, or strongly agreeing with the questionnaire statements (see Question 3 in **Appendix A1**). One respondent suggested having both clinical and non-clinical sessions (see also **Table 4.2**) available and a second respondent felt there could have been more structure to the debrief discussion with more facilitation from the discussion chair.

Responses to Question 4 were also largely positive, although two individuals (8%) felt that they did not have sufficient previous knowledge to enable them to fully understand the content; and one individual (4%) did not feel that the content was well illustrated with examples. One respondent felt more information on the session could have been provided up front: '*Info regarding aims of session would have helped – not sure what had signed up to*'. In terms of the delivery of the training (pace of delivery; opportunities for active participation; time for questions and explanations etc), all responses were positive, with one respondent commenting: '*Safe and gentle discussion*'. In Question 6, respondents were asked to reflect on the impacts of the sim training on their everyday practice, and responses were largely positive (see **Figure 4.1** below). Some respondents, however, disagreed with the statements, which may have reflected a lower level of relevance of the scenario topic, to their specific role.
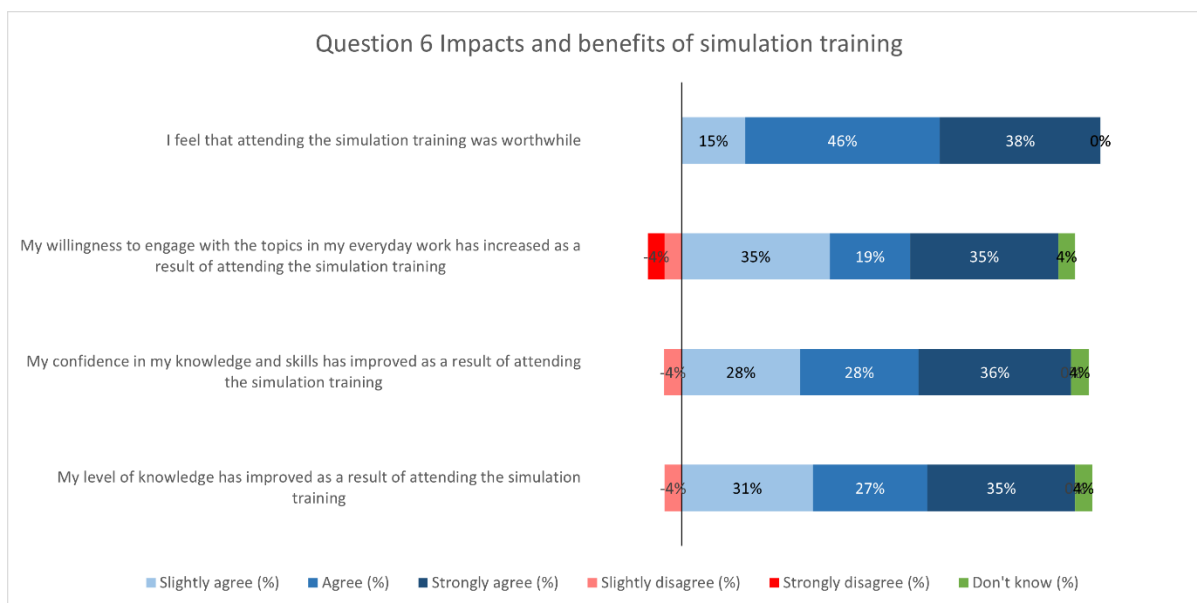
Figure 4.1 Training Event 1 – Impacts and benefits of simulation training

The following comments highlight participants perspectives on their experiences, and the value of the simulation training:

Table 4.2 A selection of participant comments, Training event 1, 25/04/2023

What did you particularly like about the simulation training?	What could be improved?	What impact do you think your attendance at this simulation training will have on your everyday practice?
The way it works – discussion, different view points	*Clearer aims at start? Relevance for non-GPs?*	*Phraseology to use*
Relaxed and informal	*Greater MDT involvement (lots of GPs in group!)*	*More understanding of reception role*
Seeing the other roles and how they would handle the situation	*More relevant topic to my role*	*Interesting. To get different ways of tackling an issue*
Practical example, relevant to general practice	*Nothing*	*Increase knowledge of services*
Got some idea about how each practice works	*Bigger group*	*Learning from other practices*
No pressure to perform	*Give staff more training to deal with difficult situations*	*Made me think*
Opportunity to talk and share knowledge	*Shorter discussion time and more structured*	*Got some insight about what can happen on a daily basis in practice and try to improve*
Felt like safe space	*More wide-ranging*	*Check patients are not sat in waiting room/forgot to check in*
Great MDT session	*Nothing*	*Good reflection and to talk through other strategies*
First time of attending this training – it was very good Interaction	*A mixture of different PCNs (we were all [from one Practice])*	*Will use ICE!*
Being at my 4 weeks at the practice as Practice Nurse, the simulation training really made me think about the approach to	*As the only GP in the room, I'm not sure I took away much learning, but happy to*	*Knowledge/advice patient understanding*

the patients and how to explore more ways to get a patient to open-up	participate. Good to engage with colleagues	

Debrief sessions

The debrief discussions were led by the trainer/ESP leading each group, with all participants invited to contribute if they felt comfortable to do so. Some of the discussions drew personal reflections from participants because the scenarios had specifically resonated with their own personal experiences. Several clinician participants noted that the end-of-life scenario had felt 'real' to them, as the context was close to their everyday experiences. Other clinician participants had expected more a challenging end of life scenario, with relatives 'coming out of the woodwork' and 'parachuting in'. These different experiences helped to create debate between participants and resulted in some sharing and awareness of different experiences in the different Practices within the PCN.

Other sessions produced good discussion between participants on the practicalities and practical aspects of the different systems in each practice and led to some organisational-level learning outcomes around how things could work differently, with participants sharing best practice, tips, and practical solutions. These discussions were stimulated by some good questions posed by the trainer, including '*what have you picked up to take away with you from this session*?' and '*What new information will you go and seek out as a result of this session?*'.

Washup discussion

This event was run with support from an NHS Trust-based Sim suite team. The Sim suite team supported the scenarios as ESPs and trainers and contributed significant experience and insight during the washup discussion. Having this debrief with a highly experienced Sim suite team provided a lot of key insights and suggestions for adapting best practice specifically for PCN settings.

In Box 1, a different scenario was used with each of the two groups; in Box 2, the same scenario was used with both groups. In Box 2, running the same scenario twice pointed up impact of the mix of attendees in the group, and how that influences the flow of both the scenario itself and the debrief discussion. For example, the first group in Box 2 consisted of staff from four or five different practices, which meant that during the debrief there was more discussion around organisational differences; '*well we do it this way; this is the system, this contrasts with our system …..*'. These differences led to a more lively debate with discussions focussing on potential system improvements in each practice, and deeper personal insights into alternative ways of working. In the second group in Box 2, five participants were from the same practice, leading to less debate; '*yeah, that's how we do it*', with just one individual from a different practice. As a result, the debrief was less animated than in the first session, with less personal insights from alternative perspectives.

In Box 2, the two different scenarios played out in different ways, because of the different levels of experience of the participants. For example, the first scenario lacked a clear direction for a bit before coming to a natural conclusion, whereas during the second scenario, the GP was more experienced and quickly took charge to move the scenario forward. The participant in this case also involved one of the other participants by asking for their advice, which added to the scenario (the individuals were from the same practice). The washup discussion explored whether the differences in the way that the two scenarios ran reflected the specificities of different roles within different practices, as well as the mix of participants, and may also represent differences in participant personalities. One of the experienced members of the Sim team reflected on how well the event had run: '*Have we got the right tools; is it in the right setting; does it look right and does it feel right for the people; getting the fidelity right. Given the circumstances that we were in today (football club hospitality boxes), people bought into it reasonably well, considering we're sitting at a table overlooking a football pitch*'. Sim suite team member.

