

A Qualitative Evaluation of a Simulation Training Initiative for Registrars Working in Acute Medicine

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Abstract

Introduction: We evaluated a simulation-based training day for medical registrars to define the hidden curriculum of the training.

Methods: We interviewed participants to explore their reflections about the day, what they had learned and how it had influenced their practice. Interviews were conducted iteratively and analysed in accordance with content thematic analysis.

Results: We established four themes: sharing (collaborative learning), sensing (comparing one's practice against peers'), transforming (development or change in practice based on learning from the day), and endorsing (appreciating authenticity in the simulation and psychological safety in debriefing).

Conclusion: This evaluation furthered our understanding of the self-reported learning outcomes of our participants. We encourage other institutions to perform similar evaluations to build a collaborative understanding of simulation-based education for medical registrars.

Keywords

Simulation, medical registrar, hidden curriculum

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Introduction

Simulation-based medical education is defined as any educational activity that utilises simulation aides to replicate clinical scenarios and “is a technique to replace or amplify real-patient experiences with guided experiences, artificially contrived, that [evoke] or [replicate] substantial aspects of the real world in a fully interactive manner”¹. While high fidelity simulation training is not new in areas of acute medicine, the training process is constantly evolving and simulation is now recognised as an innovative method of interactive clinical teaching and training for healthcare professionals². Simulation is now mandated in the Internal Medicine Training (IMT) curriculum to enhance training and better prepare trainees for their subsequent medical registrar years³. As such, they can make mistakes in a safe environment, learn from those mistakes and achieve proficiency by attaining predefined benchmarks. Bringing members of the healthcare team together in a simulated environment promotes ‘team training’ to explore communication, decision-making, judgement and leadership skills^{4,5}. Medical simulation has been found to enhance ‘non-technical’ aspects of training for both undergraduate and postgraduate clinical competence, and improves patient safety⁶.

At University College Hospital, we deliver a one-day simulation-based training course entitled “Being the Med Reg” for medical registrars who spend time working in acute medicine on the acute medical take

and providing out-of-hours cover. Rather than focus on procedural or technical skills, the course was designed to facilitate non-technical skill acquisition and development. The training day is specifically mapped and aligned to the acute internal medicine (AIM) and general internal medicine (GIM) curricula thus affording the learners a training opportunity for gaining experience and a substrate for reflective practice in areas of complexity that hold relevance to their usual job experience, such as prioritisation, communication, breaking bad news, multi-tasking and working within a medicolegal framework.

The hidden curriculum refers to a concept that has evolved with educators understanding and recognising that often there is a difference between what is being taught and what is being learned⁷. It involves the implicit (unwritten, unofficial and often unintended) learning outcomes of the training course, that are not pre-defined but are discovered retrospectively⁸. In contrast to a formal curriculum, the hidden curriculum is not necessarily documented and rather is inferred by learners rather than delivered intentionally by faculty⁹.

In this paper, we qualitatively evaluate the learners’ responses to the question: “*What did you learn on the “Being the Med Reg” course?*”. In this evaluation, we aim to compare and inter-relate the learners’ feedback to identify common and recurring themes, and thereby establish the learners’ perceived learning outcomes of this educational intervention, revealing the hidden curriculum of this course.

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The training day

The purpose of this paper is not to describe the details of the simulation course, but to present our evaluation of the feedback. However, in order to contextualise our evaluation, an overview of the training day is presented below.

At the time of writing, the training day has been delivered four times. On the day, four full-immersion simulation scenarios are delivered. These scenarios were carefully mapped to the generic “capabilities in practice” detailed in the AIM and GIM curricula. Some details from real-life encounters were used as a basis for the scenarios; however these were carefully altered and anonymised to prevent any potential recognition of patients. The four scenarios are detailed in Table 1.

The training day is led by an acute medicine consultant with a background in simulation-based education (also the author of the scenarios). Additional faculty include a trained simulation facilitator with a medical background and a foundation year 1 doctor, acting as an embedded person (the junior doctor on take) within the simulation scenarios. During each scenario, the candidates receive frequent bleeps from faculty members with queries, referrals, and other communications.

Candidates were registrars in training programmes, ranging from ST3 to ST7. All registrars were dual-accrediting in GIM alongside other

specialties, as detailed in Table 2. All candidates participated regularly in the acute unselected medical take at our institution.

