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Prognostic decision-making about imminent death within multidisciplinary teams: a scoping review

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ABSTRACT

Objective To summarise evidence on how multidisciplinary team (MDTs) make decisions about identification of imminently dying patients.

Design Scoping review.

Setting Any clinical setting providing care for imminently dying patients, excluding studies conducted solely in acute care settings.

Data sources The databases AMED, CINAHL, Embase, MEDLINE, PsychINFO and Web of Science were searched from inception to May 2021.

Included studies presented original study data written in English and reported on the process or content of MDT discussions about identifying imminently dying adult patients.

Results 40 studies were included in the review. Studies were primarily conducted using interviews and qualitative analysis of themes.

MDT members involved in decision-making were usually doctors and nurses. Some decisions focused on professionals recognising that patients were dying, other decisions focused on initiating specific end-of-life care pathways or clarifying care goals. Most decisions provided evidence for a partial collaborative approach, with information-sharing being more common than joint decision-making. Issues with decision-making included disagreement between staff members and the fact that doctors were often regarded as final or sole decision-makers.

Conclusions Prognostic decision-making was often not the main focus of included studies. Based on review findings, research explicitly focusing on MDT prognostication by analysing team discussions is needed. The role of allied and other types of healthcare professionals in prognostication needs further investigation as well. A focus on specialist palliative care settings is also necessary.

Strengths and limitations of this study

- ► The present scoping review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline for Scoping Reviews.
- ► Multiple databases were searched, and a broad search strategy was applied to identify relevant literature.
- ► An inclusive screening approach was adopted to ensure that relevant papers and data were not excluded.
- ► Two reviewers independently screened publications for eligibility and data extraction, with disagreements resolved through consensus in the study team.
- ► The lack of detailed data on the decision-making process yielded discussions within the study team about whether excerpts specifically concerned identification of imminently dying patients and whether the included professionals constituted a multidisciplinary team.

BACKGROUND

The term ‘end-of-life’ is often used to refer to patients who are approaching the last year of life.[1] When patients are within the last days or hours of life, they are more appropriately referred to as ‘imminently dying’.[2 3] Identification of end-of life and imminently dying patients, and more generally estimating patients’ length of survival, can guide clinicians to use relevant care pathways. Studies have shown that patients, their carers and clinicians, all value accurate prognostic information.[4–9] Information on how much time a patient has left to live can help patients and family members to make important decisions, feel prepared for death, prioritise commitments and plan treatment and care in the hospital or community.[10] However, clinicians’ survival estimates are often inaccurate and overoptimistic.[11–14] Despite clinicians’ challenges with estimating accurate length of survival, studies show that a slight improvement in prognostic accuracy can be seen through seeking a second opinion[15] or through a multidisciplinary team (MDT) discussion.[16–18]

MDTs include members from different healthcare and non-healthcare professions and disciplines, who work together to provide and improve care for patients.[19 20] Team members can include professionals such as doctors, nurses, occupational therapists, physiotherapists, speech and language therapists, chaplains and social workers, where some professionals are part of ongoing patient care and others may be involved on an ad hoc basis to meet specific needs.[21] The MDT facilitates communication between different professionals, which can improve the working environment and provide learning and development opportunities.[22] Decisions about patient treatment and care may be based on reviews of clinical documentation such as case notes, test results and diagnostic imaging.[23] MDTs are common in care of the elderly, mental health, oncology and other services,[24] and are an essential feature of holistic palliative care provision.[25]

An independent report into shortcomings of the Liverpool Care Pathway for the Dying Patient recommended that research should be undertaken to better identify imminently dying patients and to understand how MDTs make prognostic decisions and communicate uncertainty.[26] Previous reviews reporting on MDTs in palliative care have focused on assessing their outcomes and efficiency[27–29] rather than their prognostic decision-making processes. The aim of this scoping review was to explore how MDTs make decisions about whether patients are imminently dying. In addition, the review includes a closer investigation of the specialist palliative care setting to identify any established processes that could potentially be recommended for other settings.

Aim

The review aimed to identify how the decision-making process is reported in the literature in order to highlight significant gaps in evidence. The primary research question was:

- What is known, from the existing MDT decision-making literature, about the identification of patients who are dying?

The secondary research questions were:

- How is the decision-making process described in the literature?
- What are the characteristics of decision-making about the identification of dying patients in specialist palliative care settings?
- Are there any decision-making barriers, opportunities and/or recommendations?

METHODS

A scoping review was conducted to address study aims. This type of review is appropriate for highlighting significant gaps in the evidence[30 31] and provides a useful alternative to standard systematic reviews when clarification around concepts or theory is required.[32] Scoping reviews are systematic in their approach but a key difference between scoping reviews and systematic reviews is that they have a broader research question than traditional systematic reviews and will therefore often involve more expansive inclusion criteria.[32] Moreover, scoping reviews do not usually involve critical appraisal of the evidence, instead the focus is on providing an overview of the evidence.[32] In this way, scoping reviews can identify areas for future systematic reviews or other types of evidence synthesis.[33]

The review was conducted using the theoretical framework for scoping reviews introduced by Arksey and O'Malley,[30] and by following current guidelines within the field.[33] The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline for Scoping Reviews[34] was followed. The protocol for the review was registered with the Open Science Framework on 26th August 2020 (www.osf.io/sv5te).

