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Review

The experiences of adult patients, families, and healthcare professionals of CPR decision-making conversations in the United Kingdom: A qualitative systematic review



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Abstract

Aim: To conduct a qualitative systematic review on the experiences of patients, families, and healthcare professionals (HCPs) of CPR decision-making conversations in the United Kingdom (UK).

Methods: The databases PubMed, Embase, Emcare, CINAHL, and PsycInfo were searched. Studies published from 1 January 2012 describing experiences of CPR decision-making conversations in the UK were included. Included studies were critically appraised using the CASP tool. Thematic synthesis was conducted.

Results: From 684 papers identified, ten studies were included. Four key themes were identified:

- (i) Initiation of conversations – Key prompts for the discussion included clinical deterioration and poor prognosis. There are different perspectives about who should initiate conversations.
- (ii) Involvement of patients and families – HCPs were reluctant to involve patients who they thought would become distressed by the conversation, while patients varied in their desire to be involved. Patients wanted family support while HCPs viewed families as potential sources of conflict.
- (iii) Influences on the content of conversations – Location, context, HCPs' attitudes and emotions, and uncertainty of prognosis influenced the content of conversations.
- (iv) Conversation outcomes – Range of outcomes included emotional distress, sense of relief and value, disagreements, and incomplete conversations.

Conclusions: There is inconsistency in how these conversations occur, patients' desire to be involved, and between patients' and HCPs' views on the role of families in these conversations. CPR discussions raise ethical challenges for HCPs. HCPs need training and pastoral support in conducting CPR discussions. Patients and families need education on CPR recommendations and support after discussions.

Keywords: Cardiopulmonary resuscitation, DNACPR, Resuscitation, Conversation, Communication, Qualitative, Systematic review

Introduction

When someone experiences a cardiac arrest, cardiopulmonary resuscitation (CPR) can be performed in efforts to restart the heart.¹ Where cardiac arrest is an expected part of the dying process and CPR is not likely to be successful or in the patient's best interests,

national guidance exists for discussing, making and documenting anticipatory recommendations not to attempt CPR.^{1–2}

In the United Kingdom (UK), recent emphasis has been placed on patient and family involvement in CPR decision-making conversations, moving away from paternalistic care models where clinicians make CPR decisions for patients without their involvement.³

Landmark legal rulings,^{4–5} guidance from the General Medical Council,¹ and a statement from the British Medical Association,

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Royal College of Nursing, and Resuscitation Council UK⁴ state that clinicians should involve patients and families in conversations about CPR decisions. The COVID-19 pandemic and recent Care Quality Commission reports highlighted the lack of patient and relative involvement in CPR discussions and identified clear gaps in practice.^{6–7}

CPR discussions can be clinically, emotionally, and ethically challenging.³ These discussions can have significant impacts on patients, families, and healthcare professionals (HCPs). There are several processes in the UK to guide clinicians conducting CPR discussions.^{2,8–10} Perceptions of the process and clinical decision-making are influenced by a range of societal, cultural, and economic factors.^{8,11}

Our aim in this review was to explore what is currently known about how CPR decision-making conversations in the UK are experienced by patients, families, and healthcare professionals.

Methods

This review was guided by the Cochrane handbook chapter for qualitative systematic reviews¹² and conducted in adherence with PRISMA standards.¹³ The protocol was registered on PROSPERO (CRD42022304689).¹⁴

Search strategy and information sources

The search strategy was developed with advice from a specialist health librarian (GM) and was informed by an initial scoping review. It used a combination of the following MeSH headings and keywords: 1. Resuscitation, cardiopulmonary resuscitation, and Do Not Resuscitate (DNR); 2. Conversation, discussion, and communication; 3. Experience, attitude, and views; 4. United Kingdom, Britain, England, Scotland, Wales, Northern Ireland. Searches included papers published from 1 January 2012 to reflect the current landscape, not historic changes in research practice, hence in this rapidly changing area we focused only in the last ten years. The search strategies are described in [Appendix A1](#). Searches were conducted in the following databases: PubMed, Embase (OVID), Emcare (OVID), CINAHL (EBSCO), and PsycInfo (ProQuest).

Eligibility criteria

1. Population: Adult patients whom the CPR decision-making conversations are about, their families, and HCPs involved in their care. HCPs are registered healthcare professionals including doctors, nurses, and allied health professionals.
2. Exposure: Recommendations about CPR.
3. Outcome: Experiences of CPR decision-making conversations, defined as a discussion between HCPs, patients, and/or families about whether the patient would receive CPR if they experienced cardiac arrest.¹¹
4. Study design: Empirical studies using qualitative methods for data collection and synthesis published in peer-review journals.
5. Setting: Within the UK.

Articles were excluded if they were: conference proceedings, opinion pieces, reviews, theoretical papers, or PhD theses; purely quantitative studies; studies including children and neonates; studies that only took place outside of the UK.

Study selection

Following removal of duplicate papers, titles and abstracts of identified studies were independently double-screened for eligibility by two reviewers (MH, RS) and full text articles were independently assessed for eligibility by two reviewers (MH, GM) when the abstract was unclear. Disagreements were resolved by discussion between reviewers (MH, GM) and pre-planned consultation with a third reviewer (AMS) to reach consensus.

One reviewer (AMS) independently checked 10% of abstracts and 10% of full text articles to ensure reliability.

Assessment of quality of identified papers

Two reviewers (MH, GM) independently assessed the quality of the included studies and risk of bias using the Critical Appraisal Skills Programme (CASP) appraisal criteria for qualitative studies.¹⁵ Studies were not excluded based on their quality assessment, as limitations in reporting are not necessarily reflective of the quality or conduct of the research.^{12,16}

Data extraction and analysis

Two reviewers (MH, GM) independently extracted data relevant to the research question from the included studies using a piloted pro forma. The extracted data were then analysed using thematic synthesis.¹⁷ This included line-by-line coding with initial codes grouped into descriptive themes then higher-level analytical themes.¹⁷

Reflexivity

The author (MH) reflected critically^{18–19} on how their views could potentially influence the review as they are a Resuscitation HCP with a special interest in CPR recommendations. This bias was managed through use of supervision and regular reflection on the aims of the review.

Results

Study selection

A total of 684 studies were identified by the search strategy. After removal of duplicates, 443 studies were screened by title and abstract, and 106 studies were screened by full text review. Ten studies were included in the review ([Fig. 1](#)).

Study characteristics

Of the ten studies, nine studies^{20–28} focused on HCPs' experiences, one study²⁹ on patients' experiences, and none on families' experiences. All nine studies on HCPs' experiences included doctors, three studies included nurses,^{21–22,25} and one study included allied health professionals (AHPs).²¹

Four studies^{22,24,27–28} took place in a hospital setting, four studies^{21,23,26,29} in General Practice or community settings, and two studies^{20,25} included both settings. All but one²⁴ of the studies were conducted only in the UK. The characteristics of included studies are summarised in [Table 1](#).