The training day is a simulated night-shift on take, with the registrars taking turns to see a different “patient”. The day consists of an introduction and ice-breaker session, followed by the four simulation scenarios and debriefs. The simulation scenarios typically last twenty minutes, and the debrief conversations last for forty-five minutes to an hour.

Methods

Candidates who participated in the training day were contacted by email to ask if they would attend one-to-one interviews in order to explore their recollections and reflections on the course and their perceived learning outcomes. Candidates were approached on convenience sampling principles (those still working at the same trust or in nearby institutions). The interviewed candidates (12 in total) were interviewed between 4-12 months after their training day.

Respondents were interviewed by the lead author: an education fellow working within the acute medicine department (LH). The interviews were not carried out by the consultant lead for the training days, in order to minimise any perceived sense of hierarchy which might inhibit or otherwise influence candidate responses. The interviews were

Table 1. Summary of scenarios and non-technical skills explored

Scenario	Non-technical skills explored
An older adult with many comorbidities has a CT-confirmed diagnosis of a perforated bowel. Surgical assessment outcome is for conservative management under the medics. He is peri-arrest and requires a treatment escalation plan. He has no next of kin. The candidate receives multiple bleeps during the scenario.	Escalation and resuscitation including advanced care planning Communication between healthcare professionals, the patient and their next of kin Capacity assessment for patient with a poor prognosis Responsibility – “Who should look after this patient?”
A 60-year-old patient is admitted with chest pain and bradycardia. The junior doctor assessing the patient has not treated the bradycardia appropriately. There is disagreement between cardiology and critical care colleagues about the appropriate place for managing the patient. The candidate receives multiple bleeps during the scenario.	Dealing with multiple opinions – transfer to ITU, transfer to local cardiac centre Managing junior members of the team who have not escalated appropriately or acknowledged significance of clinical findings Dealing with work-related interruptions, multi-tasking and prioritisation
An 18-year-old patient with type 1 diabetes is in DKA. She is well known to the medical team with poor control and recurrent presentation, she has a background of emotionally unstable personality disorder which makes treatment difficult. She often pulls cannulas out, absconds and generally displays challenging behaviour. You are called to see her as she is refusing treatment. Her pH is 7.1. The candidate receives multiple bleeps during the scenario.	How to approach a patient refusing treatment When are the Mental Capacity Act and Mental Health Act appropriate? What options are there in the Emergency Department?
A 19-year-old patient with Crohn's Disease had a nasogastric (NG) tube sited earlier that day and subsequently develops respiratory distress. The candidate discovers the NG tube is malpositioned in the lung. The patient's mother is present and insists on filming the conversation with her phone. The candidate receives multiple bleeps during the scenario.	Are patients allowed to film conversations? Exploring duty of candour Managing other people's mistakes

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Table 2. Summary of interviewed candidates, level of training and specialty

Doctor	Level of training	Specialty
Dr L	ST3	Acute internal medicine and general internal medicine
Dr H	ST3	Clinical pharmacology and general internal medicine
Dr A	ST5	Infectious diseases and general internal medicine
Dr G	ST6	Respiratory medicine and general internal medicine
Dr F	ST6	Clinical pharmacology and general internal medicine
Dr R	ST3	Acute internal medicine and general internal medicine
Dr D	ST3	Acute internal medicine and general internal medicine
Dr Z	ST3	Acute internal medicine and general internal medicine
Dr P	ST7	Respiratory medicine and general internal medicine
Dr N	ST5	Endocrine and Diabetes and general internal medicine
Dr M	ST5	Infectious diseases and general internal medicine
Dr V	ST3	Rheumatology and general internal medicine

audio recorded, with the express permission of the candidates, for analysis. The interviews followed a semi-structured approach¹⁰, with several open “anchor questions” that were used to stimulate discussion and reflection¹¹. The opening question was always, “*What did you learn on the “Being the Med Reg” course?*”.