One of the values of this kind of SIM training with MDT teams, is that the staff can all step into each other's shoes for a while, which is an excellent opportunity that is not often available. It provides a safe space to ask '*I really don't understand how your system works*' which is a unique opportunity.

During the discussion, the term 'Naked Sim' emerged; referring to the fact that compared to a simulation suite training event, this was Sim training stripped back and a lot more 'hands-off' than it would be in a sim suite. So not every aspect is so tightly controlled – in fact, a lot is not controlled, yet it worked very well. This experience highlights that it is not necessarily essential to have 'whistles and bells' to achieve an excellent Sim training experience. 'Naked Sim' is an effective tool to deliver training in a PCN setting and can result in the 'lightbulb' moment where different MDT team members realise '*oh, so that's what you do'*. In this respect, the learning achieved can be wider than the planned learning outcomes for the specific Sim scenario.

The following additional points also emerged from the washup discussion:

Context

- Feedback from the PCN practice managers in setting up the sessions, is that they don't want people going off site to do something which doesn't have direct relevance – they want the Sim training to be relevant to, and located within, their specific context – hence the shutdown days are a good opportunity to use for the training, whether delivered on or off site.

- Although several participants said that they valued working with participants from other practices in their PCN, there can be existing politics or tensions between practices within a PCN that may make that difficult in some places.

- There is a newly published report by HEE (now NHS England) regarding the need to develop sustainable simulation training models. This project can, therefore, potentially support that ambition.

Process

- At times, there was a need for the ESP to 'think on his feet' to respond the actions of the participant (the clinician wanted to speak to the patient in the learning disability missed appointment scenario, requiring the ESP to 'fake' a mobile phone call to the patient (his son)).

- During the debrief in Box 1, there wasn't much discussion about different ways of doing things. Instead, the debate opened up into discussions about health inequalities, for example LGBTQ+ patients trying to access health care on an equal basis. In this group it felt quite difficult to get the cross-pollination discussion (of different ways of doing between practices) going.

- The trainer did manage to draw out differences in different people's roles during the sessions in Box 1. Those conversations felt very productive, but it took a while to drill down into that.

- In the first session in Box 1, the key that unlocked the whole discussion was a participant sharing their own experiences of having an end-of-life care conversation with their parent, and that really unlocked the personal side to the whole discussion – prior to that it had been a more clinician-centric discussion.

- It would be useful to have prompts on the debrief sheets to help trainers to draw the discussion to a deeper and more nuanced level

- Key to achieving that depth of discussion is achieving a feeling of psychological safety in the group, to allow people to draw on, and share, their personal experiences of the scenario context

- Building a sense of trust between participants at the outset is important. Once people have been to one sim training event, they understand how it works, so if they attend another session, they already have some trust in the safety of the space

- Setting the scene, generating buy-in and developing that trust by creating a comfortable space at the outset, helps to achieve a feeling of safety and the debrief discussion can take off and deepen more quickly than would otherwise be the case.

- The way the room is arranged is also key to achieving fidelity – preferably for the learning participant not to be facing the audience, so that if the audience is quiet, it doesn't feel like a 'performance' – it feels more like a real situation and immersion happens more quickly.

- In the first group in Box 2, the trainer had to say very little to start the debrief as participants were asking each other questions and bouncing ideas off each other. The take-home messages emerged naturally and were identified by the participants

themselves as part of their discussions. *'That's the way it should be and is evidence that the participants have bought into it enough to become immersed in the scenario. That's what you're hoping to achieve each time'*. Sim suite team member

- *'The hard work goes into getting that ball rolling – the trick is crafting that right question to get that cross-pollination started. So the debrief topic prompts need to be carefully designed as open questions, provocative ones, which can really get the discussion moving.'* Sim suite team member

- It is important to have the right number of faculty to deliver the scenario and debrief discussion successfully, and that needs an additional debriefer (ESP/trainer with knowledge and experience) alongside the main trainer/debriefer, to support the discussion, help steer and take the pressure off the lead trainer. One person debriefing is not enough – they cannot pick up all nuances and support the group effectively enough to develop the safe space.

- Knowing who the discussion is best aimed at is also key, but ultimately, the scenario is the jumping off point for the conversation; it's just a starting point. The purpose of the training is not to examine someone's performance as in a structured examination.

- The scaffolding of the scenario (for trainer, learning participant and ESP) needs to be specific enough to get it going but not so rigid that people say *'well we don't do it like that'*. It's a challenge to get that right for each different scenario, and each different mix of participant personalities and job roles.

- The scenario needs to come from reality to achieve the crucial fidelity and 'buy-in', so it can help if the trainer asks *'have you come across someone like that*?' Enough fidelity to engage but not too much to overshadow.

Outcomes

- The outcome of those deeper discussions is a better understanding of how others work, and the impact of each other's work on both patients and other staff. There is connectivity within practices, and PCNs recognition of that, can usefully emerge from the debrief discussions. That awareness supports better development and understanding of how different professionals can be more interlinked and aware of colleagues' skillsets and roles. This results in wider 'actions for the practice' outcomes beyond the individual learning goals.

4.3 Pilot run 2

Date: Wednesday 10th May 2023
Location of training: Consulting room in an East Devon medical centre
Trainers: trainer + two ESPs (NHS Trust-based Sim suite Team)
Attendees: 2 participants + evaluator

Attendee job roles: Nurse Practitioner; Advanced Practice Apprentice Paramedic (**Table B1**)
Scenarios used: Scenario 1; COPD – Nurse Practitioner. Scenario 2; End of Life (patient) – Advanced Practice Apprentice Paramedic

This pilot run was the second of two planned pilot events, to reflect on the scenarios and their delivery mechanism and assess any adjustments made or needed before the next training run. From an evaluation perspective, this also offered an important opportunity to reflect on how well the questionnaire and washup discussion evaluation tools were working, and to make any adjustments needed.

Two members of the Practice staff participated in the sim training. Two scenarios were run, with all attendees in a single group. The first scenario was run with a Nurse Practitioner as the learning participant; the second with an Advanced Practice Paramedic as the learning participant.

Questionnaire data
Two completed questionnaires were returned (100% response rate). The responses to all questions were positive with both participants agreeing that the training was well organised; the topics of interest; and the atmosphere during the sessions felt supportive and safe. One process issue emerged during the second (End of Life) scenario in that the participant was not clear whether they were expected to take observations, as they would normally do; whether they should 'go through the motions' and pretend to take the observations; or whether the trainer would hand them a sheet with a set of obs on it. This resulted in a slightly clunky session, but it highlighted that clarity of information is needed at the outset for both participant and ESP(s) to ensure the fidelity of the scenario is not disrupted. Also in this scenario, the participant was unable to give the patient the necessary injection as they didn't have their glasses with them. Again, this required some intervention by the trainer, which slightly reduced the fidelity of the scenario at that point. **Table 4.3**, below, highlights some feedback recorded in the questionnaire, which reflects these issues.