For quality of included studies, all but two^{20,24} of the studies met all the appraisal criteria ([Table 2](#)). Researcher-participant relationships and justification of research design were not explicitly reported in two studies.^{20,24}

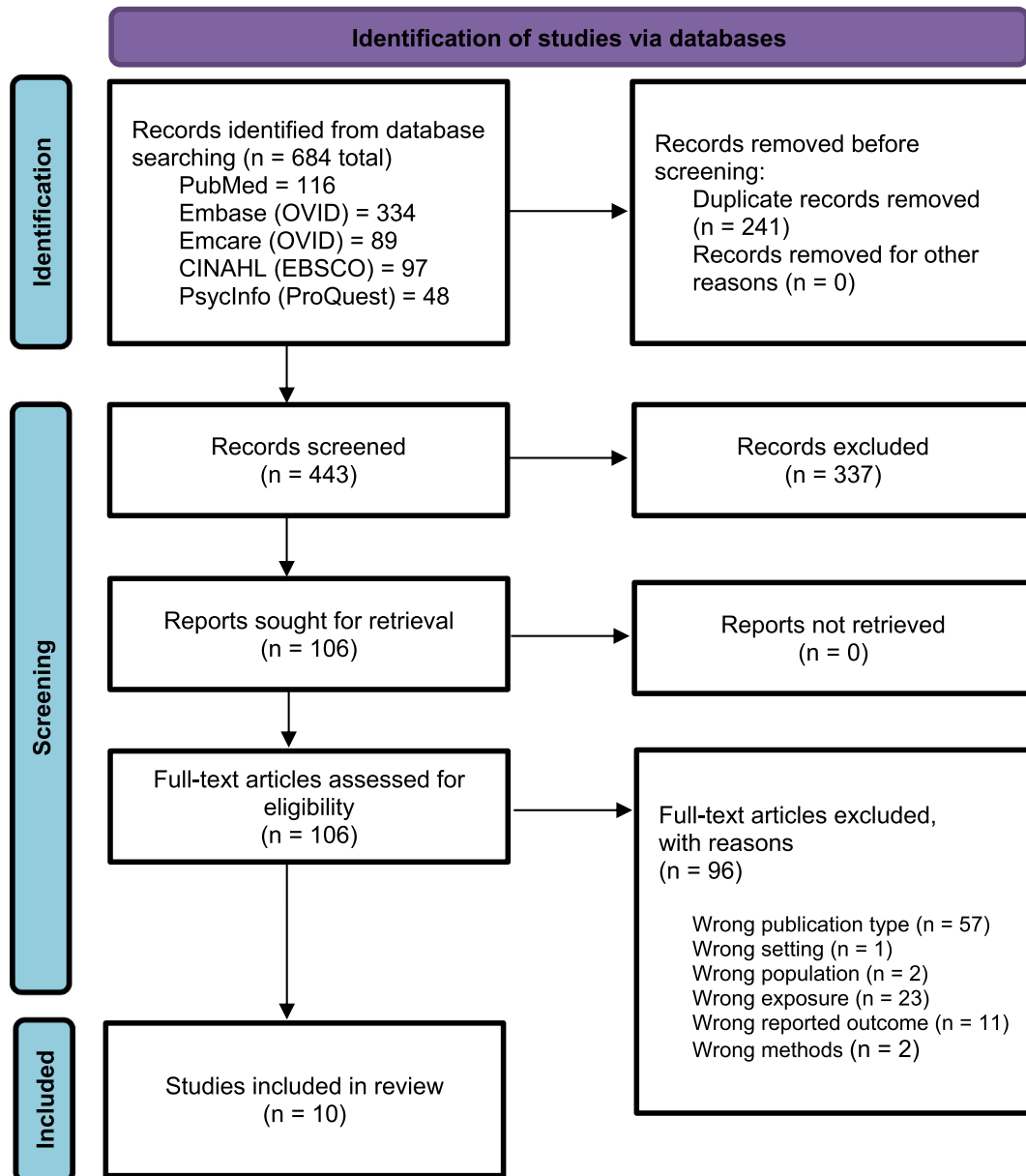


Fig. 1 – PRISMA flow diagram of study selection.

We identified four key themes which impacted the experience of CPR decision-making conversations for patients, families, and HCPs: initiation of conversations; involvement of patients and families; influences on the content of conversations; and conversation outcomes. These themes are described below. The four analytical themes and corresponding descriptive categories are summarised in Appendix 2. Exemplar quotes for each theme are presented in Table 3.

Theme 1: Initiation of conversation

HCPs described who should initiate conversations, and why, when and where these conversations occur.

Who should initiate the conversation?

Different perspectives on who is the most appropriate person to initiate CPR discussions were described within the studies. In four stud-

ies General Practitioners (GPs), hospital-based clinicians, and patients thought GPs were more appropriate than hospital-based clinicians as they had pre-existing relationships with their patients and had developed rapport.^{20,23,27,29} In contrast, a GP in one study thought hospital clinicians were best suited as they had detailed knowledge of specialist conditions and hospital-based interventions.²³ In the single study that explored patients' views, patients reported that they wanted to have the discussion with a HCP that they know and trust.²⁹ They suggested a GP would know them best, whilst a specialist would know their condition best.²⁹

What prompts the conversation?

HCPs described their motivations to initiate CPR decision-making conversations. They wished to understand patients' wishes, ensure dignity at death, and prevent family distress.^{23,25–26} However HCPs were aware that initiation of the conversation could cause patient dis-

Table 1 – Characteristics of included studies.

Authors, publication year	Setting	CPR conversation-related study aims	Participant characteristics	Study design	CPR conversation-related results - Themes
Cohn et al., 2013 ²²	UK, hospital	To explore how DNACPR forms affect discussions between patients and doctors	27 HCPs (13 doctors and 14 nurses)	Qualitative – direct observations and semi-structured interviews	Discussions between patients and doctors
Dzeng, 2019 ²⁴	USA & England, hospitals	To explore how communication practices regarding CPR influence patient understanding and patient autonomy	58 doctors from various specialities (42 from USA, 16 from England)	Qualitative – semi-structured interviews	Use of manipulative communication practices; communication pathologies
Eli et al., 2020 ²⁷	England, hospitals	To examine consultants' experiences of conducting ReSPECT discussions with patients and relatives	15 Consultants from various medical and surgical specialities	Qualitative – semi-structured interviews following ward round observations	Determining when and with whom to conduct a ReSPECT conversation; conducting the ReSPECT conversation; reaching ReSPECT decisions: involving versus informing
Eli et al., 2021 ²⁸	England, hospitals	To understand why, when, and how ReSPECT conversations unfold in practice	31 secondary care clinicians	Qualitative – observations and semi-structured interviews	Planning for the possible and inevitable; responding to organisational, clinical, and patient/relative prompts; engaging with treatment options, patients, and relatives
Holland et al., 2013 ²⁰	England, hospitals and GP practices	To assess current clinical practice for patient involvement in CPR decision-making conversations and perceived barriers to their involvement	24 doctors (11 hospital-based doctors; 13 GPs)	Mixed methods – quantitative survey with qualitative free-text responses	Legal and ethical issues. Barriers to patient involvement in CPR discussions: Lack of capacity, health status, lack of understanding, setting, lack of rapport. Involvement of family members.
Huxley et al., 2021 ²³	England, GP setting	To explore GPs' experiences of ReSPECT discussions and how they initiate discussions	27 GPs	Qualitative – focus groups	ReSPECT is an end of life care document; best done in primary care; an emotional process; conversations driven by cultural understanding of death; difficulties translating across care settings
Low et al., 2014 ²⁵	Scotland, palliative care inpatient and community setting	To explore clinician experiences of DNACPR discussions with patients	11 palliative care clinicians (5 doctors, 4 nurse specialists, 2 staff nurses)	Qualitative – interviews	Factors promoting and inhibiting DNACPR discussions; unpredictability of patient and family responses, emotional nature of the discussion, positive attitudes toward DNACPR discussions
Miller and Dorman, 2014 ²⁶	England, GP practices	To understand GP perceptions on communicating DNACPR decisions to patients dying in the community	10 GPs	Qualitative – semi-structured interviews	Ask or advise; capacity; discussion with patient and family; time; teamwork
Pollock and Wilson, 2015 ²¹	England, GP and community care settings	To investigate how HCPs initiate and experience discussions about CPR	37 HCPs (12 GPs, 23 nurses, 2 allied health professionals)	Qualitative study: Interviews and case studies	Challenges and HCP experiences of CPR discussions
Seamark et al., 2012 ²⁹	England, community	To examine whether hospital admissions for COPD exacerbations were used as opportunities to discuss CPR, and recall experiences of these discussions while in hospital	16 patients with a recent hospitalisation for COPD exacerbation and 5 family members who were their carers	Qualitative – interviews	No patient involvement in CPR discussions in hospital; hospital stay as chaotic and too ill to engage in conversations; patient attitudes; who to talk to

Table 2 – Quality assessment of included studies.