The interviewer remained sensitive to emerging recurrent themes and topics in each interview, and subsequent interviews were directed towards fleshing out and further characterising these emergent themes¹². This iterative process, whereby the qualitative data is reviewed and analysed in real time and used to further direct further interviews, is one of the hallmarks of content thematic analysis in medical education¹³. The audio recordings were contemporaneously analysed separately by two authors (LH and BL). Each author coded the set of interviews into initial codes, or topics, that described the essence of the statement in question¹⁴. Working independently, each author organised these codes thematically into coherent, related groups so that recurrent topics in each interview were connected and compared. This helped establish lines of connection between the emergent themes in the qualitative data. At this point, the authors entered a collaborative process of theme exploration, using the source interview text to guide and establish themes and how they relate to each other^{xiv,15}. This led to the construction of 10 agreed themes.

After 12 interviews it was noted that no further themes were emerging from the analysis, therefore data saturation had been achieved; data collection was terminated at this point.

Results

The initial coding process generated 34 initial codes, which were simple descriptors of statements made

by the candidates. These initial codes were analysed, cross-referenced and eventually grouped into the following 10 categories:

1. Exploring grey areas
2. Horizontal learning
3. Comparing practice
4. Validating current practice
5. Defining the medical registrar role
6. Developing skills
7. Understanding medicolegal frameworks
8. Managing cognitive load
9. Appreciating authenticity
10. A safe space

Further collaborative analysis of these categories led to the development of the following overarching themes which describe the learners’ perceptions of, and self-reported learning outcomes from, our training day:

1. Sharing
2. Sensing
3. Transforming
4. Endorsing

These themes, with their component categories, are explored below with illustrative quotes.

1. Sharing

In this context, *sharing* is an *outward* activity whereby candidates and discussants express publicly their ideas and opinions. This involves drawing on prior experience and anecdotes, and giving voice to personal insights and beliefs. This process of disseminating lived experiences amongst the peer group allows a form of collective understanding to develop. Sharing thus facilitates collaborative learning through which a group can use collective knowledge to address problem-solving tasks and to crystallise hitherto unclear, or implicit, feelings and concepts.

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Exploring “grey areas”

When faced with complex simulated clinical scenarios our candidates recognised the existence of “grey areas”, reflecting those challenges encountered in real-life practice wherein competing clinical, medicolegal and ethical considerations generate uncertainty. In such circumstances our candidates understood that different individuals’ approaches might differ.

“You can say, “I personally would have done this, maybe that’s right or wrong”” (Dr F)

“This might be one way of dealing with it, and recognising people have different opinions and different ways of dealing with it” (Dr R)

Furthermore, our participants accepted that in the absence of consensus, or a “textbook” solution, it can ultimately be the case that there is no clear “right” or “wrong” answer.

“This is classical medicine on the front line where it blurs medical, ethical [and] legal boundaries. And everyone ends up looking at the facilitator as if they have the “right” answer. I don’t think there is a right answer” (Dr F)

“It’s often [a] “grey area”, there’s no kind of rule about what you should do [...] there’s nothing written in a textbook saying “this is what you must do”” (Dr L)

“There is no right or wrong answer” (Dr R)

Our registrars acknowledged the difficulty of working with uncertainty, in the absence of a clearly defined solution, and expressed a desire to achieve a balance between the competing priorities these “grey areas” present. They recognised the value in discussing with contemporaries subject matter that can, in the real-world environment, be difficult to learn.

“[There is] a balance to strike and I think that’s what makes the course so interesting” (Dr F)

“We often only work out how to work with uncertainty by watching consultants; it’s difficult to learn... so it was good to have these grey areas [...] talked about, discussed” (Dr R)

Debriefing sessions provided our candidates a forum in which to discuss these grey areas; to attempt to outline the perceived problems and share their personal thought-processes for, or approaches to, dealing with uncertainty. In doing so our participants were able to articulate implicit concepts – as examples; the notions that we don’t always know what to do in every situation or that we are mentally balancing conflicting priorities.

Horizontal learning

By participating in group debriefs our candidates were able to engage in horizontal learning; sharing knowledge, experiences and anecdotes with their

immediate peers. Our participants enjoyed the rare opportunity to interact with other registrars in a non-clinical setting, being able to share with, and learn from, their contemporaries. Moreover they were conscious of the benefits of learning in such a mixed group; registrars from different specialties coming together to represent a variety of viewpoints, opinions and approaches when “workshopping” solutions to the grey areas described above.