Table 4.3 Participant comments, Training event 1, 25/04/2023

What did you particularly like about the simulation training?	What could be improved?	What impact do you think your attendance at this simulation training will have on your everyday practice?
I have a real interest in EOL care, I enjoyed the interaction between trainers and my colleague. Excellent patient!	*Observations to be taken, then trainer to say numbers? Some confusion as to 'should we be performing the obs' or just say what we would do.*	*I will certainly think more – is everything in place. Improve communication with MDT, GPs etc. Ensure exellent communication. Dignity and respect.*
Very informal discussion. Interesting topic	*Obtaining obs appeared slightly disorganised*	*Heightened awareness around EOL and the impact of stress and its lasting effects on relatives*

Debrief session

During the debrief discussions some deep and insightful points emerged despite there only being two learning participants during this pilot run. In this debrief session there was markedly more sharing of personal experiences, reflecting the fact that the two participants were from the same practice team, knew each other and felt safe and supported enough in the space to share. Both participants said that they had felt 'put on the spot' at the start of training, and were nervous about what was expected of them, but that those feelings had eased as the scenario got going.

Both scenarios in this pilot run were based outside of the clinical setting: the first in a private house; the second in a care home, and recreating that environment proved difficult. The Sim suite team had brought a few small props (a cushion, a blanket, some headphones) to help create these contexts but the sense of being in a clinicians consulting room remained, which had an impact on the ability of participants to 'suspend belief' that they were in a training session. There was also some 'clunkiness' in the second scenario as one member of the sim suite team had to play the roles of both relative and care home manager, again, undermining the fidelity and feeling of immersion to some extent. These issues are further discussed in the washup discussion section, below.

Washup discussion
The washup session again benefitted from the experiences and insights of the Sim suite team. It was noted that the two scenarios during this pilot run were quicker than previous sessions although the debrief discussions had been deep and insightful.

In terms of the practical aspects of the scenario, the patient (ESP) had been able to influence the direction of the scenario to a large extent, which led to discussion and reflection on the level of training and awareness needed by the ESP, to ensure that the scenario played out as planned and achieved the learning outcomes. This prompted further debate on whether the ESP could be from an external specialist agency, rather than a participant or member of staff, and how much clinical background and knowledge they needed to be able to influence the way the scenario played out and to guide it back on track, if necessary, without intervention from the trainer. There was further discussion centred on whether it was better to have a human actor to play the patent, or whether a manikin could be used instead, to reduce costs. The consensus was that because of the ability of the human actor to redirect things and either increase or decrease pressure on the participant, this was the better option and would result in a much richer and more realistic simulation training experience for participants. It was also clear that it didn't work using one ESP to play both care home manager and patient's relative; two separate ESPs would be needed in this case, to avoid disrupting the flow of the scenario.

The following additional points also emerged from the washup discussions:

<u>*Process*</u>

- Small groups work best in situ and are much better than a large group in an anonymous space. It would be worth considering a dedicated Sim suite space for training, that can be 'stage set'

Outcomes

- Actual action for change emerged at the end of the second debrief once the participants really related the scenario to their own working practices. A key prompt to help unlock that process is to ask '*what is your take home message from this*'?

4.4 Training Event 2

Date: Wednesday 24th May 2023
Location of training: Nurse Practitioner consulting rooms in a West Devon medical centre
Trainers: trainer + 3 ESPs (1 DTH staff member & 2 professional actors from local theatre group)
Attendees: 13 attendees + evaluator
Attendee job roles: Mixed – see **Table B1**
Scenarios used: Scenario 1; end of life relative completing TEP form – Clinician. Scenario 2; End of Life patient + care home manager – Paramedic (visiting team)

This second full training event was held in a medical centre in West Devon. The centre was part of a large PCN consisting of five practices, all of which were within the same urban context. The training was delivered as a dedicated event during one of the PCN's shutdown afternoons. Two scenarios were run, one after the other, with the same group of participants. A total of 18 participants had signed up for the training, with 13 attending each session on the day. The team washup discussion was held directly after the second session had been completed. The ESPs for this training session had had to step in at very short notice (the night before), due to last minute illness of the pre-booked ESPs.

Questionnaire data
Twelve completed questionnaires were returned from a total of 13 participants (representing a 92% response rate). Most participants indicated that their motivation for attending the training was either a requirement or encouragement to attend from their employer. However, several participants also indicated that the topics on offer interested them (17%); that they chose to attend for personal progression (17%) and/or that they wanted to try simulation training (8%). Responses to questions on the organisation, content and delivery of the sessions were entirely positive, with one participant adding a comment that they were attending on a day off but were happy to do so.

In terms of the perceived impacts of the training, again, these were entirely positive, with 75% of respondents strongly agreeing that they felt attending the training was worthwhile. All respondents also agreed that their willingness to engage with the topics, and their levels of knowledge and confidence had improved as a result of attending the training (**Figure 4.2**).
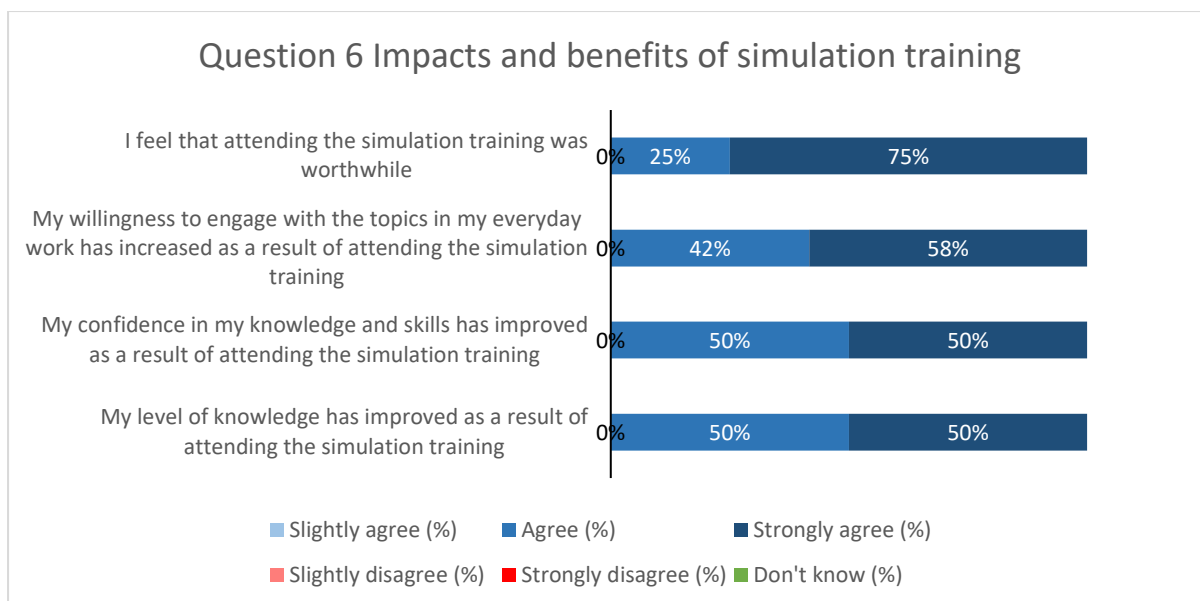
Figure 4.2 Training Event 2 – Impacts and benefits of simulation training

In terms of improvements to the programme, several participants felt that shorter scenarios with more concise debrief discussions would be an improvement, allowing additional scenarios to be run (**Table 4.4**, below).