Author (s), year	Was there a clear statement of aims of the research?	Is a qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?
Cohn et al., 2013	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Valuable
Dzeng, 2019	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Valuable
Eli et al., 2020	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Valuable
Eli et al., 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Valuable
Holland et al., 2013	Yes	Yes	Can't tell	Yes	Yes	Can't tell	Yes	Yes	Yes	Valuable
Huxley et al., 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Valuable
Low et al., 2014	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Valuable
Miller and Dorman, 2014	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Valuable
Pollock and Wilson, 2015	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Valuable
Seamark et al., 2012	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Valuable

Table 3 – Illustrative data.

Theme	Illustrative quote
1. Initiation of conversation	
Who should initiate the conversation?	<p><i>In general practice we generally have the benefit of prior knowledge/friendship and rapport with our patients, and it is generally easy to talk about these issues. (GP)²⁰</i></p> <p><i>Definitely because I think it makes... patients feel less vulnerable... when they are in hospital they feel vulnerable plus they don't know us (...) they might have known the GP or have some sort of on-going or community matron or something that's a bit more of a long term relationship. (Secondary care Consultant)²⁷</i></p> <p><i>[GPs] would struggle to have that detailed conversation (GP)²³</i></p>
What prompts the conversation?	<p><i>Normally the triggers are a change... could be a change in the condition... [the patient] might have come back from clinical appointment and been told there's nothing that can be done now... Generally it's a change in something. (HCP)²⁵</i></p> <p><i>He's improved in here, he's now starting to eat... he's progressing so I obviously wanted to explore the issue with him. (Secondary care doctor)²⁸</i></p> <p><i>Trying to get a DNA[CP]R sometimes can be difficult. GPs don't like to have that conversation, which happened, it was one weekend and obviously trying to pre-empt for a weekend situation getting a DNA [CP]R and anticipator[ly medications] in, the GP said 'Oh, I'm not comfortable having that conversation at the moment with the patient'. Well somebody's got to do it. They still didn't do it, this GP still didn't do the form. (Nurse)²¹</i></p> <p><i>The family is very upset and they don't know what's been happening. No doctor has told them anything about it and there are no decisions [being] made about this lady at all. (Secondary care clinician)²⁸</i></p> <p><i>...that's clearly the thing that we're changing the banner of on the top of [the patient record system]. (Secondary care clinician)²⁸</i></p>
When do conversations occur?	<p><i>I think in the context of a post-take ward round where I am time limited I prioritise those patients for whom these conversations are most likely to be required for this admission. (Secondary care Consultant)²⁷</i></p> <p><i>[I]t was only yesterday when I, we had some developments... So at that point yesterday it looked like we need to make a decision, an informed decision with the team, care team, and the patient, and the family. (Secondary care clinician)²⁸</i></p>
Where should conversations occur?	<p><i>I find the usual business ward round very unsatisfactory for discussing CPR status – it's too different from the usual conversation at the bedside about tests, treatments, discharge dates etc. for the patient to adjust. (Hospital clinician)²⁰</i></p> <p><i>...this is quite a serious and significant discussion that should not take place in a very busy, busy place. (Secondary care Consultant)²⁷</i></p> <p><i>We were whizzed straight into the Medical Emergency or surgical place... I couldn't tell you. (Patient)²⁹</i></p> <p><i>Well they assess you and they take you on the ward and then they do all the necessary, you know. I can't actually remember what they did to be honest. (Patient)²⁹</i></p>
2. Involvement of patients and families	
Patient involvement	<p><i>I wouldn't necessarily want to discuss it because I feel like it's tempting fate, but it's a subject I would prefer not to have to think about greatly. (Patient)²⁹</i></p> <p><i>I've always had the view that [the doctors] know best, and that's it... If they thought it was for the best, then let them get on with it. (Patient)²⁹</i></p> <p><i>It wasn't discussed and I would have liked to have known more about resuscitation and the ventilation side of it so that I could understand what it was all about. (Patient)²⁹</i></p> <p><i>Ummh, well yes they should be discussed. I mean it doesn't matter what age you are, it could happen to anybody at any time. (Patient)²⁹</i></p> <p><i>A lot of patients simply 'don't get it.' (Hospital-based clinician)²⁰</i></p> <p><i>He was one of these sort of, of a generation, very private people, who didn't want to discuss, and when you went there he'd change the subject, wouldn't go there, and I couldn't get him to open up. (GP)²⁶</i></p>
Family involvement	<p><i>The patient may feel they are a burden and opt for non-resuscitation for the sake of their family. The family may actually try to influence the patient to choose not to be resuscitated for their own financial benefit. If the family has genuinely helped with the decision, and resuscitation is not done and the patient dies, some guilt over the decision may cause distress to the family, even though the decision was correct clinically. (GP)²⁰</i></p> <p><i>I try to explain to [the family] that by keeping them alive, you are, you are, you are prolonging their agony. (...) I try to avoid confrontation with them (...) But sometimes we have to, when I can see clearly that there is going to be harm, then I have to. (Secondary care Consultant)²⁷</i></p> <p><i>Generally once you've had that discussion and you've reached a decision, it can actually be quite, quite a positive relationship going forwards. And families are very, very grateful for that input... They're incredibly grateful for the time that you put in with them. (GP)²³</i></p>

Table 3 (continued)