“There is always something to learn and everyone always has a different perspective. The discussion around that makes the [course] interesting” (Dr F)

“What was useful was sitting around in the group, with some quite senior registrars, and having it as a workshop and thinking about the ways each person would approach that situation so you kind of come up with a consensus” (Dr L)

“It is very rare that you get different medical registrars from different specialties who all do the medical take and have different ways of doing things – that is a really nice thing” (Dr A)

Candidates with less experience relished the ability to learn from their more senior colleagues, recognising the benefit of the mixed experience levels within the group. Conversely the more senior candidates understood that they still had things to learn and appreciated the inputs of the more junior registrars.

“I’m learning from the experiences of people who have been doing this for a few years” (Dr L)

“You had both senior registrars and junior registrars, and the senior registrars who had [been] off doing other things would learn things from the juniors about how they do it, but equally the juniors would learn from the seniors” (Dr A)

“There’s always something to learn” (Dr F)

Ultimately, most agreed it was beneficial to have exposure to a range of varied opinions, the sharing of which represented an exchange of knowledge which enriched the collaborative learning experience.

“The reason [the course] obviously works is to have a mix of [experienced] people and younger, fresher, keener people, and you can then exchange these viewpoints and exchange wisdom” (Dr F)

“Mixed levels provides variety so better to merge different levels” (Dr L)

2. Sensing

The second emergent theme was *sensing*. In contrast to *sharing*, we understand sensing as an *inward* activity whereby individuals compare themselves to others. Participants “audition” their colleagues’ approaches, ideas or techniques, accepting those parts that they approve of and rejecting those they do not. “Sense-checking” one’s own practices against others’ allows registrars to reassure and validate themselves. On

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the other hand, noticing and examining the ways in which one's own practice diverges from that of the group acts as a catalyst for self-reflection and can drive alterations to future practice. Through the process of sensing candidates may begin to recognise, and in some ways potentially refine, their own sense of self.

Comparing practice

When observing simulated scenarios, and through receiving shared experiences and knowledge in the subsequent debriefs, our candidates were given an opportunity to observe their colleagues "at work" and understand their thought-processes. Having observed, our registrars were then able to internally critique their colleagues' approaches – accepting or rejecting different aspects.

"You think, 'What would I have done in that scenario?' or, 'Oh, I wouldn't have done that, I would have thought of this'" (Dr F)

"It was good to see how other people approach it" (Dr G)

"Even if you don't do a scenario you still get to sense-check other people's way of doing things, see if you agree" (Dr R)

One candidate in particular reflected that real-life clinical practice offers limited opportunities to observe one's immediate peers or sense-check ideas.

"I am increasingly conscious that as you get more senior you practice alone" (Dr F)

Validating current practice

Apart from incorporating or rejecting new options for practice, comparing one's approach with others' offers an opportunity to validate what one is already doing.

"Checking you're doing things right is really ... um, checking you're working the same way as everyone else is good" (Dr R)

"It was a useful space in which to ... sort of remind myself that I have the skills that are demanded of the med reg" (Dr H)

Learners appreciated the rare opportunity to discuss their impressions and management plans with their peers, and found this an exercise in self-reassurance.

"Sometimes you want to just 'read the room', get a consensus... you can't do this at work as you are on your own" (Dr V)

"When you are striking out on your own, or deviating from a guideline (at work), you don't know if you're being a maverick or being reasonable until you talk it out" (Dr N)

Defining the medical registrar role

An unexpected theme which emerged from our candidates' feedback on the course was an apparent

attempt to define the role of the medical registrar. Participants shared their personal beliefs about the exact nature of their own work, their insights into what defines the medical registrar role and how they feel they are perceived by others. Through this overlapping process of sensing and sharing they attempted to propose elements of a shared definition of what a medical registrar is, or should be. Common aspects of the medical registrar role included the risk manager, the leader, the overseer, and the "system-navigator".

"You learn as a med reg that the principle thing that you are is a 'risk sponge', because what people want to say is 'I spoke to the med reg, I wrote that in the notes, it's no longer my fault'" (Dr F)

"You are basically trying to control a system, which is under stress" (Dr L)

"It's a lot about knowing the practicalities of being the medical registrar because the challenge is not always about medical knowledge but about knowing all the services that are available" (Dr A)

3. Transforming

The theme of *transforming* relates to the application of new knowledge into clinical practice. These facets of the analysis incorporate the self-reported changes in our registrars' perception of their own practice, as a consequence of the training day.