Search

Databases were searched from inception until 18th May 2021 and comprised the following six electronic databases: AMED, CINAHL, Embase, MEDLINE, PsycINFO and Web of Science. No date limit was applied in order to capture the breadth of literature. Grey Literature Report (www.greylit.org) and Open Grey (www.opengrey.eu) were also searched to identify further potentially eligible studies. Additionally, forward and backward citation searches were undertaken.

The search strategy comprised four domains: (1) palliative population; (2) MDTs; (3) decision-making and (4) prognosis/dying (see online supplemental file 1). Since the aim was to provide an overview of the field and identify knowledge gaps, a highly sensitive search strategy was used, using synonyms and similar concepts for keywords. Search terms were tailored to each database's search engine and terminology.

Eligibility criteria

The following eligibility criteria were applied during the screening process. No studies were excluded on the basis of study design.

Inclusion criteria

- English-language full-text papers.
- Studies presenting original data (either qualitative or quantitative) related to MDT decision-making about the identification of patients who are imminently dying.
- Studies reporting on the process and/or content of MDT meetings or discussions, either by studying the team as a whole, or individual team members (e.g., surveys of doctors' and nurses' individual reflections on MDT communication).

Exclusion criteria

- Non full-text and non-peer-reviewed publications (e.g., conference, poster and meeting abstracts, dissertations and theses).
- Studies involving children (subjects under 18 years old).
- Studies conducted exclusively in intensive care units (ICUs), emergency departments or similar acute care settings.

- Teams that did not consist of members with different professional roles.
- Studies concerning patients who were not imminently dying (estimated length of survival longer than hours/days).
- Studies exploring how team members interacted with patients and/or family carers rather than between themselves.
- Studies concerning clinicians' reflections on MDT discussions in which they did not participate (e.g., medical directors' reflections on MDT working).

Studies conducted exclusively in acute care were excluded because prognosticating imminent death in these settings was deemed likely to involve significantly different processes from prognosticating in non-acute settings and to fall outside of the scope of the review. In this review, we define acute care settings as ICUs, emergency departments and similar acute settings. In these acute care settings, decisions often need to be made quickly and there may be little time for MDT deliberation. Prognostication of imminent death in ICUs, for example, may be complicated by decisions about withdrawal of immediately life sustaining therapies (e.g., intubation). Studies conducted in both acute and non-acute care settings were deemed eligible for inclusion.

The definition of what constituted an MDT for the purpose of prognostic decision-making was kept broad to avoid excluding potentially relevant literature. Studies were deemed eligible if they reported on decision-making between at least two professionals with different roles or disciplines.

Selection of sources of evidence

Publications were initially screened by title and abstract by two reviewers independently (AB and LO/A-RS/LM). If reviewers did not agree on eligibility of a publication, or if eligibility was unclear, the paper was retained for further scrutiny. The second round of screening involved review of full-text papers, which was also done independently by two reviewers (AB and LO). Any remaining disagreements were resolved through consensus in the study team.

Data extraction and analysis

Data extraction was completed independently by two reviewers (AB and LO). Extracted data included paper characteristics (authors, year of publication and country of origin), study aims, methods of data collection, analysis and study design (clinical setting, patient type, number and profession of participants).

Decisions were identified either by direct quotes from MDT members or authors' descriptions of decisions.[35] These data are referred to as 'excerpts'. Decision-making characteristics were extracted for each decision reported in included papers. Characteristics included staff members involved in the decision, topic of the decision and description of the decision-making process.

There is an overlap between recognising dying, managing dying and treating acute illness. The process by which dying is recognised cannot always be clearly separated from other processes of clinical care which take place at the same time.[36] Decisions were categorised according to the topic of the decision being discussed by the MDT. All excerpts involved MDT members' decisions about identifying imminent death, however some also related to other aspects of care.

After identifying relevant decision-making characteristics, it was decided to categorise decision-making processes according to the degree to which they were deemed to be collaborative (showing full, partial or no collaboration). Judgements about the level of collaboration were based on whether excerpts provided evidence of information-sharing between staff and/or evidence of joint decision-making. In addition, emerging subthemes were identified when excerpts were categorised.

Additionally, recommendations and barriers reported in the study implications section of included papers were extracted.

Paper excerpts and themes/categorisations were extracted and managed using Microsoft Word. A narrative review approach has been applied, resulting in a narrative synthesis of the scoped research.

Patient and public involvement

Patients and/or members of the public were not involved in the design, conduct, reporting or dissemination plans of this review.

RESULTS

The search initially identified 10592 publications which reduced to 8327 after duplicate records were removed. Title and abstract screening yielded 1351 potentially eligible publications. After full-text screening, 25 papers were initially identified for inclusion in the review. An additional 15 papers were identified following backward and forward citation searches, resulting in a total of 40 papers (figure 1). These papers yielded 67 excerpts relevant to MDT decision-making about identification of patients who were imminently dying.

