BMJ Open

Virtual visiting in intensive care during the COVID-19 pandemic: a qualitative descriptive study with ICU clinicians and non-ICU family team liaison members

Andreas Xyrichis ,[1] Natalie Pattison,[2] Pam Ramsay,[3] Sian Saha,[4] Amelia Cook,[5] Victoria Metaxa,[6] Joel Meyer,[7] Louise Rose [1]

To cite: Xyrichis A, Pattison N, Ramsay P, *et al*. Virtual visiting in intensive care during the COVID-19 pandemic: a qualitative descriptive study with ICU clinicians and non-ICU family team liaison members. *BMJ Open* 2022;**12**:e055679. doi:10.1136/bmjopen-2021-055679

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (http://dx.doi.org/10.1136/bmjopen-2021-055679).

Received 22 July 2021
Accepted 23 March 2022

For numbered affiliations see end of article.

Correspondence to
Louise Rose;
louise.rose@kcl.ac.uk

ABSTRACT

Objective To understand the experiences and perceived benefits of virtual visiting from the perspectives of intensive care unit (ICU)-experienced clinicians and non-ICU-experienced family liaison team members.

Design Qualitative descriptive study.

Setting Adult intensive care setting across 14 hospitals within the UK National Health Service.

Participants ICU-experienced clinicians and non-ICU-experienced family liaison team members deployed during the first wave of the COVID-19 pandemic.

Methods Semistructured telephone/video interviews were conducted with ICU clinicians. Analytical themes were developed inductively following a standard thematic approach, using 'family-centred care' and 'sensemaking' as sensitising concepts.

Results We completed 36 interviews, with 17 ICU-experienced clinicians and 19 non-ICU-experienced family liaison team members. In the context of inperson visiting restrictions, virtual visiting offered an alternative conduit to (1) restoring the family unit, (2) facilitating family involvement, and (3) enabling sensemaking for the family. Virtual visits with multiple family members concurrently and with those living in distant geographical locations restored a sense of family unit. Family involvement in rehabilitation, communication and orientation activities, as well as presence at the end of life, highlighted how virtual visiting could contribute to family-centred care. Virtual visits were emotionally challenging for many family members, but also cathartic in helping make sense of their own emotions and experience by visualising their relatives in the ICU. Being able to see and interact with loved ones and their immediate care providers afforded important cues to enable family sensemaking of the ICU experience.

Conclusions In this UK qualitative study of clinicians using virtual ICU visiting, in the absence of inperson visiting, virtual visiting was perceived positively as an alternative that promoted family-centred care through virtual presence. We anticipate the perceived benefits of virtual visiting may extend to non-pandemic conditions through improved equity and timeliness of family access to the ICU by offering an alternative option alongside inperson visiting.

Strengths and limitations of this study

- We included both intensive care unit (ICU)-experienced clinicians and non-ICU-experienced family liaison team members from multiple centres across the UK, giving a breadth of experience with virtual visiting.
- We used clinician-derived data from which to deduce understanding of the experience of virtual visiting, leading to a partial understanding from one stakeholder group.
- Because of social distancing restrictions most of our interviews were completed by telephone or online, rather than face to face.
- We used rigorous methods to generate codes and themes from our data, including dual coding of 30% of transcripts to enhance trustworthiness and providing sufficient raw data to provide a vivid picture.

INTRODUCTION

During the COVID-19 pandemic, intensive care units (ICU) around the world were required to rapidly implement alternatives to inperson family visiting due to imposed visiting restrictions. Commonly adopted strategies included the creation of ICU family liaison teams comprising ICU-experienced or non-ICU-experienced staff (eg, doctors, nurses and allied health) to facilitate communication (telephone or video) with family members and use of videoconferencing technology to facilitate virtual visiting.[1] Prior to the pandemic, most ICUs were not orientated towards or adequately resourced to provide virtual visiting as part of routine family-centred care.[2] Prepandemic ICU guidelines focused on inperson visiting only, with ICU visiting policies promoting relaxation of restrictions on timing and duration of inperson family visits.[3]

Current evidence on family visiting in the ICU suggests policies encouraging family control over when and how long they can visit positively influence family's psychological outcomes, satisfaction with care, family participation in decision-making and in some aspects of personal care.[4 5] Inperson presence may decrease separation anxiety, reduce uncertainty or distress relating to prognosis and treatment plans, and increase perception of feeling safe.[6] Currently, there are few data informing our understanding of the potential effect of virtual ICU visiting on family, patient or healthcare professional outcomes, including potential benefits and harms.