Theme	Illustrative quote
Management of patients' and families' reactions	<p><i>You can't think that one patient is going to be exactly the same as the other. We are all individuals and I think that applies to every aspect of their care and it applies to this as an aspect of their care as well... There isn't a set way to do it and there isn't a set way the patient is going to react. (Palliative care HCP)²⁵</i></p> <p><i>[P]eople find, 'What if?' challenging... They don't hear the 'What if?' (Secondary care Consultant)²⁷</i></p> <p><i>Sometimes you have relatives who are very emotional, sometimes they think when you say 'not for resuscitation' means you're going to stop all treatment. (Secondary care Consultant)²⁷</i></p> <p><i>I did actually say, you know, explain what it would actually mean and also of course that it didn't, if he didn't have that it wouldn't mean that anything else would be stopping, his care in the home, his... pain relief, his food. (GP)²⁶</i></p>
3. Influences on the content of conversations	
Setting	<p><i>I suppose in just the way that I do, as part of... as part of planning for end of life. So it's not something that I'd bring up out of context and don't think I ever would. So it has to be as part... you know part of the overall planning. (Community-based palliative care HCP)²⁵</i></p> <p><i>[Hospital-based HCPs] might deal with [...] IV, antibiotics, fluids. But they don't properly discuss, like, hospice, or, you know, things, where you want your end of life to be. (GP)²³</i></p>
HCPs' views and context of discussion	<p><i>It feels that overall it's a negative for me, I don't like to upset people, and however you do it's bad news that you're telling people... and so often it's not something that ever actually happens. (Palliative care HCP)²⁵</i></p> <p><i>The patient) was going to undergo an operation and I feel very uncomfortable discussing resuscitation just before the operation (...) if he does not want to be resuscitated, it influences the surgeon to some extent. (Secondary care Consultant)²⁷</i></p> <p><i>So she doesn't want to talk about whether or not she's going to die on the operating table, or whether or not she's going to get her post-op chest infection or a lung embolus or whatever else could happen. But that process makes us talk about it at that point in time. (...) as soon as you mention that sentence about what would you like to do and if things were taking a turn for the worse (...) she's switched, she's completely switched off. (Secondary care Consultant)²⁷</i></p>
HCPs' emotions	<p><i>Worrying about causing patient distress I think... knowing that it's going to be a difficult and upsetting conversation for them. And I think not liking to upset people. Not liking to have to bring up difficult topics of conversation for them. (Palliative care HCP)²⁵</i></p> <p><i>If I am being completely honest there have been times where people have given cues to that and I've not taken them up on that and probably purposely. I think that is something that every practitioner has probably done at some point because I think sometimes you just can't go there at that particular time. I don't know if that is a right thing or a wrong thing or a bad thing or a good thing but I think sometimes there's an element of self-preservation. (Palliative care HCP)²⁵</i></p>
Uncertainty of prognosis	<p><i>In the end he, it did all fit rather neatly because he did ask me outright what his likely prognosis was and I was able to say I thought weeks to months because he had definitely declined you know so visibly in front of me over the time I'd been going in. And then I could, it gave me an opening to talk about how sort of weak he'd become and how fail he'd become and how you know it would be very unlikely that any attempts at CPR... would be successful. (GP)²⁶</i></p> <p><i>It involves asking them if they've... thought it about before and if they have any thoughts on it. It's just a case of asking them quite openly. By doing that, you also gauge what they understand. That helps you to gauge what they want you to do not just in terms of resuscitation... but in their general treatment. (Junior doctor in oncology)²⁴</i></p> <p><i>So you start off by, by getting the patient to, to give their thoughts on what they would or wouldn't like. And that allows you to, to guide the final decision... You do it together. (Secondary care Consultant)²⁷</i></p> <p><i>Oh well, I should be just asking him what he wants to do but I think inevitably-one does... I think I have been, possibly, a little bit biased towards suggesting that they do consider DNAR status. (GP)²⁶</i></p> <p><i>Yes, I think if you genuinely feel that it would be completely futile and that you would only be prolonging an unpleasant death then yes, you do, you do tend to push the discussion in one way or another. (Secondary care Consultant)²⁷</i></p> <p><i>What do you want [paramedics] to do? Do you want them to push your husband away and assault you? Or do you want them to check that your heart has stopped? And then put an arm around your husband and make him a cup of tea? (GP)²³</i></p>
4. Conversation outcomes	
Impact on emotions	<p><i>If I upset a patient it's always kind of hard. Here we do have difficult conversations and sometimes they do distress... and you have to take a deep breath and go have a cup of tea. (Palliative care HCP)²⁵</i></p> <p><i>I think afterwards it kind of brought home the reality of what [the patient] was facing. (Palliative care HCP)²⁵</i></p> <p><i>I think for [the family member] it was quite a relief to have a plan of what she would do and for [the patient] he was quite set that he didn't want active treatment for a lot of things so I think it reassured him that things inappropriate wouldn't happen. (Palliative care HCP)²⁵</i></p>

(continued on next page)

Table 3 (continued)

Theme	Illustrative quote
	<i>And certainly not an easy decision for families because they then feel, they feel they're signing a death warrant, and, which of course it's not, but that is the, that's how they feel sometimes. . . (GP)²⁶</i>
	<i>You don't go in there as a disembodied brain, you go in there as a person with emotions and other people's emotions affect yours. . . You do sometimes have to stand in the treatment room and have a wee snuffle to yourself. Cause you've just told somebody that if a bad thing happens to them that we're not going to do anything about it. . . that affects you, and you do often cry. (Palliative care HCP)²⁵</i>
	<i>So I actually feel that it is a good thing to have done. And I think it's an element of my job that I am able to do and I'm not happy to do, but I know it's important and it gives me a satisfaction to have done it. (Palliative care HCP)²⁵</i>
Disagreement with patient and family	<i>And again that's one which is probably barn door obvious to the doctor but if the patient isn't accepting [DNACPR decision] we have to let her have her way really don't you. . . I suppose? (GP)²⁶</i>
	<i>So as a doctor, it's my duty to respect my patient decision. Even if she comes to say to me she will like the full treatment, she wants the CPR, it's my duty, I'm duty-bound. (Secondary care clinician)²⁸</i>
Incomplete conversations	<i>I had one chap who, who we'd started the conversation about resuscitation, the cues were there, so we started the conversation but he got quite upset about it. And he decided he wanted resuscitating. That's his choice. I mean, obviously, from a medical point of view, it would be completely futile. So, we left it, and I said we would come back to it another time when he was ready to sort of think about it again.. (21)</i>
	<i>So if you can get some background knowledge, and if they are so in shock that they can't take anything in then it's okay to come back another time. (Secondary care Consultant)²⁷</i>
	<i>It often happens over a, over a couple of steps. But, and I'd be happy to complete that process if the patient had been receptive to that (. . .) I didn't feel as if I was going to be welcomed to take that further with her myself. (Secondary care clinician)²⁸</i>

tress, so they tried to ensure that patients were emotionally and mentally prepared prior to conducting the conversation.^{23,27}

HCPs reported deterioration, poor prognoses, and transition to end-of-life or palliative care as clinical prompts to identify the need for the CPR conversation.^{20–21,23,25–28} While HCPs in seven studies described negative changes in clinical condition as triggers for the discussion, in one study a secondary care clinician identified an improvement in condition as a prompt to review a previous Do Not Attempt CPR (DNACPR) decision with the patient.²⁸ Patients sometimes directly initiated the discussion by bringing up the topic of CPR^{23,25–26,28}; one study noted relatives initiated the discussion by asking for information about the patient's care.²⁸ Nurses reported identifying when discussions were needed and prompting doctors to initiate conversations, although they reported difficulty getting doctors to do so.²¹

One study identified organisational prompts such as hospital policies, ward initiatives, and reminders on electronic patient records to consider conducting CPR decision-making conversations.²⁸

When do conversations occur?

Due to time constraints doctors prioritised which patients were most in need of CPR discussions.²⁷ They prioritised patients based on their predicted likelihood of "sudden severe deterioration" or cardiac arrest in the near future.²⁷ Discussions in the community occurred during GP appointments, home visits, and nursing home visits.^{23,25–26} In the hospital these conversations occurred after ward rounds and multidisciplinary team meetings and during visiting hours with relatives present.^{27–28}

Where should conversations occur?

In four studies doctors and patients suggested GP practices as the ideal location for CPR discussions, as they had the time, space, and privacy to conduct these discussions that hospital wards did not.^{20,23,27,29} Patients described the hospital as a chaotic environ-

ment where they felt rushed, overwhelmed, and unable to participate in CPR discussions.²⁹

Theme 2: Involvement of patients and families

HCPs and patients described different perspectives on involvement of patients and families in conversations.