Characteristics of included studies

Key characteristics of the included studies are shown in table 1.

Studies were conducted in ten countries: UK (n=14),[37–50] Australia (n=6),[51–56] USA (n=5),[57–61] Sweden (n=5),[62–66] Canada (n=4),[67–70] New Zealand (n=2),[71 72] Saudi Arabia (n=1),[73] the Netherlands (n=1),[74] Thailand (n=1)[75] and China (n=1).[76] Years of publication ranged from 2001 to 2021.

Data were mostly collected using qualitative approaches. Interviews were completed in 27 of the included studies; either as sole method of data collection (n=15)[39 40 45 46 51 55 57 59 64 66–70 76] or alongside other methods. These included focus groups,[37 41 47 48 50 62]

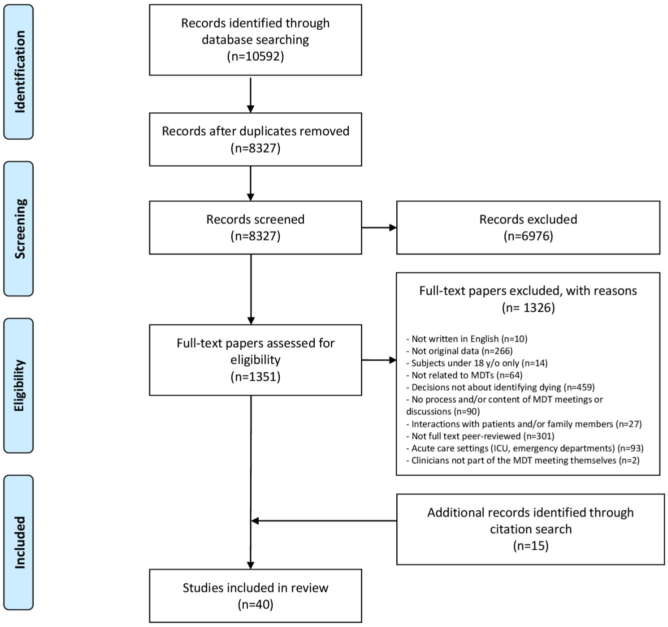

Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram of study selection.

collaborative learning groups,[42] observations,[37 38 42 43 49 54 74] field notes,[38 42 43 63] review of case notes,[37] documentary analysis[42] and questionnaires.[42] Studies reported using focus groups alone[44 56 58 60 61 72] or in combination with surveys.[71] Other studies collected data through reflective journaling and field notes[73]; free-text comments of questionnaires[65]; retrospective observational audit of patient deaths[52] and reviewing patients' medical records.[53]

Methods of data analysis were qualitative, and most often involved identifying themes. Most studies reported having conducted a general analysis of themes (n=22).[37–43 45–49 55 60 61 64 67 68 70 72–74] Content analysis[51–54 56 57 62 65 66 76] and thematic analysis involving specific frameworks were conducted as well.[44 50 58 59 69 75] Other methods included narrative analysis,[63] basic descriptive analysis[71] and matrix analysis.[59]

The majority of studies were conducted in hospital settings (n=28).[37 38 40 41 44 45 47–49 51–56 58 59 63–71 73 75 76] Other clinical settings included care homes (n=10),[42 43 50 57 60–62 67 72 74] hospices (n=5),[39 41 46 48 55] community (n=5)[40 50 55 59 76] and primary care (n=4).[40 41 48 50]

Nurses were most often included in the sample under investigation. 11 studies included only doctors and nurses as part of the sample.[38–40 44–46 62 65 68 70 76] Ten studies included doctors, nurses and other types of healthcare professionals.[41 42 47 48 50 51 61 67 71 74] Three studies included only nurses and other healthcare professionals.[43 56 60] 13 studies focused on a particular group of professionals such as nurses,[49 54 55 63 64 66 69 73 75] doctors,[57 59] physician assistants[58] or healthcare assistants.[72] Two studies included any type of clinician who wrote an entry in patients' medical records.[52 53] Lastly, one study did not specify the professionals involved but study quotes came from doctors and nurses.[37]

MDT prognostic decision-making

Among included studies, 67 excerpts related to MDT decision-making processes about whether a patient was imminently dying (see online supplemental file 2). The decision-making information came from interview quotes, free-text comments, medical notes or/and from authors' summarised descriptions of data. Decision-making characteristics are shown in table 2.

Staff members involved in decision-making

Various staff members were involved in decision-making (table 2). Included studies most often reported decisions involving nurses and doctors.[38–41 43–47 49 51 52 54–56 62–71 73 75] Evidence showed that decision-making between different types of nurses[62] and between doctors with different specialties[48 59] occurred as well. Decision-making between doctors and 'other' or 'unspecified' staff members[39 50 53 57 58 74] and between nurses and other staff groups[37 39 40 42 69 70 72 76] also occurred. Allied healthcare professionals were reported as being involved in the decision-making in four of the included studies.[51 53 67 69] Two studies reported how other specified healthcare professionals such as carers and physician assistants were involved in decision-making.[42 58]

Topic of decisions

Almost half of the decisions (n=32) involved healthcare professionals recognising or judging whether a patient was dying,[40 42–51 53–55 59–61 67 69–72 76] which included descriptions such as whether the patient was at the end-of-life or was considered 'palliative'. Formulations also included whether a palliative approach should be initiated and how staff recognised changes related to patient deterioration.