Irrespective of inperson visiting restrictions, obvious advantages of virtual visiting include enabling access for family members who live in a different city, or indeed country, those with substantial work or caregiving commitments, and those family members with frailty or physical incapacity.[7 8] Furthermore, virtual visiting may help alleviate some of the challenges of organising inperson ICU visiting, which can be stressful and exhausting for families, with many reporting feeling obliged to remain at the bedside for prolonged periods of time.[9 10]

Virtual visiting includes synchronous video-assisted calling on designated devices, video-calling on mobile phones or devices belonging to patients, and provision of asynchronous video and audio messages. Widespread introduction of virtual visiting to address the unprecedented and unforeseen challenges posed by the pandemic[11] presents an opportunity to understand the impact on the family, patients and the clinical team providing care. There is also opportunity for learning in relation to improving and diversifying methods of family access to the ICU in the future.

Therefore, we conducted this qualitative descriptive study to explore clinician experiences, including perceived benefits for family members, including significant others not related by blood or marriage, of virtual visiting during the COVID-19 pandemic. We interviewed both ICU-experienced clinicians and non-ICU-experienced clinicians in family liaison teams across multiple UK ICU settings.

METHODS

Setting, recruitment and participants

We recruited ICU-experienced and non-ICU-experienced clinicians deployed as family liaison team members working in adult ICUs during the COVID-19 pandemic via email contacts within our Life Lines database. Life Lines is a philanthropic COVID-19 rapid response project that has delivered over 1400 4G-enabled Android tablets to ICUs in 180 National Health Service (NHS) hospitals with preinstalled software, aTouchAway, modified for the purpose of supporting family virtual ICU visiting. We also recruited participants via social media, snowballing and personal contacts.

Participants self-identified in response to one of the above recruitment strategies. The only inclusion criterion was working in, or deployed to, an adult ICU during the first UK COVID-19 pandemic wave (March–June 2020). We continued to recruit participants until the interview team perceived no new themes and we had maximised diversity in terms of representatives from different NHS hospitals, professions and ICU experience levels.

Data collection

Experienced, doctoral-prepared qualitative researchers with a clinical background in nursing (AX, LR) and medicine (AC), with no established relationship with participants prior to the study, conducted telephone/video interviews (depending on participant preference) using a semistructured interview guide developed iteratively by the study team (see online supplemental file 1). Interviews were digitally recorded and transcribed by a professional transcription company. Interview length ranged from 25 to 60 min.

Data analysis

We analysed interview transcripts inductively using a standard thematic analysis approach, following the principles of thematic coding, categorisation and abstraction.[12] We used NVivo V.12 software (QSR International) to manage the data. Transcripts were initially reviewed indepth by two investigators (AX, LR) to become familiar with the data. One investigator (AX) then coded all transcripts line by line, generating an initial codebook. A second investigator (LR) coded 30% of the transcripts using both open and focused coding. We drew from the evidence base on family meaning-making in the ICU[13–15] to gain conceptual leverage on our data, drawing on the notions of 'family-centred care' and 'sensemaking' as our key sensitising and explanatory concepts. We held a series of data analysis meetings to refine the codebook, to identify, define and refine themes, and to ensure rigour (namely dependability and credibility). Themes were then discussed, revised and verified by the wider research team (NP, PR, SS).

Patient and public involvement

Study development was informed by significant family member experience from within our partner hospitals, who identified a need for a virtual visiting solution in the absence of inperson visiting. A patient and family member representative was part of our advisory group for the current research work around virtual visiting, who offered regular feedback on all aspects of the study. Patients and family members were not involved in the recruitment and conduct of the study. Dissemination of study results is supported by a dedicated project website and social media account, in addition to academic outputs including publications and conference presentations.