Developing skills

Our candidates recognised that the course was aimed particularly at addressing an important, often-used group of skills which are not taught elsewhere, or are perhaps more difficult to practice.

"I think a lot of the skills [in the simulation day] are ones which are not formally taught, as it were, but ones which we need to use all the time" (Dr H)

"They call them 'soft skills', don't they. Communication and suchlike. You get them taught really, you have to just observe others. It's nice to have them spelt out here though" (Dr D)

Skills articulated in the feedback conversations included; knowing how to escalate in clinical scenarios and asking for help, having awareness of team-members' activities and level of experience, and communication skills – when discussing or negotiating with colleagues in other specialties and in sensitive conversations with patients.

"What this course is trying to touch on is the things that you aren't prepared for, you know.. perhaps more mental health and difficult cases, perhaps having a frank disagreement with another team, you know, you are at total loggerheads about what should happen to this patient" (Dr F)

"Sometimes you get stuck in the middle, and knowing who to contact, when to contact, is really useful" (Dr F)

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“A non-technical skill that it helped improve is knowing the strengths and weaknesses of the team... and delegation of workload. For example on the medical take one thing that happens not that infrequently is that the FY1 goes away to clerk a patient and, yeah, there’s a bit of uncertainty about what they are actually doing in that time; are they stuck or is the patient really unwell? Are they stuck with a deteriorating patient and don’t know how to escalate for help?” (Dr H)

“Breaking bad news, treatment escalation, discussing resuscitation – I had touched on this as an SHO but always had senior supervision – [the course] gave me confidence in being able to deploy these skills in day to day practice” (Dr H)

“I think [Scenario 2] was the one that really changed my practice... If you couldn’t get hold of a consultant at that time – you would still be able to make a decision” (Dr G)

Understanding medicolegal frameworks

Many of the scenarios created for our course included medicolegal elements, including decision-making around cardiopulmonary resuscitation orders, duty of candour, and the legality of relatives filming consultations. These scenarios, and the discussions around these often misunderstood and frequently anxiety-inducing concepts, evidently held importance for our registrars.

“The medicolegal stuff really sticks out for me” (Dr R)

“Finding out the exact bit of legislature we are using in the DKA scenario to treat the patient – that was so good to know, it makes me more confident in what I’m doing” (Dr Z)

The scenario which seemed to resonate most with our registrars was Scenario 3, featuring the patient in DKA with questionable capacity. This was mentioned numerous times with participants in particular recognising the difficulty in navigating a complex situation with reference to the legal frameworks of the Mental Health and Mental Capacity Acts. One candidate described using their experience from the simulation course when dealing with a similar real-life scenario.

“One thing that stood out was the bit about the patient who had variable capacity and the interplay between what you would do with someone who had a documented mental illness, but that also had variable capacity at the time” (Dr G)

“I have used the learning from the DKA patient with questionable capacity... I learned that you have to be very, very careful with capacity. That specific scenario has come up in my practice” (Dr A)

Managing cognitive load

Managing cognitive load is the non-technical skill of dealing with multiple simultaneous competing demands in a time-pressured environment. Our participants were required to deal with near-constant bleeps, with questions and queries from other members of staff during their scenarios. The feedback indicates they are aware of the need to divide attention appropriately, to maintain awareness of multiple situations and to deal with distractors.

“Busyness aspect – are you losing sight of what is happening?” (Dr F)

“It wasn’t always the scenarios that were useful, it was the way in which they kind of rolled out... for example in the scenario they were getting beeped about this thing, then beeped about something else, and they were getting, like, 10 bleeps. How do you manage having 15 bleeps at once?” (Dr L)

“I thought it was good that you had to deal with multiple competing priorities” (Dr A)

“Managing time pressures and work load is really key” (Dr R)

4. Endorsing

In the theme of *endorsing* our candidates spoke of “buying into” the simulation learning environment and how this is influenced by the design, content and delivery of the simulation scenarios. Familiar, recognisable and authentically complex scenarios invite participants to appreciate the application of resultant learning points to real-life situations and thus augment the overall learning experience, perhaps (as discussed above) leading to changes in practice. By confronting challenging subject matter in the simulation environment candidates and discussants were able to experiment, inhabiting discomforting scenarios and experiencing real evoked emotions, whilst remaining within a psychologically safe space.