Table 4.4 Participant comments, Training event 2, 24/05/2023

What did you particularly like about the simulation training?	What could be improved?	What impact do you think your attendance at this simulation training will have on your everyday practice?
Talking through different scenarios. Learning from others. Seeing how scenarios play out	*Multiple scenarios*	*More compassion during TEP conversations*
Very realistic. Lots of chance for discussion	*More scenarios with shorter discussion*	*More confidence to try things. Improving team relationships*
The interactive chats following SIM	*Perhaps one more scenario and slightly less discussion but this may not have worked. All good really!*	*Easier flow*
Realistic scenario makes the situation feel real	*Possibly another scenario with shorter discussion time as it was quite long*	*Re how I process TEP forms. Look in a JIC bag!!*
Interesting and relevant topic	*More scenarios*	*More aware of EOL care and how I can impact it positively*
Good to be able to share knowledge with other clinicians	*Group size*	*Will review electronic TEP forms*
Interaction between teams		*Improve practice by improving knowledge and encouraging self-reflection*
Good peer review		*To improve in our scenarios today*
Group discussions were really helpful. Helped to have MDT type approach with GP/ANP/Paramedics etc		*I am aware now of how useful what is written on the TEP form is for people attending acutes – particularly the details*
Openness to discuss		*Further discussion, decision-making*

Debrief session

The debrief sessions for this training event were markedly different from the second pilot run, in that the group size was larger. The scenarios were run in one of the Nurse Practitioner rooms, and the debrief was held in the waiting area for these rooms, which allowed the group to spread out and sit in a circle.

The first scenario (GP and relative completing a TEP form, on behalf of relative's mother) ran smoothly with the clinician reporting that he felt comfortable with the discussion, as it echoed a conversation that he had recently had with a patient. There were some good examples raised regarding the practical difficulties of having these types of delicate conversations with patients who have hearing difficulties, and the challenge of retaining patient confidentiality and privacy when needing to speak loudly. Several participants shared similar stories, and clearly felt comfortable and safe enough to do so in the debrief setting. The discussion around the use of the TEP form led into a deeper and more reflexive debate on the legal aspects of the form, and how its completion, visibility (within the system) and use impacts different MDT team members differently, leading to an exchange of perspectives and learning between MDT members. In this first discussion, the trainer had to do very little facilitation to support the flow of discussion and point up the learning points and actions.

The second scenario (Paramedic administering Just In Case (JIC) medication to care home resident, with care home manager present) ran a little less smoothly. The participant was not very familiar with JIC system of meds so didn't immediately find the JIC bag and TEP form, leading to the need for some gentle prompting by the trainer. This led to others also admitting that they too were not confident with JIC and resulted in a good open discussion of the need for further/refresher training within the PCN on several topics, including how to complete a TEP form with relatives.

During this scenario, there was again some awkwardness around whether the learning participant needed to complete a full set of observations, as some of that information had been provided by the trainer. This led to some sharing of past near misses that others had experienced, again with participants clearly feeling comfortable in sharing similar issues with each other. Individual learning emerged in that one GP was unaware of where to find additional TEP notes information, leading to more discussion of potential best practices in using the JIC bag and informing patients' relatives (sharing information about what is in the bag and when it would be used). This also led to new shared learning outcomes for the group. Action for change also emerged around putting more information in the notes section of the TEP form to support paramedics needing to make quick treatment judgements during EOL situations.

Several participants highlighted the challenges for different MDT roles of seeing patients in care homes, with emergent learning about individual team roles leading to further potential action points being discussed. This included ideas around 'soft influencing'; showing care

homes what they could be doing and supporting them to build confidence. The depth and range of the debrief discussions highlight the clear opportunities for system change identified both within this PCN and at higher organisational levels across the region.

Despite the challenges in the second scenario, several participants stated that doing the Sim training in real time, with a real patient, helped to deepen their understanding and was a better experience than the OSCE situations that they had experienced in the past.

Washup discussion
The washup discussion was held directly after the completion of the final training session. All members of the delivery team and ESPs were present.

It was felt that scenario 2 (End of Life JIC medication) in this training event ran differently to the same scenario delivered at the last event (pilot run 2) in that this time, the trainer responded to the participant's struggle with whether to collect observations or not, by providing more reassurance and guidance. There was further discussion around how the scenarios seem to run differently, depending on the level of experience of the learning participants. There was felt to be some benefit to having a less experienced participant as the learner in that it opens space for sharing concerns and lack of confidence amongst team members, although this also depends on how comfortable the group is with sharing fears in front of others. It was also noted that differences emerged between *system* or *operational learning* (what can the practice do to make information and systems flow better) that came out of the debrief discussion in scenario 1, and *individual learning* (gaining experience and confidence with JIC bag, for example) that emerged from the debrief from scenario 2. Ideally, both types of learning would be achieved during each Sim training event, so in that respect, the selection and matching of scenarios to group types and sizes could be crucial. Achieving that depth of learning outcomes may also be significantly influenced by how well the participants know and trust each other – and whether those relationships of trust create a 'safe' space where it's seen as ok to fail. In this PCN, the affirmation and reinforcement of good individual and organisational practice was a good learning outcome from the combination of scenarios.

There was a general discussion around the best way to structure the 'script' and background information given to the ESPs to help them deliver the scenarios. Having completed four simulation training events, it has become clear that it is difficult to control every aspect of the delivery because each time the scenario plays out differently due to the differing levels of experience and knowledge of the individuals participating on the day. The ESPs supporting this event offered to share a script, to show how they manage similar situations with their murder mystery events. These events are similar in that the actors are interacting with the public, so cannot control exactly how the scene will play out. They, therefore, rely on a synopsis provided beforehand, to give them a solid background to work with, and react from. That approach could be a useful tool for producing the Sim scenario notes for ESPs.

The following additional points also emerged from the washup discussions:

<u>Process</u>

- Smaller groups are easier to observe – this was a group of 12 so it would have been more difficult in a smaller room. On this occasion, the room was big enough to enable all to see/hear without crowding
- The TEP from format (which goes from hospital admission to resuscitation) causes a moment of clunkiness when filling it in with a relative – that sudden jump from whether to go into hospital to whether to be resuscitated felt quite shocking to the ESP (acting as the patient's relative, filling in the form on their behalf). This is a key consideration if external ESPs are brought in from outside the clinical context, in that they may be exposed to some emotionally difficult discussions that could be uncomfortable for them.
- Good to have ESPs perspectives during the debrief with participants, so that participants can hear how the scenarios feel from a patient's/relative's perspective
- There were still challenges with scenario 2 in terms of whether to give the obs information to the participant at the start of the scenario or not. It has now been tried both ways (giving and not giving) and although it was less 'clunky' on this occasion, neither way has worked perfectly
- There was considerable agreement that the scenarios work much better with a real person, than with a mannikin and each scenario in this project has been supported by at least one human ESP
- Additional props would be useful to include in the Sim training kit, to help with scenario fidelity in PCN practice settings (private home; care home etc). Key items include a blanket, cushion and a few personal things to make the scene feel more realistic as a care home/private home, for example

4.5 Training Event 3

Date: Wednesday 13th September 2023
Location of training: South Devon simulation suite
Trainers: 2 Trainers + 2 ESPs (2 professional actors from local theatre group)
Attendees: 19 attendees (12 in morning session; 7 in afternoon session + evaluator
Attendee job roles: Mixed – see **Table B1**
Scenarios used: Scenario 1; end of life highly distressed female patient – Care worker.
Scenario 2; End of Life male patient in pain – Care worker

This simulation training event differed from the previous training in that it was targeted at those working in social care settings, rather than a specific PCN or PCN network. The training opportunity was open to any social care organisation in Devon and Cornwall to send staff, so groups were mixed, with two main care agencies sending staff. The location of the training was a simulation suite run by the Peninsula Medical School Simulation Team, Plymouth Science Park. All participants had been given an opportunity beforehand to identify which aspects of end of life care they would like the scenarios to focus on. Emotionally difficult discussions were the topic requested, so the scenarios were developed

and tailored accordingly. Two scenarios were, therefore, run, based on challenging end of life contexts (patient/client in emotional distress; and patient/client in pain). The day was split into a morning session and an afternoon session. The morning group of 12 was divided into two smaller groups of six; two sessions were run, with each group doing each scenario. The afternoon group of seven was run as one cohort; the two scenarios were run sequentially, with the full group at each session. The team washup discussion was held after the afternoon session had been completed.