Prior to the interview, we provided a participant information sheet outlining the voluntary nature of participation, the risks and benefits, and data confidentiality. Digital consent was stored in a stand-alone digital file.

Table 1 Participant characteristics

N=36	n (%)
Age, mean (range)	32 (24–57)
Female	23 (64)
Profession*	
Physicians	20 (56)
Nurses	8 (22)
Physiotherapists	5 (14)
Genetic counsellors	3 (8)
ICU-experienced staff	17 (47)
Non-ICU-experienced family liaison team members	19 (53)

*15 physicians, 4 nurses, 3 physiotherapists and all 3 genetic counsellors were non-ICU-experienced family liaison members.
ICU, intensive care unit.

FINDINGS

We recruited 36 participants, 17 (47%) ICU-experienced clinicians and 19 (53%) non-ICU-experienced family liaison team members, from ICUs in 14 NHS hospitals in the UK (table 1). In the context of inperson visiting restrictions, participants described virtual visiting to act as an important conduit to (1) restore the family unit, (2) facilitate family involvement, and (3) enable sense-making for the family (see online supplemental file 1 for data codebook).

Restoring the family unit

Virtual visiting offered the family a welcome opportunity to see and (when conscious) speak with their relative at a time when inperson visits were prohibited. This opportunity was very important for many families who, prior to virtual visiting, had not seen their loved ones for days or weeks since hospital admission. In their interviews, our clinician participants were keen to define the key function of virtual visiting as connecting families:

> When you don't get to see your family member for weeks and weeks on end […] like it makes a massive difference being able to actually see their face and video call them. (P21, female nurse, non-ICU-experienced)

A key advantage of virtual visiting, commonly noted by the participants, was flexibility to enable visits with more than one family member at a time. This was contrasted with inperson visiting, during which multiple visitors at once are not normally accommodated. For example:

> It was great because the wife and the children were in one screen and the brother was in another and they'd kind of talk amongst themselves but like, occasionally direct things at the patient. And that was amazing because I think it just provides, like, […] the home environment and what it's normally like. (P17, female physician, non-ICU-experienced)

Another advantage of virtual visiting over inperson visiting was the opportunity to connect close family members living in different geographical locations, within and outside the UK, who even if inperson visits were permitted would not be able to travel:

> I helped a woman set up, she had eight daughters I think, and we helped her set up with one of her daughters in New York […] the daughter was just very grateful and happy to be able to speak to Mum. (P32, female counsellor, non-ICU-experienced)

ICU inperson visiting is difficult and stressful because of the highly technological, busy and noisy environment and seeing other critically ill and vulnerable patients. Our participants perceived virtual visiting to shield the family from the more distressing aspects of the ICU environment and enabled focusing of their attention on reconnecting with their loved one:

> A lot of people I spoke to, I just knew that they would never have come to see their relative in person, even in normal times […] it was great that they could just be present– that they weren't put off by all the tubes and the other staff and the other patients and they only saw their own relative. (P17, female physician, non-ICU-experienced)

Participants identified that virtual visits restored the patient into the family unit and back into everyday life, a key focus of which involved sharing of family news and updates. With many patients having extended ICU stays, the ability of a virtual visit to take the patient into the home (virtually) was noted to have special value for the family. For example:

> I think there's a lot of sort of just updates on general life. They're showing them the cat, or this is what the dog's doing. […] So they'll tell them sort of about silly things, like, oh the toilet got fixed, or uhm so and so went back to work. (P16, female physician, non-ICU-experienced)

The notion of the family unit extended beyond immediate family to include close personal friends and pets, both groups that have limited access to the ICU in normal circumstances. This was a great source of comfort to patients:

> One chap, he's been with us for a while, and had been very, very sick […] and he loves his dog, basically. So, his dog was on the screen, and he was trying to like stroke his dog. It was just lovely for him see and feel, like sort of with his dog and his dog was here. […] ordinarily over a phone we wouldn't have been able to see. (P5, female nurse, ICU-experienced)