Appreciating authenticity

Our candidates were able to recall the scenarios and remarked both on their complexity and their relevance to real-life practice. The scenarios were described as “likely” – as in, likely to be encountered in real-life.

“I remember the scenarios were all really likely” (Dr R)

“There wasn’t anything that made me think ‘oh, this isn’t relevant to me’” (Dr N)

One registrar compared our scenarios with those experienced in other courses, recognising our efforts to ensure realistic levels of complexity in their creation and delivery. They further noted that this credibility comes, at least in part, from the scenarios having a basis in the real, lived experiences of their author.

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“Every scenario had something that was a bit more complicated than it initially appeared [...] on other courses the scenarios are quite... simple?” (Dr G)

Another participant identified the authenticity of our scenarios as being an important component in their ability to evoke real emotions in the participants. This emotional arousal was considered important to our registrars, and was often tied to their perception of the training day being useful and relevant to their practice and learning.

“I remember the cases... they had a ring of truth to them” (Dr F)

“I think the fact they were all based on real scenarios made it more realistic and believable” (Dr G)

A safe space

The emotional arousal and stress response experienced by the candidates during their scenarios was contrasted to the feeling of psychological safety in the debrief. Our candidates remembered the course as providing a “safe space” in which to check ideas, to practice – a rarity in day-to-day reality.

“[In real practice] there isn’t really a safe space to go “Do you think I’m doing the right thing?” very often” (Dr F)

The simulation environment is designed to provide exactly this; a space to “try things out” without fear of causing real-life harm or consequences, and without judgement from colleagues. Our candidates felt that the course provided this psychologically safe space and appreciated the utility of being able to practice within it.

“I think this is a safe space” (Dr F)

“For certain trainees being able to practice that in a safe setting is useful” (Dr H)

“It was good to try things out safely” (Dr R)

Buying-into and engaging with our authentic scenarios, candidates could experience a real psychological frisson when confronted with challenging content. Our registrars responded positively to this opportunity – describing one such scenario as “really good” even though it was recognised to be “distressing and out of [the] comfort zone”.

“There was a difficult scenario where a relative who was frustrated... took out their phone and started putting it in the doctor’s face and filming them... and I thought that was really good because it’s a good example of how [registrars] are presented with a situation that is very distressing and out of your comfort zone” (Dr L)

This juxtaposition of psychological danger and psychological safety was recalled as being an important catalyst for discussion and learning in the debrief conversations. The authenticity of the scenarios and the psychological safety of the debriefs

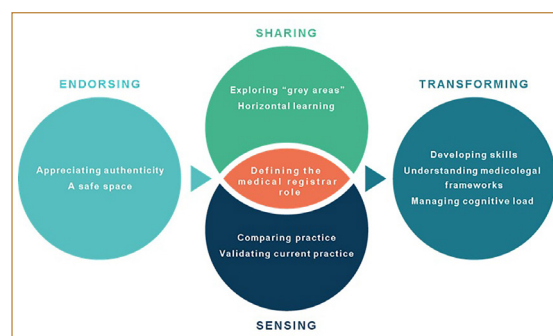


Figure 1. A theoretical schema displaying our interpretation of the hidden curriculum of our simulation-based training day

were felt to be important preconditions for the *sensing* and *sharing* described above.

“I think that the scenarios had high enough fidelity in them to, you know, to genuinely make people feel stressed and under pressure and bring up interesting things” (Dr F)

Further conceptual analysis

The final stage of analysis was a collaborative process whereby the authors developed a more nuanced theoretical framework that described the candidates’ self-reported learning outcomes of the training day (Figure 1). This schema illustrates how the themes described above interact and influence learning. In the schema, *endorsing* acts as a catalyst for *sharing* and *sensing* to take place, eventually leading to *transformation*.