However, identifying dying was usually not the only or even the main decision being discussed by the MDT. Other issues, related to the identification of dying patients, were deciding whether to use a specific end-of-life care pathway (n=13)[39 43 45 51 56 62 71 74]; discussing or clarifying patients' goals of care (n=9)[37 41 52 53 58 69 70 75]; making do not resuscitate (DNR) orders (n=5)[38 40 65 66 73]; whether specific (aggressive) treatments were appropriate and/or should be continued (n=4)[63 68 69 75]; communication and consensus (n=3)[41 57 67]; roles in care or decision-making (n=3)[38 64 67]; life-sustaining interventions (n=2)[49 70]; unspecified decisions (n=2)[38 53] and decisions about eating and drinking (n=1).[51]

The decision-making process

The decision-making process refers to *how* healthcare professionals make decisions about the identification of whether a patient is dying. Excerpts were categorised as to whether the decision-making process was judged to show evidence for full, partial or no collaboration (table 2).

Five excerpts provided evidence for both information-sharing and joint decision-making and were judged to show full collaboration. However, most excerpts (n=44) showed evidence for either information-sharing or joint decision-making, but not both. These excerpts were categorised as showing partial collaboration.

Table 1 Study characteristics

Author(s) and publication year	Country of study	Study focus*	Method(s) of data collection	Method(s) of data analysis†	Clinical setting‡	Relevant sample size§
Abu-Ghori *et al* 2016[73]	Saudi Arabia	Examine nurses' lived experience and the meaning of their involvement in EOL care after a DNR decision has been made on medical units	Reflective journaling technique and field notes	General analysis of themes	Hospital (general medical units) *Patients with a DNR code*	26 nurses
Andersson *et al* 2018[62]	Sweden	Describe care professionals' experiences of using the LCP in the care of dying residents in residential care homes	Focus groups and individual interviews	Content analysis	Residential care homes	10 ENs/NAs, 9 RNs and 5 GPs
Bern-Klug *et al* 2004[57]	USA	Improve understanding of nursing home physicians' perspectives regarding EOL care	Individual interviews	Content analysis	Nursing home	12 physicians (10 were medical directors)
Bloomer *et al* 2013[54]	Australia	Explore nurses' 'recognition of' and 'responsiveness to' dying patients and to understand the nurses' influence on EOL care in the acute hospital (non-PC) setting	Individual interviews, focus groups and non-participant observation	Content analysis	Hospital (2 acute medical wards)	25 nurses, including ward nursing staff and nurse managers
Bloomer *et al* 2018[51]	Australia	Explore communication of EOL care goals and decision-making among a multidisciplinary geriatric inpatient rehabilitation team	Individual and group interviews	Content analysis	Hospital (geriatric inpatient rehabilitation facility)	8 RNs, 4 ENs, 5 allied healthcare clinicians and 2 doctors
Bloomer *et al* 2019[52]	Australia	Investigate EOL care provision for older people in subacute care	Retrospective observational audit of inpatient deaths	Content analysis	Subacute care facility (rehabilitation, functional restoration, transitional care, aged and mental healthcare)	Any clinician who wrote an entry in the medical records of one of the 54 deceased patients
Borbasi *et al* 2005[55]	Australia	Explore the views of nurses on EOL care for patients with end stage heart failure	Individual interviews	General analysis of themes	3 hospitals (ICU, cardiac ward, medical ward) and 1 community nursing/hospice facility	17 nurses (9 RNs, 7 clinical nurse consultants or clinical nurses, 1 nurse manager)
Bostanci *et al* 2016[53]	Australia	Explore reasons for the hospitalisation and place of death outcomes of terminal cancer patients	Review of medical records	Content analysis	2 hospitals *Advanced cancer patients (prostate, breast, lun or haematological)*	Any clinician who wrote an entry in the medical records of one of the 39 patients
Caswell *et al* 2015[37]	UK	Understand the factors and processes which affect the quality of care provided to frail older people who are dying in hospital	Non-participant observation, individual interviews, focus group and review of case notes	General analysis of themes	Hospital (acute admissions ward, specialist medical and mental health unit for older people with cognitive impairment, and 2 healthcare of older people wards) *Frail older people*	32 interviews with staff members and 1 focus group with 5 members of the PC team Review of 42 patient records