Family involvement in care

Virtual visiting enabled the family to connect not only with their loved one, but also with the ICU team, enabling involvement in various aspects of care they were excluded

Table 2 Family involvement in care quotes

Examples	Illustrative quotes
Spiritual care	"We've had a lot of prayers on video call. We've had-- yeah, a lot of bible passages. They had calls with a priest; the family were really religious and so there was a lot of praying and stuff on the calls, and then they were like, oh, could they get an ordained priest in?" (P1, female physician, non-ICU-experienced)
Weaning	"We had quite a lot of patients that had a tracheotomy and then we'd get to a point in the weaning programme where we'd use a speaking valve. And so then actually, we'd use [video call] in therapy from that point of view. To put the speaking valve on and then talking for the first time is a lot more meaningful to their family than to us. So we were then using that as almost an exercise for their speaking valve and for their weaning, doing it with that and then the family obviously being able to hear their voice makes a difference as well. It adds a lot more meaning to the conversation for the-- when you're using the speaking valve for the first time rather than chatting to us." (P30, male physiotherapist, ICU-experienced)
Rehabilitation	"And when the physios are trying to prop her on the bed and trying to get her to start building up her strength, she wasn't too happy trying to do it. And then the nurse suggested, 'How about we do a call with her mum and talk to her' and we did that. And, uh, yeah, she gained a lot of energy and motivation to do so. And since then, she would record her progress by showing-- by requesting video calls with her mum and that would push her towards being more rehabilitated." (P24, male physician, non-ICU-experienced)
Confusion	"It was a poor woman who'd been stepped down from ITU HDU, she was hysterically crying, and she'd somehow got it in her head that all of her family had died of COVID and they hadn't, but she couldn't, she just could not stop crying. She was wailing. So I got sent up there and I called her family and I got them set up on the, on the call and then as soon as she saw their faces, she was fine." (P22, female physician, non-ICU-experienced)
Orientating patients	"I think it definitely helped with orientation. And just, it was quite a confusing time, because some people would wake up and obviously have no idea what had happened to them. I just, the relatives could just help them with that timeline of events as well, which is really good." (P27, female nurse, non-ICU-experienced)
Communicating in patients' own language (including sign language)	"So, we had another patient who didn't speak any English who was starting to wake up and I thought she could understand and hear that I was speaking to her, so I rang her son and he said, 'Can we video call?' So we video called her. And I think that was probably the first time that, for me, it was-- I was really struck by how much of a difference that made." (P33, female physiotherapist, non-ICU-experienced)
Non-verbal communication	"There was one patient who is deaf normally and obviously the video was fantastic because his family could use sign language as well to communicate to him. And at first the nurse was a bit like 'oh I'm not really sure if that will work because he's deaf so he won't be able to hear.' But actually, you know, the visuals of him being able to sign was really, really nice." (P25, female physician, non-ICU-experienced)
Interacting with care providers	"There have been occasions where, for example, especially if the relative's medically trained, they try, they like to get a bit of a clinical update as well and and [sic] especially if the patient's not awake, sometimes the questions can be more directed at the other staff that are there and interacting more. Uhm so sometimes they do ask some questions to the staff." (P16, female physician, non-ICU-experienced) "I'll do the video call and they'll be like, 'Oh can I have a quick word with the nurse?' and if the nurse is around then I'll hand over to the nurse." (P1, female physician, non-ICU-experienced)

HTU, High Dependency Unit; ICU, intensive care unit; ITU, Intensive Treatment Unit.

from during visiting restrictions. Key examples are considered in the following paragraphs, and table 2 provides an expanded list of the types of care with illustrative quotes.