Patient involvement

HCPs and patients reported different perspectives on patient involvement. Doctors expressed concern that having the conversation with patients could cause distress.²⁰ They described choosing not to involve patients who they thought would not require CPR, or who would not benefit from CPR, or whom they suspected would become distressed.^{20,22} One doctor referred to this as "being kind."²⁰ They also described not involving patients whom they assumed would not understand the concept of CPR.²⁰ GPs in one study described the difficulties they experienced involving patients who did not want to discuss CPR.²⁶

In the single study exploring patients' experiences, patients reported they had not been involved in discussions.²⁹ Three patients thought they should have been involved in their CPR decision and one patient said that they wanted to be involved even if it would have been difficult.²⁹ Another patient acknowledged that whilst these discussions are difficult, it was "very important" for HCPs to bring up the topic.²⁹

Not all patients wanted to have the discussion, reflecting HCPs' concerns about a requirement to always discuss CPR with the patient. Some patients felt it would tempt fate to think about or discuss CPR.²⁹ One patient said they did not need to be involved as "the doctor knows best."²⁹

Family involvement

Doctors identified benefits of involving families, reporting that family members provided information to help them understand patients'

wishes when patients lacked capacity.²⁷ However doctors and patients held different views about family involvement when the patient had capacity. While patients described a desire for family members to be involved to provide support and understand their wishes,²⁹ doctors viewed families as a potential source of conflict.^{20,23,27} They referred to familial decision-making, where families influenced patients' wishes,^{20,27} and this led to conflict with families when they disagreed with the doctors' decision.^{27–28}

Management of patients and families' reactions

Patients' and families' reactions to CPR discussions were viewed by HCPs as unpredictable due to individual life experiences, beliefs, and cultures,²³ so HCPs felt there was no standardised way to discuss CPR with them.²⁵ Secondary care Consultants reported that patients and families often misunderstood how CPR decisions informed care, such as assuming a DNACPR decision meant all active treatment would automatically be stopped or the initiation of a CPR discussion meant CPR was required imminently.²⁷ GPs and hospital-based doctors often held a series of conversations to aid understanding^{23,27}; however this required time which they felt they lacked.^{26–27}

Theme 3: Influences on the content of conversations

HCPs and patients described how setting, context, HCPs' attitudes and emotions, and uncertainty of prognosis influenced the content of conversations.

Setting

Hospital-based and community-based clinicians differed in the content of their conversations. HCPs reported that hospital-based clinicians focused on hospital-based specialist interventions such as intensive care admission and ventilation, while community-based clinicians focused on plans for chronic conditions, hospitalisation, hospice, and death.²³

HCPs' views and context of discussion

The HCP's attitude towards CPR discussions can shape the content of discussion and even the decision to initiate a conversation. In one study a palliative care HCP questioned the value of discussing CPR with healthy patients and viewed it as unnecessarily upsetting.²⁵ While HCPs reported incorporating discussions about CPR into wider conversations regarding poor prognoses, escalation plans, or end-of-life planning,^{23,25,28} in one study secondary-care doctors reported limiting conversations to CPR to avoid overwhelming patients.²⁸

In another study hospital-based Consultants felt it was inappropriate to discuss CPR with patients who were pursuing active treatment or potentially curative surgery, because they thought that CPR conversations de-motivated both patients and the clinical team.²⁷ These HCPs suggested discussions should not occur prior to potentially curative interventions.²⁷

In contrast, patients felt that the time they were acutely unwell, they were too ill or distressed to participate in or recall these conversations.²⁹ This view was also expressed by GPs in a study about patients dying in the community.²⁶

HCPs' emotions

HCPs reported struggling with their own emotions which impacted their ability and desire to initiate discussions.²⁵ They feared upsetting patients and families²⁵ and losing trust.²⁷ Previous negative experiences of CPR discussions had an impact on their confidence.²⁷ They

described the anxiety these conversations caused them^{25–26} and reported avoiding the topic to protect themselves emotionally.²⁵

Uncertainty of prognosis

Doctors found it difficult to manage uncertainty when they were unsure about the trajectory of illness and it was difficult or distressing for patients to imagine hypothetical future scenarios.^{26–27} Doctors found it easier to discuss CPR with patients who were accepting of their prognosis or had a clear illness trajectory.²³

The degree to which doctors considered patients' wishes was influenced by their level of certainty about patients' prognoses.²⁷ Studies described how HCPs used an open or closed approach to speak to patients and families and consider patients' wishes. With the open approach, HCPs engaged patients and families in patient-centred conversations and invited patients to share their wishes.^{27–28} HCPs reported using the closed approach when there was a clear illness trajectory.²⁷ They entered the conversation having decided the patient would not receive CPR and used the conversation to persuade patients and families of their decision.^{21,23–24,26–28}

Theme 4: Conversation outcomes

Several outcomes of conversations were described in the papers. HCPs recorded conversation outcomes and CPR recommendations on paper forms²¹ and in electronic patient records.²⁸

Impact on emotions

Patients, families, and HCPs experienced strong emotions and distress after CPR conversations. In five studies HCPs described patients becoming distressed by CPR discussions.^{21,23,25,27–28} However in one study palliative care staff reported that patients felt relieved to have a plan and had a greater acceptance of their prognosis after discussions.²⁵

In four studies HCPs perceived that family members experienced distress and felt guilty after being involved in discussions.^{20,23,26–27} However in other studies HCPs felt that families were grateful to be involved.^{23,25}

CPR conversations also have an emotional impact on the HCP. While two studies reported that HCPs were unaffected by the conversations,^{23,25} in other studies HCPs reported feeling emotionally drained and anxious afterwards.^{25,27} If a conversation went well HCPs felt rewarded for their efforts; if it went poorly they found it upsetting.^{23,25} Having an established relationship with the patient made it more likely that the conversation would have an emotional impact on the HCP.^{23,25} GPs and palliative care HCPs reported finding value in this part of their clinical role.^{23,25}

Disagreement with patient and family

Three studies described the outcome of the conversation as a disagreement with patients and families.^{20,24,28} Where doctors recommended against CPR attempts and patients and families did not agree with the clinical recommendation, the disagreement was followed by the doctor offering or the family requesting a second opinion.²⁸ In three studies HCPs described conceding to the patient's wishes even when it conflicted with their clinical recommendation due to the need to respect patient autonomy.^{24,26,28}

Incomplete conversations

One study described instances where conversations were left incomplete and CPR status left undecided.²⁸ This occurred when patients

became distressed and needed time to process the topic,^{23,28} or due to disagreements with patients and families and a second opinion was sought.²⁸

Ethical conflict

Running through all the themes is the thread of ethical conflict facing HCPs between respecting patient autonomy and protecting them from harm. Healthcare professionals wanted to ensure patients were emotionally prepared for the conversation,^{23,27} to minimise the harm that may have been caused by discussing CPR with them and therefore respecting their autonomy. Healthcare professionals described challenges involving patients and families^{20,27} and communicating with them openly^{23–24,26–27} whilst protecting patients and families from distress and protecting patients' best interests. They also struggled to balance respect for patients' and families' wishes with their duty to ensure outcomes of the conversation protected patients from harm.^{20,24,28} Healthcare professionals experienced this underlying ethical tension in different ways throughout the process of managing the CPR discussion with patients and families.

Discussion

This review identified studies which describe experiences of CPR decision-making conversations in the UK. Once HCPs recognise the prompt for the conversation, they balance respecting patient autonomy with protecting them from harm in their decisions to involve patients and families. Setting, context, HCPs' views and emotions, and uncertainty of prognosis influence the content of conversations. Conversations raise emotions for patients, families, and HCPs, and may result in disagreement or incomplete conversations.