Continued

Table 1 Continued

Author(s) and publication year	Country of study	Study focus*	Method(s) of data collection	Method(s) of data analysis†	Clinical setting‡	Relevant sample size§
Chuang *et al* 2017[58]	USA	Explore roles PAs serve in communicating with terminally ill patients/families and PAs attitudes and opinion about communication roles	Focus groups	Thematic analysis	3 acute care hospitals	34 PAs
					Inpatients on medical, surgical and ICUs	
Clark *et al* 2012[71]	New Zealand	Staff perceptions of EOL care following implementation of the LCP in the acute care setting	Survey and focus groups	Basic descriptive analysis	Hospital (2 acute wards)	41 (survey), 1 medical focus group (n=6), 2 nursing focus groups (n=9) and 1 allied health focus group (n=3)
Costello 2001[38]	UK	Explore the experiences of dying patients and nurses working in three elderly care wards focusing on the management of care for dying patients	Participant observation, individual interviews and field notes	General analysis of themes	Hospital (female rehabilitation ward, continuing care ward and acute assessment ward)	29 qualified nurses, 8 physicians (2 consultants, 2 registrars and 4 senior house officers)
					Older (dying) patients	
Dee and Endacott 2011[39]	UK	Identify factors that clinicians consider when a patient is dying, enabling implementation of the LCP	Individual interviews	General analysis of themes	Hospice (inpatient unit)	5 nurses and 5 doctors
Freemantle and Seymour 2012[45]	UK	Understand why patients dying of cancer in oncology wards were, or were not, supported by the LCP	Individual interviews	General analysis of themes	Hospital (three oncology wards)	4 doctors and 7 nurses
Fryer *et al* 2016[72]	New Zealand	Explore the experiences of HCAs in caring for imminently dying residents in aged care facilities	Focus groups	General analysis of themes	6 aged residential care facilities	26 HCAs
Gambles *et al* 2006[46]	UK	Explore hospice-based doctors' and nurses' perceptions of the LCP	Individual interviews	General analysis of themes	Inpatient hospice	3 doctors and 8 nurses
Gidwani *et al* 2017[59]	USA	Characterise oncologists' perceptions of: primary and specialist PC; experiences interacting with PC specialists; and the optimal interface of PC and oncology in providing PC	Individual interviews	Matrix and thematic analysis	Community, AMCs and VA	31 oncologists (9 in community, 11 in AMCs, 9 in VAs and 2 in administrative roles)
					Cancer patients	
Glogowska *et al* 2016[40]	UK	Explore perceptions and experiences of healthcare professionals working with patients with heart failure around EOL care	Individual interviews	General analysis of themes	Primary, secondary, and community care	7 GPs in primary care, 12 doctors and nurses in secondary care and 5 nurses in community care
					Severe or difficult to manage heart failure patients	
Gott *et al* 2011[41]	UK	Management of transitions to a PC approach in acute hospitals	Focus groups and individual interviews	General analysis of themes	Primary (general practices) and secondary (acute hospital, hospice, specialist PC unit) care settings	4 consultants, 9 junior doctors, 6 GPs, 4 practice nurses, 11 CNSs, 19 with other specialties and 5 allied healthcare professionals

Continued

Table 1 Continued

Author(s) and publication year	Country of study	Study focus*	Method(s) of data collection	Method(s) of data analysis†	Clinical setting‡	Relevant sample size§
Hanson *et al* 2002[61]	USA	Describe unique characteristics of death in a nursing home and define essential elements of care that participants perceive as necessary for a good death in this setting	Focus groups	General analysis of themes	2 long-term care facilities	77 participants, including NAs, RNs, licensed practical nurses and physicians
Hill *et al* 2018[67]	Canada	Investigate experiences of long-term care staff delivering PC to individuals with dementia	Individual interviews	General analysis of themes	Long-term care homes *People with dementia*	9 RNs, 3 personal support workers, 2 registered practical nurses, 2 social workers, 1 pharmacist, 1 volunteer, 1 volunteer coordinator, 1 physician, 1 recreational therapist and 1 chaplain
Hockley *et al* 2005[42]	UK	Evaluating implementation of an 'integrated care pathway for the last days of life' as a way of developing quality EOL care in nursing homes	Action research (documentary analysis, non-participant observations, group interviews, questionnaires, collaborative learning groups, and field notes)	General analysis of themes	Nursing homes	Nursing home staff (trained staff, care assistants, nursing home managers) and GPs
Johnson *et al* 2014[43]	UK	Report complexities facing relatives, residents and nursing home staff in the awareness, diagnosis, and prediction of the dying trajectory	Individual or small group interviews, focus groups, participant observation and field notes	General analysis of themes	Nursing homes	14 HCAs and senior HCAs, 12 RNs and 2 managers
Lai *et al* 2018[76]	China	Explore the experiences of healthcare providers in caring for patients at the EOL stage in non-PC settings	Individual interviews	Content analysis	2 hospitals and 1 community healthcare centre (providing acute, subacute, and primary care) *Patients with cancer or non-cancer chronic disease*	13 physicians and 13 nurses
Lemos Dekker *et al* 2018[74]	The Netherlands	Analyse professional caregivers' experiences with the LCP in dementia	Non-participant observation and interviews	General analysis of themes	Nursing home (11 dementia care units)	4 specialist elderly care physicians, 1 nurse practitioner and 20 nursing staff
Näppä *et al* 2014[63]	Sweden	Explore challenging situations experienced by RNs when administering palliative chemotherapy treatments to patients with incurable cancer	Individual interviews and field notes	Narrative analysis	Hospital (chemotherapy units) *Patients with incurable cancer receiving palliative chemotherapy*	17 RNs