Participants perceived end-of-life conversations and family involvement in end-of-life care as an important benefit of virtual visiting in the context of inperson visiting restrictions. Participants were keen to note how much these moments were valued by family members:

> The times when we have used it [for end-of-life conversations] the families have just been so grateful, and I think the staff have realised what a difference that's made not only to the patients but to the families who haven't been able to be with them. So definitely it's made a real positive difference. (P7, female nurse, non-ICU-experienced)

Wider travel restrictions meant family members who might have otherwise travelled to see a loved one nearing the end of life were not able to do so. Virtual visiting offered those family members the opportunity to have a final moment with their loved one:

> The day before the medical team had found out that the gentleman actually had four children in [another country], adult children, that they hadn't known about before. And they had no idea that he was going to– that he was so ill…. So, the consultant was really, really keen to get all of the children on the call.

So it meant that I had an iPad and I contacted two of them, and then one of the nursing staff also had an iPad with the other two children on so that they could hear each other […] And then the consultant was able to let them know that their father was going to pass away simultaneously he managed to– he read a psalm for them from the computer at the bedside and then they had their final moments with him. (P26, female physician, non-ICU-experienced)

Virtual visiting allowed the family a presence in the ICU that enabled an unanticipated and meaningful role in rehabilitation activities. Many participants, physiotherapists in particular, outlined how family virtual involvement in rehabilitation served as major source of encouragement and motivation for patients. For example:

I actually used during my rehab sessions […] we got a patient sat on the edge of the bed, and they were able to sit independently without support for the first time. They were quite keen to get back to bed but we wanted to get them to stay on the edge of the bed so we video called their wife and then while they were sat on the edge of the bed, he was then able to talk to his wife about what she was up to […] then it just extended the amount of time he was able to sit on the edge of the bed because he was being distracted with a normal chat with his family. (P29, female physiotherapist, ICU-experienced)

Previously, during inperson visiting, family members would have an important role to play in helping to reorient patients with delirium. Virtual visiting enabled them to continue this function:

We had quite a lot of patients who were extremely, had very bad ITU delirium… we found the relatives a real calming influence on a lot of those patient groups. So, having the [video call] calms the patient, and also I think it was really beneficial for the relative because they then actually felt like they could be a bit more involved in the care and help reassure their relative. (P27, female nurse, non-ICU-experienced)

Helping confused patients with orientation and facilitating communication prior to restoration of voice or across a language barrier were also highlighted by participants as important unanticipated benefits of virtual visiting (see table 2).

Enabling sensemaking

Participants discussed consistently and at length the perceived benefit of enabling the family to make sense of their loved one's condition and care through virtual visiting. Participants recalled how positively the family reacted to being able to see their loved ones and their immediate care providers, such as their bedside ICU nurse:

Some relatives would have obviously never really understood what being on a ventilator looked like. So, when a patient was initially ventilated, we would [do a video call] so they could just see their relatives and see what they looked like. The fact that they'd kind of get to see the nurse and staff as well, so they get to sort of see who is looking after them in terms their relatives. And I think that also gave the families like a little bit of comfort as well because they can see you on the screen and have a chat with you, and it sort of makes you a bit more human and they can just see what's going on. (P27, female nurse, non-ICU-experienced)

Participants identified that few family members had prior experience of ICU and what a critically ill patient looks like. Participants expressed how 'seeing' enabled the family to process information given to them in a way they could not have done through a phone call. For example:

Initially we started to use it with patients who were awake as a way of them talking to their family member. But then as things progressed, we also started to do it with patients who were still sedated. Uhm, so family could see what that might look like, what the intensive care unit looked like just to put their minds at ease, really, and just show them the patient when they're intubated and just so they could put it together in their mind what it might look like. (P30, male physiotherapist, ICU-experienced)

Participants recalled some family members finding their virtual visit, specifically seeing their loved one on video for the first time, emotionally challenging. The family frequently found it difficult to cope when faced with the reality of their loved one's condition:

Some of the families were quite intense […] they would ring on the tablet and speak to the patient and then ring back to the patient liaison team and be quite distressed, saying, 'Oh, they're really upset, she's really upset, someone needs to go and see her.' But actually, [the patient] was just emotional about the whole thing, and we, we were there [to support her]. (P13, female nurse, non-ICU-experienced)

While participants tried to prepare the family for potentially upsetting images, for some the experience was too overwhelming, putting them off from further visits:

I spoke to the family and I said 'Look, he's going to be, he's going to be a bit puffy. You're not going to be able to recognise him as easily because he has tubes everywhere, lots of things you wouldn't want to see normally' And they were like, 'okay.' And they saw him. The mother gasped and started crying and walked away, and then the son was a bit shaken by it and he said to me 'okay, that's enough. Thank you.' And then that was the end of that. (P24, male physician, non-ICU-experienced)

Our participants also suggested that, although these visits had potential to be upsetting, they also appeared

cathartic for families in helping make sense of their own experience. Participants reported that after initial reluctance in some cases, the family became progressively more receptive to virtual visits. For example:

> There was one patient who I did the first call with his wife and she was like, 'Oh I'm not too sure about this,' and then the next day I rang her back and was like, 'I just wondered if you wanted to do another video call again?' and she was like, 'I don't know, I found it quite distressing yesterday so maybe not.' And then suddenly she's like, 'No, you know what, actually, yeah, okay, I'll do one.' And it was only a very, very quick call and she was like, 'Actually, thank you so much. Thank you so much for just ringing me back, that was so much better than it was yesterday.' So, she was obviously coming to terms with what her husband looked like. (P1, female physician, non-ICU-experienced)

By making sense of their relative's condition, and of their own emotions, participants suggested that family members found virtual visits a very reassuring experience leading to significant relief.

> They could see that we were people who were caring for their relatives as a person which I think that was really good. I think we didn't realise how much of a relief it would be to actually have something like that to communicate with the– It'd been so hard up until then with the phone calls, but just having the tablet, everybody seemed to relax a bit more about. It was just so much, it was just easy because we– they could see their relative and we weren't feeling we were having to describe difficult situations. They could actually see it for themselves. They could see - especially when the relatives were getting better, it was lovely for them to see that. It was just so much of a benefit. (P34, female nurse, ICU-experienced)

Further details of the themes with counts of coded data can be found in online supplemental file 1.

DISCUSSION

In this qualitative study, we explored the experiences and perceived benefits of ICU virtual visiting from the perspectives of ICU-experienced clinician and non-ICU-experienced family liaison team members. We found that virtual visiting, in the absence of inperson visiting, was an important alternative perceived to act as a conduit to (1) restore the family unit, (2) facilitate family involvement in care and decision-making, and (3) enable sensemaking for family members.

The COVID-19 pandemic imposed substantial threat to the family unit through the restrictions placed on hospital visiting, isolation and shielding requirements, and national and international travel constraints. This threat, as demonstrated in our data pertaining to adult ICU patients, has also been highlighted in recent studies in neonatal ICUs with substantial negative effects on neonate and family outcomes.[16] Safeguarding and being present to provide support are basic human instincts of family members during a crisis, including critical illness.[17] Thus, virtual visiting enables a form of presence for those families that would normally be present inperson, and furthermore extended this ability to be present, although virtually, to those family members and close friends who may have had geographical, physical or emotional barriers to inperson visits. This warrants consideration for policy-making, enabling ongoing adoption of virtual visiting and consideration of video technology for family meetings, family attendance on rounds, and participation in care planning and decision-making, thereby addressing issues of equity of access and carer burden.

We found virtual visiting was viewed by clinicians as an essential tool to facilitate a version of family-centred care in the absence of inperson visits, perceived as beneficial in terms of family experience that was somewhat unanticipated. As we previously reported in our UK-wide survey, the use of virtual visiting was highly variable in terms of the type of patients receiving visits, routine versus special case use, and visit frequency.[1] Virtual visiting may also not be universally suitable as some family members found seeing their loved one over video emotionally challenging. However, this 'shock' of seeing also happens with inperson visiting. This highlights the need to adjust visiting approaches and options to individual families, in line with family-centred care.