Our review identified that there is inconsistency in how CPR decision-making conversations occur, in patients' desire to be involved, and between patients' and HCPs' views on the role of families in these conversations. These conversations are complex as they are influenced by context, people, attitudes, emotions, and ethical considerations. Our findings are reflective of research in other difficult conversations. In advance care planning (ACP) and end-of-life (EOL) conversations, patients vary in their desire to be involved,^{30–31} HCPs demonstrate inconsistent attitudes towards discussions,^{32–33} and family members provide support to patients but think HCPs "disengage" from family involvement.³⁰

Our review identified as an overarching theme the ethical challenges experienced by HCPs in CPR decision-making conversations. HCPs' described difficulties throughout the process balancing respect for patient autonomy with their obligation to protect patients from harm: when considering patient and family involvement and their wishes about CPR; communicating CPR recommendations; and managing disagreements. A review of international literature on the decision-making process of DNACPR orders described the ethical challenges clinicians experience in the decision-making process.¹¹ Struggles with ethical dilemmas can cause moral distress,³⁴ which can lead to staff burnout and adverse outcomes for patients and healthcare organisations.^{35–36} Understanding the HCP experience of CPR discussions and improving their understanding of the ethical implications of their CPR recommendations may help reduce moral distress.

Most studies in the review were in agreement that CPR discussions caused emotional distress to patients, and HCPs reported not involving patients and families to protect them from distress. Clin-

icians have legal and professional obligations to involve patients and families in decisions about CPR even when potentially upsetting,^{1,4–5} unless they think involvement will be so distressing it might cause physical or psychological harm.⁴ If the clinician decides patient or family involvement is inappropriate, they must provide evidence of this decision.⁴ Clinicians' desire to protect patients and families from potentially distressing conversations is reflected in the wider literature about death and dying.³⁷ HCPs who avoided difficult conversations about death and dying perceived death as a failure of healthcare and felt uncomfortable initiating these conversations with patients and families.³⁷ In a review on ACP and EOL discussions, patients and their carers reported that having HCPs who encouraged discussions about dying helped them accept their prognosis.³⁰

Our review found a significant gap in the literature on experiences of CPR decision-making conversations from the perspective of patients and families. Only one study included patients,²⁹ and there were no studies with family members as participants. No studies included patients' experiences of actual conversations about CPR with health care professionals. This may reflect difficulties in participant recall or study recruitment, as patients may have been too ill or distressed by their clinical condition to recall CPR discussions or participate in studies.²² Understanding patient experience is crucial to improve quality of care.^{38–39} Future research in this area should focus on understanding the experience of patients and families and consider how to best include their perspectives.

A previous integrative review on CPR discussions in the UK supports our findings regarding family member support and setting.⁴⁰ Patients wanted their families to be involved in CPR discussions and preferred conversations in GP surgeries as they considered hospital wards "too public."⁴⁰ The review included qualitative and qualitative studies published between 2000 and 2016. Much has changed in clinical practice and policy regarding CPR discussions since the review was published^{41–42} particularly after the 2014 landmark legal judgment of *R (Tracey) v Cambridge University Hospitals NHS Foundation Trust & Ors* regarding patient involvement in CPR decisions⁴³ and the subsequent Joint Statement.⁴ In 2014 the Resuscitation Council UK facilitated the creation of the Recommended Summary Plan for Emergency Care and Treatment (ReSPECT), a national model which encourages patient and family involvement in CPR conversations.¹⁰ Our review offers further insight in the area as it examines current practice and focuses on qualitative literature to present an in-depth picture of the current process of CPR conversations, in particular identifying barriers to patient and family involvement.

The review revealed conflicting attitudes between hospital-based and community-based providers about initiation and content of the discussion. Collaborative working at systems level can lead to improved care delivery and outcomes.⁴⁴ As healthcare systems are encouraged to collaborate to deliver care between settings,⁴⁵ it is important that future work explores the relationship between CPR discussions conducted across different settings.

In the review experiences of HCPs were primarily presented from the perspective of doctors; only three studies included other HCPs such as nurses and AHPs,^{21–22,25} and only one study described the role of nurses and AHPs in providing support during CPR discussions.²¹ As nurses and AHPs are encouraged to shape patient care and advocate for patients' best interests,^{46–47} future research is needed to understand the experiences of these HCPs in CPR discussions.

This review identifies how the quality of CPR decision-making conversations requires improvement. Our findings suggest that

patients and families are not adequately involved, informed, or supported, and HCPs could benefit from additional training and support. There is scope for educators, HCPs, organisations, and policy-makers to improve the quality of this process. HCPs may benefit from training and pastoral support in conducting CPR discussions. Patients and families may benefit from education about CPR, personalised explanations about their CPR recommendations, and emotional support after discussions.

Strengths and limitations

Strengths of our review include the use of a systematic approach to identify studies in the area and the involvement of a specialist health librarian who developed an effective search strategy and conducted database searches. The review was conducted rigorously following a pre-registered protocol.

Limitations include lack of studies describing the experiences of CPR conversations from the perspective of patients and their families. Studies of mixed quality were included in the review. Searching for UK countries may have missed relevant studies where UK countries were not mentioned as part of the location of the study. Our review may have missed findings from studies where CPR was discussed within other planning conversations but CPR was not addressed specifically. The research question was deliberately specific to UK practice about CPR decision-making conversations to ensure an appropriate context for any recommendations to inform national practice about CPR discussions.

Future research

Future research should include the experiences of patients and families, and HCPs other than doctors to understand the multiple perspectives that feed into these complex conversations.

Conclusions

Experiences of CPR decision-making conversations in the UK are complex and are influenced by context, people, attitudes, and emotions. There is inconsistency in how these conversations occur. CPR discussions raise ethical challenges for HCPs. Further research is required to understand patient and family perspectives of these conversations. HCPs need training and pastoral support in conducting CPR discussions, and patients and families need education on CPR recommendations and emotional support after discussions.

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CRedit authorship contribution statement

Michelle Hartanto: Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Writing – review & editing, Project administration. **Gavin Moore:** Methodology, Formal analysis, Investigation, Resources, Data curation, Writing – review & editing. **Timothy Robbins:** Methodology, Writing – review & editing, Supervision. **Risheka Suthantirakumar:** Data curation, Writing – Review

& Editing. **Anne-Marie Slowther:** Methodology, Validation, Formal analysis, Investigation, Writing – review & editing, Supervision.

Conflicts of Interest

Michelle Hartanto is a Resuscitation Practitioner and Chair of the ReSPECT Shared Decision-Making Council at UHCW. Anne-Marie Slowther is currently the Principal Investigator on a research study evaluating ReSPECT in the community and has done previous work on DNACPR and ReSPECT in acute NHS Trusts, all funded by the National Institute for Health Research (NIHR). No honorarium, grant or other form of payment was given to anyone to produce the manuscript.

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Appendix A. Search strategy

PubMed

#1	resuscitat*[Title/Abstract] (71,543)
#2	CPR[Title/Abstract] (14,192)
#3	“Cardiopulmonary Resuscitation”[Mesh] (20,520)
#4	“Resuscitation”[Mesh] (103,784)
#5	#1 OR #2 OR #3 OR #4 (143,466)
#6	“resuscitation order”[Title/Abstract] (313)
#7	“do not resuscitate”[Title/Abstract] (2,386)
#8	“do not attempt resuscitation”[Title/Abstract] (257)
#9	“do not attempt cardiopulmonary resuscitation”[Title/Abstract] (89)
#10	DNR[Title/Abstract] (2,936)
#11	DNAR[Title/Abstract] (251)
#12	DNACPR[Title/Abstract] (104)
#13	“code status” [Title/Abstract] (483)
#14	“no code” [Title/Abstract] (150)
#15	“full code” [Title/Abstract] (167)
#16	“Resuscitation Orders”[Mesh] (4,086)
#17	#6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 (7,500)
#18	#5 OR #17 (145,361)
#19	conversation*[Title/Abstract] (23,672)
#20	discuss*[Title/Abstract] (1,682,412)
#21	consult*[Title/Abstract] (144,462)
#22	talk*[Title/Abstract] (55,524)
#23	communicat*[Title/Abstract] (349,696)
#24	#19 OR #20 OR #21 OR #22 OR #23 (2,150,939)
#25	attitude*[Title/Abstract] (172,490)
#26	perception*[Title/Abstract] (298,924)
#27	view*[Title/Abstract] (514,429)