Questionnaire data

All 19 participants completed and returned their questionnaires (100% response rate). None had tried simulation training before, so this was a completely new experience for all of them. Most indicated that they had chosen to attend for personal progression (63%), as well as being encouraged to do so by their employer (53%). Both groups (morning and afternoon sessions) appeared to be keen and active learners, including comments such as: '*I am overseeing an end-of-life team & want to expand my knowledge*' and '*I love to learn new things so I just wanted to add up new topics to my knowledge*'.

The feedback on the content and organisation of the training was overwhelmingly positive, with just a small number of negative scores around the speed of knowledge transfer and the use of examples (**Figure 4.3**). The comments associated with the negative responses highlight participants' desire for an opportunity for more than one participant to be the active learning participant, and for more 'teaching' on how to identify end of life and how to manage it in a social care setting: '*More hands-on experience to each individual would have been beneficial*'; '*I'm happy to be part of sharing our experience but I want to know more. What is end of life?*' and '*Please teach us what we need to do who lives in end of life. What need to do. You guys just listen what we shared you but I felt I wanna learn more about end of life*'.

In terms of the training impacts and benefits, again, the results were all positive with 95% of respondents agreeing that their knowledge had increased as a result of attending, and all (100%) agreeing that their confidence and willingness to engage with the topic of end-of-life care had increased as a result of attending the training. All also agreed that attending the training was worthwhile.
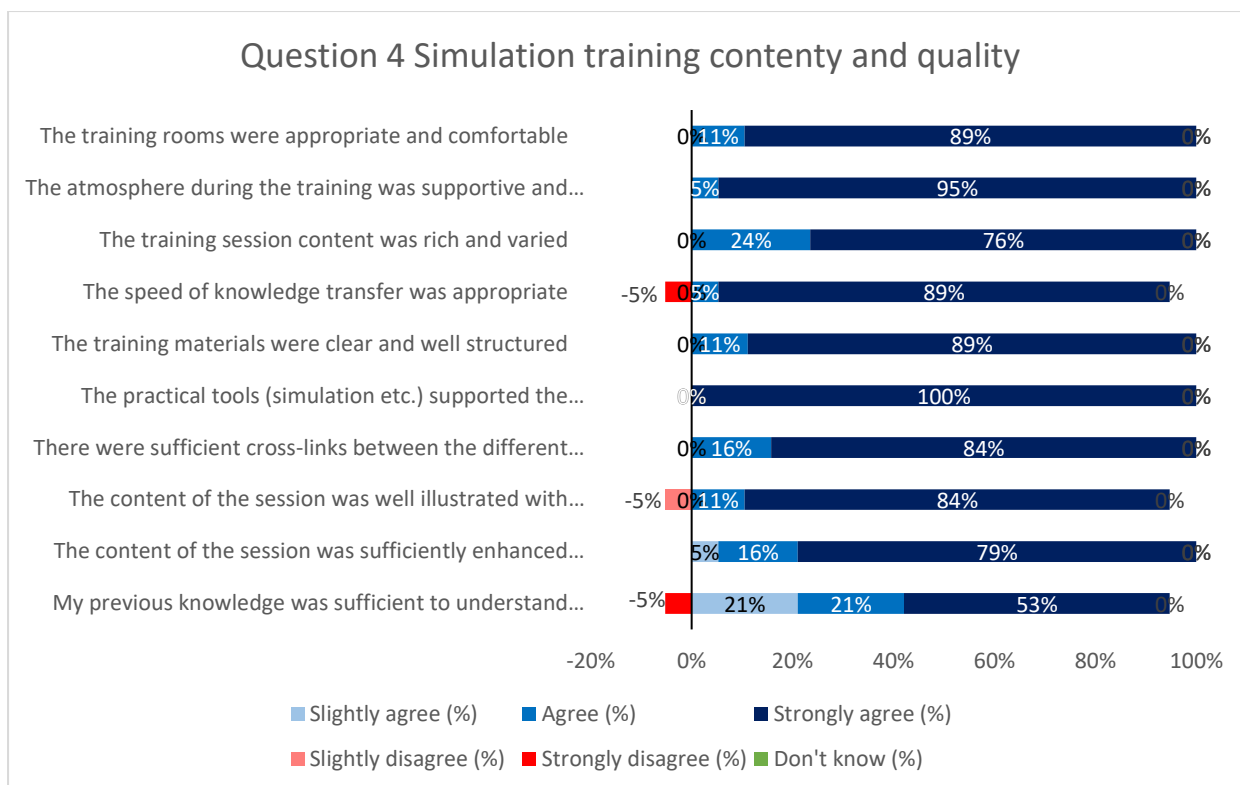
Figure 4.3 Training Event 3 – Simulation training content and quality

In terms of improving the programme, comments centred on giving more of the cohort an opportunity to 'sit in the hot seat'; increasing the length of the training sessions and offering a follow-up training session to enable them to put new skills into practice, and then return for some follow-up guidance (**Table 4.5** below).

Table 4.5 Participant comments, Training event 3, 13/09/2023

What did you particularly like about the simulation training?	What could be improved?	What impact do you think your attendance at this simulation training will have on your everyday practice?
Actual(ly) having actors taking the role of the EOL patient felt so real life	*I think the trainer should choose who is the active member, to encourage less confident people the chance/support*	*Try (and) put myself in their position and be sensitive*
Hands on practical elements brought out real reactions. Even watching you could get involved	*Getting each and every one to demonstrate*	*It has made me more confident in my abilities*
It was scenario-based discussion I am attending first time to this kind of training. That was very good experience for me	*I wanted to learn more. So the time of the training should be increased*	*Confidence in knowing the right steps to be taken in end of life situations*
On this training we can see a real story and discuss about that, which was very helpful	*This should have a follow-up and more time and situation*	*I learned about SBAR today. I will apply this technique to my day to day practice*
I got loads of information to take with me, such as end of life plan, Just In Case meds, TEP and so on.	*Everything was quite good but for the same scenario can be other examples. More situation related to the same*	*More confidence. Learnt how to use the things present in a place to gather information about the person. More*

Many new information, very helpful	topic, as not all the people are the same	appropriate way of passing the knowledge to other organisations

Debrief sessions

The debrief sessions provided some insight into how participants had felt during the scenarios, the key aspects that they had struggled with, and the various external sources of information and support that they could potentially draw on, also providing some organisational learning points as well. Scenario 1 (bed-bound client with terminal cancer, very distressed) presented a highly emotional scene, and participants appeared a little shocked by the intensity of the immersive experience. In the first group, the active learner was a very experienced care worker, who remained very calm and reassuring. and worked hard to steer the client away from a negative discussion. This individual used good distraction techniques to help the client to focus on positives, without making unsubstantiated promises, and managed to get the client laughing by the end of the scenario. This prompted a discussion around how long care workers have for each visit in reality, to be able to deal with the regular tasks as well as managing these difficult situations.

Other groups raised questions around what else could have been done, including the role of Just in Case (JIC) medication, and the need to assess pain levels. There were also good discussions around how carers manage the emotional impacts on themselves, of these types of visits. The second and third run of this scenario played out very differently in that the learning participants struggled to know how best to manage the distress shown by the client. There was some good empathy, but the learning participants were unable to deflect the client's distress, which felt uncomfortable. Again, there was some good discussion around what else the learning participant could have done. Both groups identified a strong need for more formalised training on how to respond to difficult situations, and information on when and how to escalate the call to seek clinical support, providing clear potential for further organisational learning.