Physiotherapists in particular viewed virtual family presence as an important motivating tool. To date, family-centred care has, for the most part, assumed inperson presence to facilitate informed clinical decision-making and family participation in care.[18 19] A recent study conducted in two US centres identified restricted visiting may have delayed access to families for end-of-life treatment, limiting decision-making and thereby extending ICU length of stay and presenting further burden to constrained ICU healthcare services.[20] Virtual visiting now offers an opportunity to explore how family-centred care can be expanded to non-pandemic conditions through flexible and timely virtual presence at the bedside for those family members unable to visit inperson.

Our data indicate inperson visiting restrictions could pose a challenge to sensemaking for families. To avoid adverse psychological outcomes, family members of critically ill patients need to make sense of what is happening with their relative and what is needed of them in their new role as a caregiver.[13] This sensemaking is aided through visual and auditory cues that generate understanding of the situation. ICU clinicians, and bedside nurses in particular, have a role in providing and sorting cues through consistent messaging and opportunities for involvement in care and decisions.[21] In the absence of inperson visits, virtual visiting provides opportunities for families to obtain visual cues about their loved one, their condition and the care they are receiving. Further, families connect visually with ICU nurses and other clinicians,

who can help them process these cues into as positive an experience as possible.

A weakness of our study is the use of clinician-derived data from which to deduce understanding of the family experience of virtual visiting. This only allows partial understanding of the virtual visiting experience, but also offers important insight to inform the design of future research involving key ICU stakeholders. In subsequent and ongoing work, we are exploring virtual visiting from the family's perspective. We will also report data on the impact of virtual visiting on staff, including their perceptions of barriers to virtual visiting. Because of social distancing restrictions most of our interviews were completed by telephone or online; while we did not find this to limit participants' willingness to share their experience with us, it is conceivable that inperson interviewing could have allowed generation of richer data through greater interaction and development of rapport. As with any study that uses a self-identifying method of recruitment method, selection bias is a limitation. A strength of our study is the inclusion of ICU-experienced and non-ICU-experienced family liaison members from multiple centres, giving a breadth of experience with virtual visiting. Additionally, we used rigorous methods to generate codes and themes from our data, including dual coding of 30% of transcripts to enhance trustworthiness and providing sufficient raw data to provide a vivid picture.

CONCLUSION

Virtual visiting, used during the COVID-19 pandemic as one solution to inperson ICU visiting restrictions, was perceived by clinicians as a primarily positive intervention for family members that helped to restore the family unit, facilitate family involvement in care and decision-making, and aid in sensemaking. Although virtual visiting was viewed as a pandemic solution, our data suggest that offering it as an additional visiting option could extend ICU access to family and friends in geographically distant locations and to those family members unable to visit inperson. Furthermore, virtual visiting could help expand our ability to deliver family-centred care in non-pandemic conditions through flexible and timely virtual presence at the ICU bedside.

Author affiliations
[1]Florence Nightingale Faculty of Nursing, Midwifery, and Palliative Care, King's College London, London, England, UK
[2]University of Hertfordshire, Hatfield, England, UK
[3]School of Health Sciences, University of Dundee, Dundee, Scotland, UK
[4]ACET Research Team, King's College Hospital, London, England, UK
[5]Cicely Saunders Institute, King's College London, London, England, UK
[6]King's College Hospital, London, England, UK
[7]Guy's and St Thomas' Hospitals NHS Foundation Trust, London, UK

Twitter Andreas Xyrichis @AndreasXyrichis and Pam Ramsay @PamRamsay1

Contributors The study was led and conceived by LR and JM. AX, LR and AC contributed to the data collection. AX led the analysis of the data and development of the manuscript. LR, NP, PR and SS contributed to analysis and development of the final themes. LR, JM, VM, AC, NP, PR and SS provided critical comments on the draft manuscript. LR is the guarantor.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not required.

Ethics approval This study involves human participants and was approved by the King's College London Ethics Committee Minimal Risk Assessment (MRA-19/20-19282) and the NHS Health Research Authority (20/SW/0147). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request.