Continued

Table 1 Continued

Author(s) and publication year	Country of study	Study focus*	Method(s) of data collection	Method(s) of data analysis†	Clinical setting‡	Relevant sample size§
Nouvet *et al* 2016[68]	Canada	Identify barriers and ideas for improving EOL communication and decision-making with seriously ill patients in hospital	Individual interviews	General analysis of themes	3 hospitals (inpatient medical wards) *Patients with non-surgical serious illness*	18 physicians (staff physicians or residents) and 12 nurses
Oliveira *et al* 2016[69]	Canada	Describe nurses' experiences providing EOL care and to identify factors that support and hinder EOL care in an acute medical unit	Individual interviews	Thematic analysis	Hospital (2 medical units)	10 RNs
Pettersson *et al* 2014[66]	Sweden	Investigate haematology and oncology nurses' experiences and perceptions of DNR orders	Individual interviews	Content analysis	f4 hospitals (eight haematology and oncology departments)	15 nurses
Pettersson *et al* 2020[65]	Sweden	Describe and explore what ethical reasoning physicians and nurses apply in relation to DNR-decisions in oncology and haematology care	Questionnaires (free-text comments)	Content analysis	7 (16 haematology and oncology departments)	46 nurses (15 haematology nurses, 31 oncology nurses) and 43 physicians (14 haematology physicians, 29 oncology physicians)
Pontin *et al* 2013[44]	UK	Explore hospital specialist PC professionals' experience of prognostication	Focus groups	Thematic analysis	Hospital (specialist PC) *Patients with advanced malignant and non-malignant life-limiting diseases*	4 hospital specialist palliative medicine consultants, 3 senior doctors in training and 9 CNSs
Prompahakul *et al* 2021[75]	Thailand	Describe the experience of moral distress and related factors among Thai nurses	Individual interviews	Thematic analysis	2 hospitals (31 acute care units and 17 critical care units)	20 RNs
Reid *et al* 2015[47]	UK	Explore healthcare professionals' views on delivering EOL care within an acute hospital trust	Focus groups and individual interviews	General analysis of themes	Acute hospital trust (orthopaedic, 2 different medical and healthcare of the elderly wards)	2 consultants, 4 specialist registrars, 6 junior doctors, 1 staff grade doctor, 5 ward sisters, 8 staff nurses, 2 HCAs and 7 nurses
Ryan *et al* 2012[48]	UK	Explore the experiences of healthcare practitioners working in PC in order to establish the issues relating to EOL care for people with dementia	Focus groups and individual interviews	General analysis of themes	Acute hospital, general practice, hospice, and specialist PC unit *People with dementia*	4 consultants, 9 junior doctors, 6 GPs, 4 practice nurses, 11 CNSs, 19 other nurses and 5 allied healthcare professionals
Standing *et al* 2020[50]	UK	Examine how professional boundaries and hierarchies influence how EOL care is managed and negotiated between health and social care professionals	Focus groups and individual interviews	Thematic analysis	Community care (including GP practices and care homes)	7 GPs, 2 out of hours GPs, 10 nurses, 11 specialist EOL nurses, 3 formal carers, 10 paramedics, 6 social workers, 4 pharmacists, 4 hospital doctors and 5 other supporting professions

Continued

Table 1 Continued

Author(s) and publication year	Country of study	Study focus*	Method(s) of data collection	Method(s) of data analysis†	Clinical setting‡	Relevant sample size§
Strachan *et al* 2018[70]	Canada	Examine nurse and physician perceptions of the nurse's role in goals of care discussions and decision-making with patients experiencing serious illness and their families	Individual interviews	General analysis of themes	3 hospitals (acute medical units)	12 nurses, 9 staff physicians and 9 medical resident physicians
Tan *et al* 2014[56]	Australia	Staff experiences of EOL care for older people in a subacute rehabilitation facility	Focus groups	Content analysis	Subacute facility for people over 65, with a focus on evaluation and rehabilitation	8 junior nurses, 7 junior allied healthcare professionals and 5 senior multidisciplinary staff
Travis *et al* 2005[60]	USA	Describe how MDTs in long-term care settings identify when a resident is approaching end-stage disease or is entering terminal decline	Focus groups	General analysis of themes	2 Nursing homes	14 team members representing nursing, social work, physical therapy, admissions and medical records
Wallerstedt and Andershed 2007[64]	Sweden	Describe nurses' experiences in caring for dying patients outside special PC settings	Individual interviews	General analysis of themes	Primary home care (district care), community (home care and nursing home care), and hospital (surgery, medicine, and gynaecology)	9 nurses
Willard and Luker 2006[49]	UK	Explore challenges faced by professionals in delivering EOL care in acute hospitals	Individual interviews and non-participant observation	General analysis of themes	5 hospital trusts *Cancer patients*	29 nurses (3 nurse practitioners, 2 research nurses, 11 tumour-specific CNSs, 9 PC CNSs, 4 CNSs with combined tumour-specific and PC roles)

*If a study has several study foci, then only the one(s) relevant for the review is(are) mentioned.