After the individual group debriefs, the afternoon session concluded with an opportunity for collective feedback and reflection on the scenarios and the experiences of participants. There was a general feeling that in many situations, like those in the scenarios, participants felt 'stuck' and unable to resolve the problems presented, which was emotionally difficult for them. Key training needs were identified, as the general level of awareness of specific tools for responding to these situations, and potential external support organisations was low and somewhat simplistic. More experienced participants were open, however, and felt comfortable enough to freely share their experiences and offer potential guidance to those who had less experience. Many in the group had been working for the organisation for less than a year. There was discussion and some signposting from the trainer on when and how to escalate issues to the GP, and reiteration of the SBAR system when communicating with clinicians. There was also a discussion that this particular scenario needs to be led by a

clinician to help participants to understand the key indicators of approaching end of life. The trainer addressed the participants' difficulties during the scenarios with gentle humour and empathy, which enabled them to talk openly about the more uncomfortable experiences and eventually, the discussion reached a deeper level, touching on cultural perceptions and perspectives around death. Reaching these deeper discussions took time and skill in creating a safe-feeling environment to enable participants to share openly. This deeper discussion led to realisations within the group that much more training is needed to equip them to do their everyday work and feel confident around difficult conversations. This was a key learning breakthrough with this group.

Washup discussion
The washup discussion was held directly after the completion of the final training session (pm). All of the delivery team and ESPs were present.

Following on from participants' request for more formal training in recognising and managing the end-of-life pathway for clients cared for at home, the team felt that it would be useful to have a 'what does good practice look like' handout to give participants at the end of each training session, with key learnings reiterated and signposting to further training and support information. There was discussion around the digital systems that carers currently use to access, update and share information about clients, with a suggestion that DTH could create a mobile phone app that could simulate the same systems and type of notes, to support the fidelity of the simulation with these carer job roles, and also the messaging app 'Slack' a messaging app that carers can share information informally on anything that the following carer needs to know. This would be a significant benefit in supporting the delivery of the scenarios for this specific adult social care sector, as the digital client information is the key touchstone and first action for any care visit. Not having access to that information was one of the reasons why some of the learning participants struggled so much with the scenarios; they didn't have the usual information to hand and struggled to adapt their approach as a result.

In terms of the pre-training skills levels of these participants, during the debriefs it emerged that they currently receive some training on end-of-life topics via Bluestream Academy e-training but most felt that they learned more by experience and from shadowing colleagues, hence there was seen to be a clear need and opportunity to provide further simulation-based training for this sector, across a range of topics, not just end of life. There was also discussion about how to increase the fidelity of the scenarios for social care job roles. One idea suggested is to pair learning participants to more closely mirror their actual experience when working with clients considered to be close to end of life.

There was a discussion around the role of the facilitator for these scenarios and debriefs in drawing out the deeper learning objectives and it was felt better to use the same person for both roles. Using the same facilitator for both scenario and debrief supported the development of trust and created the sense of a safe environment to enable deeper

discussions to emerge. The facilitator also has more to draw on from earlier or previous simulation sessions.

In terms of future training needs, a suggestion was made for DTH to reach out to the two care organisations to ask what scenarios and specific training they would like to see being offered, and to ask for any further feedback that they might have.

The following additional points also emerged from the washup discussions:

Context

- The context for this particular cohort is very different from the PCN one in that social care staff are likely to have had much less clinical or professional development training before coming into the caring role. That can have an impact in terms of how sufficient their background knowledge is for the simulation training being delivered and also in terms of the accepted norms for the client/carer relationship which affects how they have been trained to deal with situations

Process

- The cohort in the afternoon were quite young, with less experience than other groups, and for one of the scenarios, the learning participant was overwhelmed by the scenario. Suggestion for a 'time out' whereby the participant can ask to stop the scenario and get help from others or step down. There is a downside to that in that the participant doesn't then experience having to really think on their feet and think through the scenario to emerge on the other side, having worked through the difficulty. It would also break the sim fidelity. Aim is to make them feel a little uncomfortable in order to learn new skills
- However, when it is a difficult scenario and the learning participant struggles, it does offer a much richer learning experience for the group, as there is a lot more to talk about and draw out, than when the active participant produces a slick performance. The experience of watching may be more comfortable, but it doesn't necessarily achieve the same deep learning aims
- Cit can be challenging to ensure that those who have a lot of experience don't dominate the debrief conversation. Key is good facilitation
- The first scenario for the afternoon group was very challenging as the learning participant was quite shocked by the realism of the situation, and it shook him. There was a realisation amongst participants that they weren't prepared or trained to have the type of difficult conversation that the scenario simulated. There was felt to be a real need within the sector for more specific and directed training on facing and navigating these difficult conversations
- There were also felt to be some cultural challenges around having conversations about death and being honest about the process. Clearly a significant need for more training in managing difficult conversations

- How the learning outcomes are drawn out is important, in that it should not be about pointing up what was wrong, but enabling participants to move forward in their understanding and reach the right conclusions themselves through their active participation
- In the debrief, the takeaway messages need to be clear and context specific. It may be helpful to have an experienced social care worker as a co-trainer, supporting the debrief sessions to ensure that the take-home messages are orientated to the sector's norms
- Possibly produce a 'what does good end-of-life care look like' for this sector, to help meet the existing training needs
- Important for participants to experience more than one scenario as part of the training in order to reach the deeper learning stage, as the level of learning having experienced two scenarios led to much more self-reflection.
- Fundamental difference between Scenario 1 with the very distressed patient, and the other scenarios run, in that this scenario is purely emotionally driven compared to scenario 2 and the PCN-based scenarios, which are primarily clinically driven in terms of process. That made scenario 1 the hardest to facilitate and debrief, because it is about an individual personal emotional response, so drawing out the learning outcomes from that is quite hard
- The scenarios need to be carefully orientated to this particular group's job roles and ways of working, so needs information to be given up front by the cohort so that the scenarios can be shaped accordingly
- Despite the challenges, and having never experienced sim training before, the group clearly felt the experience was worthwhile, and wanted more of this type of training
- The immersion worked well in the sim room, as the learning participant had their back to the audience; the bedroom context was projected onto the walls and the room was relatively dark, all of which helped create a 'fly on the wall' experience which deepened the sense of fidelity
- The lighting in the immersive room made a big difference on the sense of immersion and fidelity. Lighting can be key to the creation of a sense of reality. There may be specific simulations that are best set and delivered in a sim suite, and others where that immersion is less important. Specifically for scenarios set in a patient/client's home, the sim suite made a difference in fidelity.
- Timing worked well in terms of length of time for the scenario and the debrief, so three hours worked well

Outcomes

- Not clear that every individual went away with the understanding of how to have those difficult conversations in the right way – the penny didn't necessarily drop with everyone even during the debrief – so a handout of 'what good care looks like' would be very useful as a take-away for these groups

5. **Discussion**

The aim of this Simulation Training project was to test and gather feedback on what can be delivered for early cancer detection and end of life care for multi-professional clinical and care teams in Primary Care Network (PCN) and social care settings. To achieve this aim, the project defined a set of key objectives:

- Establishment of the Sim Fellow
- Creation of a number of joint health and social care scenarios for CLiP learning
- Testing new approaches and utilising infrastructure from existing projects
- Delivering a set of simulation-based training sessions
- Evaluation of multiple elements of the simulation-based training design and delivery process, outputs and potential outcomes

Each of the objectives noted above has been achieved by the project. This evaluation has focused on the effectiveness of the simulation training offered to PCNs and care staff in the south-west, from the perspectives of participants and the delivery team. The evaluation data was categorised into three components: (i) the **context** of the training, (ii) the training **process**, and (iii) the **outputs**, and potential longer-term **outcomes** (impacts). The key learnings for each of these components are summarised below.