ORCID iDs
Andreas Xyrichis http://orcid.org/0000-0002-2359-4337
Louise Rose http://orcid.org/0000-0003-1700-3972

REFERENCES

1 Rose L, Yu L, Casey J, *et al*. Communication and virtual visiting for families of patients in intensive care during the COVID-19 pandemic: a UK national survey. *Ann Am Thorac Soc* 2021;18:1685-1692.
2 Hunter JD, Goddard C, Rothwell M, *et al*. A survey of intensive care unit visiting policies in the United Kingdom. *Anaesthesia* 2010;65:1101–5.
3 Davidson JE, Aslakson RA, Long AC, *et al*. Guidelines for family-centered care in the neonatal, pediatric, and adult ICU. *Crit Care Med* 2017;45:103–28.
4 Ferrando P, Gould DW, Walmsley E, *et al*. Family satisfaction with critical care in the UK: a multicentre cohort study. *BMJ Open* 2019;9:e028956.
5 Rosa RG, Falavigna M, da Silva DB, *et al*. Effect of flexible family visitation on delirium among patients in the intensive care unit: the ICU visits randomized clinical trial. *JAMA* 2019;322:216–28.
6 Coombs MA, Statton S, Endacott CV, *et al*. Factors influencing family member perspectives on safety in the intensive care unit: a systematic review. *Int J Qual Health Care* 2020;32:625–38.
7 de Havenon A, Petersen C, Tanana M, *et al*. A pilot study of audiovisual family meetings in the intensive care unit. *J Crit Care* 2015;30:881–3.
8 Zulman DM, Verghese A. Virtual care, telemedicine visits, and real connection in the era of COVID-19: unforeseen opportunity in the face of adversity. *JAMA* 2021;325:437–8.
9 Schneeberger A, Brandstetter S, Bein T, *et al*. Stressors and strains of next of kin of patients with ARDS in intensive care: a qualitative interview study using a stress-strain approach. *Intensive Crit Care Nurs* 2020;57:102783.
10 Alonso-Rodríguez A, Martínez-Villamea S, Sánchez-Vallejo A, *et al*. Perspectives of intensive care nurses on open visits in an ICU. *Enferm Intensiva* 2020.
11 Sasangohar F, Dhala A, Zheng F, *et al*. Use of telecritical care for family visitation to ICU during the COVID-19 pandemic: an interview study and sentiment analysis. *BMJ Qual Saf* 2021;30:715-721.
12 Needham DM, Sepulveda KA, Dinglas VD, *et al*. Core outcome measures for clinical research in acute respiratory failure survivors.

An international modified Delphi consensus study. *Am J Respir Crit Care Med* 2017;196:1122–30.
13 Davidson JE. Facilitated sensemaking: a strategy and new middle-range theory to support families of intensive care unit patients. *Crit Care Nurse* 2010;30:28–39.
14 Cypress BS, Frederickson K. Family presence in the intensive care unit and emergency department: a metasynthesis. *J Fam Theory Rev* 2017;9:201–18.
15 Vandall-Walker V, Clark AM. It starts with access! a grounded theory of family members working to get through critical illness. *J Fam Nurs* 2011;17:148–81.
16 van Veenendaal N, Deierl A, Bacchini F, *et al*. International Steering Committee for family integrated care. supporting parents as essential care partners in neonatal units during the SARS-CoV-2 pandemic. *Acta Paediatr* 2021.
17 Huynh T-G, Owens RL, Davidson JE. Impact of built design on nighttime family presence in the intensive care unit. *HERD* 2020;13:106–13.
18 van Mol MM, Boeter TG, Verharen L, *et al*. Patient- and family-centred care in the intensive care unit: a challenge in the daily practice of healthcare professionals. *J Clin Nurs* 2017;26:3212–23.
19 Hamilton R, Kleinpell R, Lipman J, *et al*. International facilitators and barriers to family engagement in the ICU: results of a qualitative analysis. *J Crit Care* 2020;58:72–7.
20 Azad T, Al-Kawaz M, Turnbull A, *et al*. Coronavirus disease 2019 policy restricting family presence may have delayed end-of-life decisions for critically ill patients. *Crit Care Med*;2021.
21 Davidson JE, Zisook S. Implementing Family-Centered care through facilitated Sensemaking. *AACN Adv Crit Care* 2017;28:200–9.