#28	perspective*[Title/Abstract] (381,270)
#29	experience*[Title/Abstract] (1,214,101)
#30	belief*[Title/Abstract] (94,048)
#31	concern*[Title/Abstract] (691,536)
#32	thought*[Title/Abstract] (290,824)
#33	opinion*[Title/Abstract] (115,800)
#34	feel*[Title/Abstract] (107,395)
#35	sentiment*[Title/Abstract] (3,328)
#36	#25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 (3,240,814)
#37	"United Kingdom"[Title/Abstract] (45,222)
#38	UK[Title/Abstract] (124,194)
#39	Britain[Title/Abstract] (19,137)
#40	British[Title/Abstract] (53,379)
#41	England[Title/Abstract] (57,724)
#42	English[Title/Abstract] (121,210)
#43	Scotland[Title/Abstract] (18,215)
#44	Scottish[Title/Abstract] (9,867)
#45	Wales[Title/Abstract] (25,972)
#46	Welsh[Title/Abstract] (2,299)
#47	"Northern Ireland"[Title/Abstract] (5,488)
#48	"Northern Irish"[Title/Abstract] (239)
#49	"United Kingdom"[Mesh] (382,388)
#50	"England"[Mesh] (111,373)
#51	"Scotland"[Mesh] (25,754)
#52	"Wales"[Mesh] (14,819)
#53	"Northern Ireland"[Mesh] (5,120)
#54	#37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR #50 OR #51 OR #52 OR #53 (653,896)
#55	#18 AND #24 (11,429)
#56	#36 AND #55 (3,339)
#57	#54 AND #56 (251)
#58	#57 2012/1/1- (116)

Embase (OVID)

1	resuscitat*.ti,ab. (97,424)
2	CPR.ti,ab. (24,410)
3	exp resuscitation/ (120,585)
4	or/1-3 (161,615)
5	resuscitation order*.ti,ab. (330)
6	do-not-resuscitate.ti,ab. (3,146)
7	do-not-attempt-resuscitation.ti,ab. (411)
8	do-not-attempt-cardiopulmonary-resuscitation.ti,ab. (138)
9	DNR.ti,ab. (4,650)
10	DNAR.ti,ab. (409)
11	DNACPR.ti,ab. (230)
12	code status.ti,ab. (1,159)
13	no code.ti,ab. (211)
14	full code.ti,ab. (415)
15	exp "do not resuscitate order"/ (1,190)
16	or/5-15 (8,468)
17	4 OR 16 (165,302)
18	conversation*.ti,ab. (31,291)

19	discuss*.ti,ab. (2,143,168)
20	consult*.ti,ab. (247,581)
21	talk*.ti,ab. (80,310)
22	communicat*.ti,ab. (434,216)
23	exp conversation/ (15,183)
24	or/18-23 (2,776,962)
25	attitude*.ti,ab. (208,706)
26	perception*.ti,ab. (349,664)
27	view*.ti,ab. (639,035)
28	perspective*.ti,ab. (454,835)
29	experience*.ti,ab. (1,683,319)
30	belief*.ti,ab. (113,636)
31	concern*.ti,ab. (906,984)
32	thought*.ti,ab. (383,804)
33	opinion*.ti,ab. (152,465)
34	feel*.ti,ab. (156,985)
35	sentiment*.ti,ab. (3,670)
36	or/25-35 (4,206,294)
37	United Kingdom.ti,ab. (54,762)
38	UK.ti,ab. (255,453)
39	Britain.ti,ab. (23,324)
40	British.ti,ab. (115,328)
41	England.ti,ab. (71,736)
42	English.ti,ab. (146,794)
43	Scotland.ti,ab. (22,749)
44	Scottish.ti,ab. (13,357)
45	Wales.ti,ab. (31,718)
46	Welsh.ti,ab. (3,115)
47	Northern Ireland.ti,ab. (7,091)
48	Northern Irish.ti,ab. (318)
49	exp United Kingdom/ (439,586)
50	exp England/ (30,840)
51	exp Scotland/ (6,488)
52	exp Wales/ (4,809)
53	exp Northern Ireland/ (1,974)
54	or/37-53 (872,637)
55	17 AND 24 (19,396)
56	36 AND 55 (5,999)
57	54 AND 56 (482)
58	57 2012/1/1- (334)

Emcare (OVID)

1	resuscitat*.ti,ab. (35,036)
2	CPR.ti,ab. (7,672)
3	exp resuscitation/ (43,925)
4	or/1-3 (54,568)
5	resuscitation order*.ti,ab. (152)
6	do-not-resuscitate.ti,ab. (1,386)
7	do-not-attempt-resuscitation.ti,ab. (196)
8	do-not-attempt-cardiopulmonary-resuscitation.ti,ab. (60)
9	DNR.ti,ab. (1,049)
10	DNAR.ti,ab. (128)
11	DNACPR.ti,ab. (65)
12	code status.ti,ab. (316)