Context

The sim training delivered by this project has provided a new and important opportunity for MDT and care staff to think differently about how to engage with patients about early cancer diagnosis and end of life care. Currently, there are challenges in finding suitable simulation training for MDT and social care teams, so this model of adaptable sim training that can be delivered in PCN and other settings could be an important way to address that need in a cost-effective way. Feedback from PCN practice managers suggests that they want Sim training to be relevant to, and located within, their specific Practice context – hence the shutdown days are a good opportunity to use for the training, whether delivered on or off site. The newly published report by HEE (now NHS England) highlights the need to develop sustainable simulation training models and this project can, therefore, potentially support that ambition.

There are some challenges, however, in that it can be difficult to make each training scenario 'real' enough for every context, given the complexity of current PCN and social care systems and modes of working. In addition, although MDT participants said that they valued working with colleagues from other practices, there can be existing politics or tensions between practices within a PCN that may make that difficult in some places. Care is needed in the organisation of the training sessions, to ensure that as many staff as possible can attend but with minimal impact on day-to-day working, and in the design of the scenarios to reflect different ways of working. This aspect appeared less of a barrier for the social care organisations, who encouraged and supported their staff to attend the training.

5.2 Process

The questionnaire data provided a clear understanding of how participants felt about the sim training. The majority of participants across all training and pilot sessions reported a positive experience in attending, felt safe and supported in the environment, and felt that the training would have a positive impact on their day-to-day work. The only negative feedback regarding the organisation of the training was around the dates offered, in that for some PCN-based participants in one training session, these coincided with days off.

Some negative feedback was also received, centred on participants previous knowledge and experience being insufficient to enable them to fully understand the training (no more than 8% across all pilot and training events). Open-question feedback suggests that this may have been allied to the specific scenarios used on the day, and the participants' own job roles, and lack of experience. This aspect was more marked for the social care staff in training run three, in that many of them had been in post for less than 12 months and struggled at times to know how to respond to the scenario that they were presented with. These difficulties did, however, provide an opportunity to identify further sim training needs across the sector. Recommendations included providing a handout sheet highlighting good practice, for participants to take away at the end of the session.

Key feedback was also raised regarding the level of information and training aims provided before the event, which would have given participants a little more information on what to expect from the training. Several washup session discussions also picked up on the need to develop the invitation materials a little further, to reduce participants fears about being asked to be 'in the hot seat', and to start the process of building trust in the process, to enable deeper and more reflexive insights to emerge early in the debrief discussions. It was also clear that the majority of participants felt that the balance of session elements (scenario and debrief) was good and worked well.

The overwhelming majority of participants agreed that attending the training was worthwhile, that their willingness to engage with the topics had increased because of their attendance, and that their levels of confidence had also improved as a result. A small number of participants, however, either slightly disagreed, or disagreed, that their level of willingness to engage with the topics had increased as a result of the training. From the open question responses, it may have been that these individuals were already highly experienced and comfortable with engaging with the topics, and this training had, therefore, not had a significant impact on their willingness to engage.

One of the key delivery challenges that emerged early on and was extensively debated in several washup discussions centred on how best to create the sense of fidelity needed to enable participants to become immersed in the scenarios. Creating a sense of realism through room settings and use of equipment is relatively easily achieved in a simulation suite. Achieving the same level of fidelity in a PCN practice was found to be much more challenging, particularly when the rooms available for training were clinician consulting rooms, or treatment areas, or in off-site settings or meeting rooms, or multi-use event

spaces. This was mitigated to some extent with the use of cushions, blankets, and other personal items, but these could only go so far in recreating a private home or care home feeling. In all of the scenarios run in this project, clinically relevant props were used wherever possible, including hypodermic needles used with injection pads and 'Just In Case (JIC)' bags with props to replicate medications expected to be found in a JIC bag. These were not real medications but were designed to be drawn up/diluted and then administered to the sub-cutaneous pad in order to support the fidelity of the challenges in terms of the location of medication and time taken to administer. Anonymous system screenshots and anonymised TEP forms were also used, to enable as much fidelity as possible for different members of the MDT and care teams. Again, washup discussions also explored whether medical simulation technologies would be a useful enhancement to the scenarios. The cost of various devices was found to be very expensive, and unlikely to be within reach of this, or future projects.

What was felt by the delivery team to be more important, and echoed through participant feedback, was the use of 'live' patients and education simulation personnel (ESPs) for the scenario delivery, rather than using a mannequin. As Boyer and Mitchell (2022, p.2) note: '*This is because a confederate/ESP plays a substantial role in the determination of the psychological or emotional fidelity of a simulation scenario. Therefore, simulation instructors achieve the highest level of realism/fidelity by using properly trained ESPs, which one could argue is equivalent to a paid SP in the ESP role*.' In this project, the patient and/or ESP role was filled by either project team staff, simulation suite staff, or professional actors. It was decided during the first washup discussion, that using participants (PCN practice staff) to fulfil the ESP role would put too much pressure and/or cause awkwardness for participants and would result in the need for participant ESPs to need enough time prior to the start of the training session, to 'learn' their role and absorb the nuances needed to ensure the scenario ran smoothly. It also became clear after the first pilot run that, as Boyer and Mitchell note, this individual can significantly shape the direction and level of the scenario as it is unfolding. For that reason, ESPs need to be trained and have good basic medical knowledge to support the fidelity of the scenario and support the debrief discussions to enable key learning outcomes to be achieved.

Another element that clearly impacted on how the scenario and debrief sessions ran at each event is the specific mix of individuals and job roles within the cohort of participants. For example: whether the participants know each other before the training; whether they are from the same Practice; whether their job role has a clear link or connection to the scenario being run; and the mix of personality types in the room. These differences meant that each simulation training session was unique. Some sessions flowed easily and worked well with individual and operational learning outcomes emerging with little input from the trainer. Other events needed more facilitation or reached less depth in terms of individual insight and collective learning. One important aspect found to support the development of deeper discussions and insight, was the need to run at least two scenarios per training event. It was clear that trust had developed, and deeper discussions emerged during the second scenario debrief, suggesting that participants need time to process the immersive experience and by

the second debrief, they understood the process and were more comfortable to share their learning insights.

5.3 Outputs and longer-term outcomes

Each training session had a set of learning outcomes associated with it, aligned to the specific scenario used. For example, the scenario focusing on end of life, where a clinician (learning participant) supported a relative (ESP) to complete a TEP form, included the following targets:

Learning Objectives:
- Effective communication with a patient's relative
- Discuss the need for completing Treatment Escalation Plan
- Discuss the need for Just in Case Medication

Desired actions/outcomes
- Clinician elicits the relative's ideas, concerns, and expectations
- Empathetic and clear communication of the situation
- Effective explanation of the need to complete a TEP form and arrange for JIC medications to be on site.

Debrief points
- Effective communication of necessities in End-of-Life care planning
- Communications skills such as ICE that can lead to better consultations.
- Discussion around barriers to caring and effective End of Life Care.

These learning targets are primarily centred on individual learning by the learner participant, but with opportunities during the debrief for the wider group to increase their skills and knowledge. What also emerged during several of the debrief discussions, was an opportunity for organisational or system learning as a result of participants being able to 'step into their colleagues' shoes', and understand where system blocks and barriers were, as well as identifying where new opportunities for synergies also existed. These debrief discussion therefore resulted in new organisational action points and stimulated better understanding of job roles and challenges across the practice and PCN landscape.