†The label 'general analysis of themes' is used for studies reporting having analysed themes but where the study team has not been able to identify a specific approach or framework in the paper. If authors named a specific type of thematic analysis, then the 'thematic analysis' label is applied.

‡Patient type is only described if it is not clear from the clinical setting itself what type of patients it involves, or if only a certain type of patients is included in the study.

§If the study includes other types of participants such as patients, relatives, etc, then only the relevant sample size of MDT staff members is mentioned.

AMCs, academic medical centres; CNSs, clinical nurse specialists; DNR, do not resuscitate; ENs, enrolled nurses; EOL, end-of-life; GP, general practitioner; HCAs, healthcare assistants; ICU, intensive care unit; LCP, The Liverpool Care Pathway for the Dying Patient; NAs, nurse assistants; PAs, physician assistants; PC, palliative care; RNs, registered nurses; VA, veterans health administration.

Table 2 Decision-making characteristics

Author(s) and publication year	Decision no*	Staff involved in decision-making	Topic of decision	Decision-making process
Abu-Ghori *et al* 2016[73]	D#1	Nurse and doctor	DNR order	No evidence for collaboration
Andersson *et al* 2018[62]	D#2	Registered nurse and enrolled nurses	Pathway usage	Evidence for joint decision-making
	D#3	Registered nurse and responsible nurse or doctor	Pathway usage	Evidence for joint decision-making
	D#4	Registered nurses, enrolled nurses and GPs	Pathway usage	Evidence for full collaboration
Bern-Klug *et al* 2004[57]	D#5	Physician and nursing staff (certified nurse assistant)	Communication and consensus	Evidence for information-sharing
Bloomer *et al* 2013[54]	D#6	Nurses and medical officer	Recognising dying	No evidence for collaboration
	D#7	Nurses and doctors	Recognising dying	Evidence for information-sharing
Bloomer *et al* 2018[51]	D#8	Nurse, senior nurse and doctor	Recognising dying	Evidence for full collaboration
	D#9	Speech pathologist and the team	Recognising dying	Evidence for information-sharing
			Pathway usage	
			Eating and drinking	
Bloomer *et al* 2019[52]	D#10	Doctor and nurse	Goals of care	Evidence for information-sharing
Borbasi *et al* 2005[55]	D#11	Nurses and medical officers	Recognising dying	Evidence for information-sharing
Bostanci *et al* 2016[53]	D#12	Physiotherapist and doctor	Recognising dying	Evidence for information-sharing
	D#13	Healthcare professionals and medical doctors	Goals of care	Evidence for joint decision-making
	D#14	Allied health staff and the medical team	Unspecified decision	No evidence for collaboration
Caswell *et al* 2015[37]	D#15	Nurses and other staff members	Goals of care	Evidence for information-sharing
Chuang *et al* 2017[58]	D#16	Physician assistants and attending physicians	Goals of care	No evidence for collaboration
Clark *et al* 2012[71]	D#17	Nurse and doctors	Pathway usage	Evidence for joint decision-making
	D#18	Consultant and nurses	Recognising dying	Evidence for joint decision-making
			Pathway usage	
Costello 2001[38]	D#19	Nurses and physicians	Unspecified decision	Evidence for joint decision-making
	D#20	Nurses and physicians	Roles in care/decision-making	Evidence for information-sharing
	D#21	Nurses and physicians	DNR order	Evidence for joint decision-making
Dee and Endacott 2011[39]	D#22	Nurses and doctors	Pathway usage	No evidence for collaboration
	D#23	Nurses and other clinicians	Pathway usage	No evidence for collaboration
	D#24	Doctor and nursing staff	Pathway usage	No evidence for collaboration

Continued

Table 2 Continued

Author(s) and publication year	Decision no*	Staff involved in decision-making	Topic of decision	Decision-making process
Freemantle and Seymour 2012[45]	D#25	Nurse and registrar	Pathway usage	Evidence for information-sharing
	D#26	Doctors and nurses	Recognising dying	Evidence for information-sharing
	D#27	Nurse and consultant	Recognising dying	No evidence for collaboration
Fryer *et al* 2016[72]	D#28	Healthcare assistants and registered nurses	Recognising dying	Evidence for information-sharing
Gambles *et al* 2006[46]	D#29	Doctors and nurses	Recognising dying	No evidence for collaboration
Gidwani *et al* 2017[59]	D#30	Oncologists and palliative care physicians	Recognising dying	No evidence for collaboration
	D#31	Oncologists and palliative care specialists/physicians	Recognising dying	No evidence for collaboration
Glogowska *et al* 2016[40]	D#32	Community specialist heart failure nurse and consultant	DNR order	Evidence for joint decision-making
	D#33	Hospital specialist heart failure nurse and doctor	Recognising dying	Evidence for information-sharing
	D#34	Hospital specialist heart failure nurse and a palliative care service	Recognising dying	No evidence for collaboration
Gott *et al* 2011[41]	D#35	Geriatric specialist registrar and other clinicians involved in patient’s care, including consultant	Communication and consensus	Evidence for information-sharing
	D#36	Nurses, registrar and consultant	Goals of care	Evidence for joint decision-making
Hanson *et al* 2002[61]	D#37	Physician and nurses	Recognising dying	Evidence for information-sharing
Hill *et al* 2018[67]	D#38	Registered nurse and physician	Recognising dying	Evidence for joint decision-making
	D#39	Nurses and physicians, social workers, chaplains and recreation therapists	Communication and consensus Roles in care/decision-making	No evidence for collaboration
Hockley *et al* 2005[42]	D#40	Nurses and other staff, including doctors (specifically the GP)	Recognising dying	Evidence for full collaboration
	D#41	Nurses and ward team	Recognising dying	Evidence for joint decision-making
	D#42	X and carers	Recognising dying	Evidence for joint decision-making
	D#43	Carer and X	Recognising dying	Evidence for information-sharing
Johnson *et al* 2014[43]	D#44	Senior nurse and GP	Recognising dying Pathway usage	Evidence for full collaboration
Lai *et al* 2018[76]	D#45	Nurses and other healthcare providers	Recognising dying	No evidence for collaboration
Lemos Dekker *et al* 2018[74]	D#46	Doctor and nursing staff	Pathway usage	No evidence for collaboration
Näppä *et al* 2014[63]	D#47	Nurse and physician	Treatment decisions	Evidence for information-sharing
Nouvet *et al* 2016[68]	D#48	Nurse and attending physician	Treatment decisions	Evidence for information-sharing