13	no code.ti.ab. (39)	S5	S1 OR S2 OR S3 OR S4 (65,752)
14	full code.ti.ab. (120)	S6	TI("resuscitation order") OR AB("resuscitation order") (135)
15	exp "do not resuscitate order"/ (495)	S7	TI("do not resuscitate") OR AB("do not resuscitate") (1,435)
16	or/5-15 (2,542)	S8	TI("do not attempt resuscitation") OR AB("do not attempt resuscitation") (173)
17	4 OR 16 (55,161)	S9	TI("do not attempt cardiopulmonary resuscitation") OR AB("do not attempt cardiopulmonary resuscitation") (83)
18	conversation*.ti.ab. (17,504)	S10	TI(DNR) OR AB(DNR) (1,115)
19	discuss*.ti.ab. (532,850)	S11	TI(DNAR) OR AB(DNAR) (109)
20	consult*.ti.ab. (71,681)	S12	TI(DNACPR) OR AB(DNAR) (113)
21	talk*.ti.ab. (23,632)	S13	TI("code status") OR AB("code status") (339)
22	communicat*.ti.ab. (160,009)	S14	TI("no code") OR AB("no code") (86)
23	exp conversation/ (13,583)	S15	TI("full code") OR AB("full code") (96)
24	or/18-23 (743,853)	S16	(MH "Resuscitation Orders") (3,197)
25	attitude*.ti.ab. (107,260)	S17	S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 (4,298)
26	perception*.ti.ab. (168,750)	S18	S5 OR S17 (66,109)
27	view*.ti.ab. (179,037)	S19	TI(conversation*) OR AB(conversation*) (18,630)
28	perspective*.ti.ab. (175,587)	S20	TI(discuss*) OR AB(discuss*) (542,616)
29	experience*.ti.ab. (548,426)	S21	TI(consult*) OR AB(consult*) (68,498)
30	belief*.ti.ab. (62,632)	S22	TI(talk*) OR AB(talk*) (35,068)
31	concern*.ti.ab. (259,310)	S23	TI(communicat*) OR AB(communicat*) (141,079)
32	thought*.ti.ab. (78,937)	S24	(MH "Conversation") (4,813)
33	opinion*.ti.ab. (45,105)	S25	(MH "Discussion") (2,845)
34	feel*.ti.ab. (69,660)	S26	S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 (747,284)
35	sentiment*.ti.ab. (2,062)	S27	TI(attitude*) OR AB(attitude*) (89,994)
36	or/25-35 (1,294,585)	S28	TI(perception*) OR AB(perception*) (138,812)
37	United Kingdom.ti.ab. (19,995)	S29	TI(view*) OR AB(view*) (145,346)
38	UK.ti.ab. (79,300)	S30	TI(perspective*) OR AB(perspective*) (154,033)
39	Britain.ti.ab. (5,399)	S31	TI(experience*) OR AB(experience*) (474,889)
40	British.ti.ab. (37,935)	S32	TI(belief*) OR AB(belief*) (52,717)
41	England.ti.ab. (29,535)	S33	TI(concern*) OR AB(concern*) (210,411)
42	English.ti.ab. (66,133)	S34	TI(thought*) OR AB(thought*) (57,441)
43	Scotland.ti.ab. (7,946)	S35	TI(opinion*) OR AB(opinion*) (41,414)
44	Scottish.ti.ab. (4,373)	S36	TI(feel*) OR AB(feel*) (64,182)
45	Wales.ti.ab. (12,252)	S37	TI(sentiment*) OR AB(sentiment*) (2,598)
46	Welsh.ti.ab. (895)	S38	S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 (1,099,286)
47	Northern Ireland.ti.ab. (2,691)	S39	TI("United Kingdom") OR AB("United Kingdom") (18,657)
48	Northern Irish.ti.ab. (144)	S40	TI(UK) OR AB(UK) (64,946)
49	exp United Kingdom/ (139,620)	S41	TI(Britain) OR AB(Britain) (39,349)
50	exp England/ (10,739)	S42	TI(British) OR AB(British) (29,624)
51	exp Scotland/ (2,097)	S43	TI(England) OR AB(England) (39,259)
52	exp Wales/ (1,638)	S44	TI(English) OR AB(English) (56,904)
53	exp Northern Ireland/ (690)	S45	TI(Scotland) OR AB(Scotland) (10,396)
54	or/37-53 (284,505)	S46	TI(Scottish) OR AB(Scottish) (5,452)
55	17 AND 24 (6,069)	S47	TI(Wales) OR AB(Wales) (15,564)
56	36 AND 55 (1,857)	S48	TI(Welsh) OR AB(Welsh) (1,543)
57	54 AND 56 (146)	S49	TI("Northern Ireland") OR AB("Northern Ireland") (3,499)
58	57 2012/1/1- (89)	S50	TI("Northern Irish") OR AB("Northern Irish") (101)
		S51	(MH "United Kingdom+") (333,188)
		S52	(MH "England") (65,901)
		S53	(MH "Scotland") (18,130)

CINAHL (EBSCO)

S1	TI(resuscitat*) OR AB(resuscitat*) (28,081)
S2	TI(CPR) OR AB(CPR) (7,125)
S3	(MH "Resuscitation, Cardiopulmonary+") (16,500)
S4	(MH "Resuscitation+") (51,766)

S54	(MH "Wales") (9,392)
S55	(MH "Northern Ireland") (4,100)
S56	S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 (468,180)
S57	S18 AND S26 (6,543)
S58	S38 AND S57 (1,821)
S59	S56 AND S58 (176)
S60	S59 2012/1/1- (97)

PsycInfo(ProQuest)

1	TI,AB(resuscitat*) (2,207)
2	TI,AB(CPR) (1,027)
3	MAINSUBJECT.EXACT.EXPLODE("CPR") (416)
4	1 OR 2 OR 3 (2,937)
5	TI,AB("resuscitation order*") (38)
6	TI,AB("do not resuscitate") (404)
7	TI,AB("do not attempt resuscitation") (40)
8	TI,AB("do not attempt cardiopulmonary resuscitation") (11)
9	TI,AB(DNR) (322)
10	TI,AB(DNAR) (16)
11	TI,AB(DNACPR) (2)
12	TI,AB("code status") (99)
13	TI,AB("no code") (21)
14	TI,AB("full code") (40)
15	MAINSUBJECT.EXACT.EXPLODE("Advance Directives") (1,826)
16	5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 (2,275)
17	4 OR 16 (4,634)
18	TI,AB(conversation*) (40,161)
19	TI,AB(discuss*) (925,436)
20	TI,AB(consult*) (50,343)
21	TI,AB(talk*) (44,030)
22	TI,AB(communicat*) (219,572)
23	MAINSUBJECT.EXACT.EXPLODE("Conversation") (10,899)
24	MAINSUBJECT.EXPLODE("Interpersonal Communication") (86,653)
25	18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 (1,212,935)
26	TI,AB(attitude*) (216,638)
27	TI,AB(perception*) (317,879)
28	TI,AB(view*) (310,940)
29	TI,AB(perspective*) (294,976)
30	TI,AB(experience*) (691,800)
31	TI,AB(belief*) (136,057)
32	TI,AB(concern*) (320,311)
33	TI,AB(thought*) (148,419)
34	TI,AB(opinion*) (51,085)
35	TI,AB(feel*) (153,163)
36	TI,AB(sentiment*) (7,928)
37	26 OR 27 OR 28 OR 29 OR 30 OR 31 OR 32 OR 33 OR 34 OR 35 OR 36 (1,876,527)

38	TI,AB("United Kingdom") (11,975)
39	TI,AB(UK) (37,735)
40	TI,AB(Britain) (7,780)
41	TI,AB(British) (23,671)
42	TI,AB(England) (22,879)
43	TI,AB(English) (143,340)
44	TI,AB(Scotland) (4,912)
45	TI,AB(Scottish) (3,136)
46	TI,AB(Wales) (7,582)
47	TI,AB(Welsh) (1,200)
48	TI,AB("Northern Ireland") (2,595)
49	TI,AB("Northern Irish") (265)
50	38 OR 39 OR 40 OR 41 OR 42 OR 43 OR 44 OR 45 OR 46 OR 47 OR 48 OR 49 (239,752)
51	17 AND 25 (1,743)
52	37 AND 51 (942)
53	50 AND 52 (72)
54	53 2012/1/1- (48)

Appendix B. Analytical themes and corresponding descriptive categories

Analytical theme	Corresponding descriptive categories
Initiation of conversation	Who initiates conversations
	HCPs who provide additional support for the discussions
	Conversation prompts identified by HCPs
	Timing of conversations that occur
	Setting of conversations that occur
	Timing may make it difficult for discussions
	Setting may make it difficult for discussions
	How HCPs envision the ideal discussion
	How patients envision the ideal discussion
	Involvement of patients and families
Reasons why HCPs choose not to involve patients in discussions	
Patient perspectives on their involvement	
Patient perspectives on family involvement	
HCP perspectives on family involvement	
Patient-related factors that make it easier to discuss	
Family-related factors that make it easier to discuss	
Family-related factors that make it difficult to discuss	
Perceived misunderstandings from patients and relatives make the conversation difficult	
Individuality of discussion	
Influences on content of the	Types of conversations that occur
	HCP-related factors that make it easier to

(continued)

Analytical theme	Corresponding descriptive categories
conversation	discuss
	HCP-related factors that make it difficult for HCP to discuss
	Patient-related factors that make it difficult for HCP to discuss
	HCP biases
	HCPs' approach to conversations
	HCP strategies to manage conversations
	HCPs considerations of patient wishes and preferences
Conversation outcomes	Reasons why conversations are left incomplete
	Impact of conversation on HCP
	Impact of conversation on the patient
	Impact of conversation on the family
	Role of patient/HCP relationship
	HCPs perceptions of the value of the discussion

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