The final set of questions in the questionnaire asked participants to reflect on the impact(s) that they felt the sim training would have on their everyday practice. Feedback included: '*More confidence to try things*'; '*Opening my mind to new things. Allowed me to recognise other roles' input*' and '*More aware of EOL care and how I can impact it positively*'. These comments clearly show the potential benefits that this type of sim training can offer to participants, through better understanding of the relationships between their own roles and others within the MDT or care landscape, and increased confidence in engaging with the topics. In order to assess whether this potential impact is actually achieved in the longer term, more follow-up evaluation would be needed, which was beyond the scope of this project.

5.4 Future opportunities and suggestions for training topics

Participants very clearly felt that there was value in the sim-based learning approach, compared to other more traditional classroom-based learning, and an appetite for further training on a different set of topics emerged from the open questions in the questionnaire. **Table 5.1** summarises the future training topics suggested by participants.

Table 5.1 Participant suggestions for future sim-based training topics

Are there any other interactions with patients that you find challenging in your everyday work, that you would like to see delivered using simulation-based training?	
Giving poor prognosis or news	Chronic pain/multiple problems
Medication-seeking behaviour.	People not wanting to engage – e.g. hoarding
Patients requesting benzos/opiates	More clinical scenarios
With learning disabilities patients	Complaining/aggressive patients
Deaf, dumb and can't read patients	How to deal with difficult patients – especially mental health/drinking issues etc.
Patient requesting medication that is addictive/related to dependency	Maybe use of a younger age patient, but only when relevant to attendees
Angry relatives! How to manage TEP forms	Urgent/emergency scenarios
How to talk about TEP forms with patients and relatives. How to provide information about DNAR compassionately and with empathy	Happy to try a variety of simulated based trainings
Aggression; Refusing care due to fear	Dementia, challenging behaviour
Dementia care with end of life	Dementia patient, anxiety and stroke

The challenges, as noted in the debrief and washup discussion data, are around finding suitable dates and times where large enough mixed MDT and social care groups can be brought together in one place. The current PCN 'shutdown afternoons' do provide a potential opportunity, however, if the dates of these afternoons can be aligned with sim training team availability. In terms of other healthcare contexts and settings that could benefit from this type of training, several debrief discussions raised the potential for other social care teams and care home staff to be included in future training. This idea would offer a good opportunity for cross-context learning, given the value attached to stepping into each other's' shoes and the organisation-level learning that resulted.

5.5. Conclusions

This evaluation has used a formative and summative approach to collect participant reflections on the value, utility and applicability of the training offered, and its potential to be rolled out across the wider southwest area. The results from the questionnaire show that participants found the scenarios useful and relevant to their work; felt they had gained confidence and were more willing to engage with challenging discussions around end-of-life care, and early cancer diagnosis; and were happy with the organisation and delivery of the training. Evidence from the participant debrief discussions and team washup meetings raised important points regarding best practice in delivering the simulation training sessions and offered useful suggestions for how to develop the programme in future.

Given the high levels of agreement expressed across the board in the questionnaire data, and the openness and depth of the debrief discussions across all pilot and training events, it

would be reasonable to suggest that the simulation training project has successfully delivered effective and valued sim training, and that it would be of significant value to many others both regionally and nationally. Key will be identifying a sustainable funding model to enable this effective training method to be rolled out to PCNs, adult social care and care home staff.

6. Recommendations

- Broaden the topic offer to include other system-level priorities, as well as training and knowledge gaps identified through further market research within the sector

- Offer a simulation-based training programme to all PCN and adult social care organisations across the wider southwest of England

- Invitation materials need to provide sufficient information to reassure potential participants that being the active learner is voluntary and not mandatory

- Group size should be no more than 10 participants per scenario, so larger cohorts need to be split into smaller groups, with associated additional training and debrief facilitators and ESPs (the sim training 'faculty') to ensure the most effective experience for all learners

- Use trained actors as ESPs, as this delivers a rapidly immersive experience and enables the scenario to be adjusted according to the specific cohort of participants on the day

- It is important for participants to experience two scenarios during a training session, to help embed the learning and enable time for trust to develop to support deeper discussions and the creation of a safe and comfortable debrief space

- Debrief sessions need at least two facilitators to support the in-depth discussions; these facilitators should include the trainer and, if possible, the ESP(s)

- Provide handout sheet to take away with good practice guidelines and signposting info

- Consider the training location carefully to achieve a balance between fidelity to context and convenience for participants. The immersive experience can be enhanced by delivering training in a dedicated simulation suite, but it is not essential. Different scenarios have different levels of tolerance in terms of context fidelity, so some training may be offered on site; other training offered in a dedicated simulation suite

Acknowledgements

References

[1] McKenney J. L., Dill W. R. (1966). Influences on learning in simulation games. American Behavioral Scientist, 10(2), 28–32. Available from: https://doi.org/10.1177/000276426601000205

[2] Philippatos G. C., Moscato D. R. (1969). An empirical study of the learning aspects of experimental business game playing. AIIE Transactions, 1(4), 343–348. Available from: https://doi.org/10.1080/05695556908974718

[3] Raia A. P. (1966). A study of the educational value of management games. The Journal of Business, 39(3), 339–352. Available from: https://doi.org/10.1086/294863

[4] Schild E. O. (1966). The shaping of strategies. American Behavioral Scientist, 10(3), 1–4. https://doi.org/10.1177/000276426601000301

[5] Hallinger, P., Wang, R. (2020). The Evolution of Simulation-Based Learning Across the Disciplines, 1965–2018: A Science Map of the Literature. Simulation & Gaming, 51(1), 9–32. Available from: https://doi.org/10.1177/1046878119888246

[6] Wolfe J. (1994). Recollections on 25 years of simulation/gaming. Simulation & Gaming, 25(2), 274–278. Available from https://doi.org/10.1177/1046878194252020

[7] Garris R., Ahlers R., Driskell J. E. (2002). Games, motivation, and learning: A research and practice model. Simulation & Gaming, 33(4), 441–467. Available from: https://doi.org/10.1177/1046878102238607

[8] Salas E., Burke C. S. (2002). Simulation for training is effective when. . .. BMJ Quality & Safety, 11(2), 119–120. Available from: https://doi.org/10.1136/qhc.11.2.119

[9] Chapman, G., Martin, J. (1995). Computerized business games in engineering education. Comput. Educat., 25, 67–73. Available from: https://doi.org/10.1016/0360-1315(95)00028-3

[10] Lu J., Hallinger P., Showanasai P. (2014). Simulation-based learning in management education: A longitudinal quasi-experimental evaluation of instructional effectiveness. Journal of Management Development, 33(3), 218–244.

[11] Kolb D. A. (1984). Experiential learning: Experience as the source of learning and development. Prentice Hall.

[12] Lovelace K. J., Eggers F., Dyck L. R. (2016). I do and I understand: Assessing the utility of web-based management simulations to develop critical thinking skills. Academy of

Management Learning & Education, 15(1), 100–121. Available
from: https://doi.org/10.5465/amle.2013.0203

[13] Kiili K. (2007). Foundation for problem-based gaming. British Journal of Educational
Technology, 38(3), 394–404. Available from: https://doi.org/10.1111/j.1467-
8535.2007.00704

[14] Rudolph J. W., Simon R., Dufresne R. L., Raemer D. B. (2006). There's no such thing as
"nonjudgmental" debriefing: a theory and method for debriefing with good judgment.
Simulation in healthcare. Apr 1(1), 49-55.

Appendices

Appendix A1 & A2 – Simulation Project Evaluation Questionnaire and Washup Discussion
Schedule

Appendix B – Simulation Training Event Metadata

Appendix C – Simulation Training Event Scenarios