Discussion

The aim of this paper was to provide a qualitative evaluation of a simulation-based training day for specialty registrars working within acute medicine, based on reflections of the learner group, in an attempt to map and explore the hidden curriculum of our intervention, using thematic analysis. We have developed a theoretical framework of our training day which describes how the learners *endorse* the authenticity and verisimilitude of the simulation, whilst appreciating the psychological safety of the debriefs; this endorsement facilitates the twin reflective processes of *sensing* (checking, comparing and validating one’s own practice) and *sharing* (collaborative learning). This ultimately leads to a sense of professional *transformation*, conceived as a change in practice or professional development.

Simulation training is extensively researched, but whilst there is a growing literature describing and evaluating courses that prepare doctors in training for the medical registrar role^{16,17,18}, there is little published research on simulation for existing medical registrars. The role of the medical registrar is often perceived as a critical one, carrying considerable responsibilities;

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especially out of hours. In a 2013 report¹⁹, the Royal College of Physicians called the medical registrar the “unsung heroes of patient care”. In light of the significance of the medical registrar role, there is a strong argument for developing a clear academic understanding of how registrars learn. We hope this exploration of a small training day may encourage other institutions to either carry out their own evaluations, or perhaps instigate a similar simulation training programme for their own registrars, and thus catalyse this academic conversation.

Exploration of the role and identity of the medical registrar has been reported before in qualitative research, from the point of view of existing medical registrars²⁰, junior doctors²¹ and senior clinicians with interests in medical education and leadership²². The findings of this paper show that our medical registrar participants are keen to elaborate these conversations about their professional identity and role. We found that our registrars like to contextualise their learning at the simulation day within their perceived framework of what a medical registrar “ought” to be doing as part of their role. It seems from our interviews that this role is not fixed nor universal, and likely relates to cultural and organisational differences between hospitals and regions of training in the UK.

Authenticity was prized by our learners. They drew transparent lines of correlation between authenticity and psychological fidelity. In simulation-based education “psychological fidelity” is defined the sense of “realness” or believability of a simulation scenario²³. Psychological fidelity is often – but not always – related to environmental fidelity; how real the simulated environment and simulated “patient” are felt to be^{24,25}. Our respondents were clear that the scenarios were felt to be valid examples of the content of the average medical registrar’s workload, which somehow legitimised them, and this legitimisation was necessary for learning to take place. Authenticity likely arose from the fact that all scenarios were drawn from real (but carefully anonymised) encounters from the author’s clinical career. We recommend that this approach is used by other simulation-based educators developing similar courses, rather than using fictionalised cases.

We were surprised by the complexity of the learners’ reflections and insights into their experiences of the training day. Understanding the hidden curriculum of our course not only allows us to continue to refine and improve upon its content and delivery, but helps us better articulate

its educational value. With the introduction of the new IMT year 3 (IMT3) in August 2021, it is our intention to open the course to IMT3 doctors, as this evaluation has revealed learning outcomes that are equally applicable to trainees about to commence their medical registrar years.

We hesitate to generalise our findings, as we recognise the limitations of this evaluation (below). Instead, we advise other people currently delivering (or thinking about delivering) similar simulation-based training for registrars working in acute medicine to undertake similar evaluations of their courses to better identify the learners’ reported learning outcomes. Through ongoing inter-department collaboration and sharing of data, there is an opportunity to build not only an increasing library of shared experiences and simulation strategies, but a clearer understanding of how and what registrars working in acute medicine learn on such simulation-based training days, and therefore be better able to offer truly relevant and effective training to this group of doctors.

Limitations

We have analysed the feedback of a small number of trainees at a single centre after a single day of training. We are cognisant that feedback bias may have affected the content of the interviews, as learners may have consciously or unconsciously aimed to deliver positive feedback to their own colleagues. We appreciate that our findings are not generalisable and our theoretical framework describes only our analysis of our own training day, and cannot be extrapolated to make claims regarding how medical registrars learn in simulation training in general.

Conclusion

Our simulation-based training was not a direct transfer of clinical knowledge or skills from teacher to learner, but a platform upon which the candidates were able to gain insights into their own learning and current practice, explore inter-connectivity and personal practice, and reflect upon methods of putting changes in understanding into practice to develop and progress their clinical role. We encourage educationalists who offer simulation-based training to medical registrars to undertake their own evaluative exercises, so that comparisons can be drawn between institutions.

Declaration of competing interests

Nothing to declare

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