Continued

Table 2 Continued

Author(s) and publication year	Decision no*	Staff involved in decision-making	Topic of decision	Decision-making process
Oliveira *et al* 2016[69]	D#49	Nurses and doctors	Treatment decisions	No evidence for collaboration
	D#50	Nurses and doctors	Goals of care	No evidence for collaboration
	D#51	Nurses, residents/medical students and staff physician	Recognising dying	Evidence for information-sharing
	D#52	Nurses and other healthcare professionals (registered respiratory therapists and a palliative care consult service)	Goals of care	Evidence for information-sharing
Pettersson *et al* 2014[66]	D#53	Nurses and physicians	DNR order	Evidence for information-sharing
Pettersson *et al* 2020[65]	D#54	Nurse and physician	DNR order	Evidence for information-sharing
Pontin *et al* 2013[44]	D#55	Specialist registrar and nurses	Recognising dying	Evidence for information-sharing
Prompahakul *et al* 2021[75]	D#56	Nurses and doctors	Treatment decisions	Evidence for information-sharing
	D#57	Nurses and doctors	Goals of care	Evidence for information-sharing
Reid *et al* 2015[47]	D#58	Nurses and doctors	Recognising dying	Evidence for information-sharing
	D#59	Junior doctors, nurses and senior doctors	Recognising dying	No evidence for collaboration
Ryan *et al* 2012[48]	D#60	Geriatrician and psychiatrist	Recognising dying	Evidence for information-sharing
Standing *et al* 2020[50]	D#61	Doctor and care home staff	Recognising dying	Evidence for information-sharing
Strachan *et al* 2018[70]	D#62	Nurse and doctor or team members	Goals of care	Evidence for information-sharing
	D#63	Nurses and doctors	Recognising dying Life-sustaining interventions	Evidence for information-sharing
Tan *et al* 2014[56]	D#64	Nurses, registrar and consultant	Pathway usage	Evidence for information-sharing
Travis *et al* 2005[60]	D#65	Members of the MDT and physician	Recognising dying	Evidence for full collaboration
Wallerstedt and Andershed 2007[64]	D#66	Nurses and doctors	Roles in care/decision-making	Evidence for information-sharing
Willard and Luker 2006[49]	D#67	Palliative care clinical nurse specialist and consultant	Recognising dying Life-sustaining interventions	Evidence for information-sharing

*Decision-making excerpts were numbered, and the numbers refer to the full excerpts that can be seen in online supplemental file 2.
DNR, do not resuscitate; GP, general practitioner; MDT, multidisciplinary team.

Information-sharing (n=32) was more common than joint decision-making (n=12). This implies that on many occasions although information was shared within the team, decision-making was undertaken by only one member of the MDT. Some excerpts (n=18) included no evidence of either information-sharing or joint decision-making and these were categorised as showing no collaboration. Recurring subthemes in the excerpts were disagreement between team members and how doctors were described as sole decision-makers.

Prognostic decision-making in specialist palliative care settings

Six included studies were conducted in specialist palliative care settings such as hospital specialist palliative care units[41 44 48]; hospices[39 41 46 48] and one community nursing/hospice facility.[55] Three studies were conducted in multiple settings, including specialist palliative care.[41 48 55] However, relevant excerpts from these studies did not specifically involve staff from specialist palliative care, and therefore, could not be used to describe decision-making characteristics in that setting.

Dee and Endacott[39] reported no evidence for collaborative decision-making processes in the included excerpts from their study conducted in a hospice inpatient unit. These excerpts showed how nurses felt their opinions were not considered, and how there were issues with communication between nursing staff and doctors (see D#22–24 in online supplemental file 2).

Similarly, Gambles *et al*'s[46] study conducted in an in-patient hospice also provided no evidence for collaboration. However, the relevant excerpt reported that nurses have more influence, responsibility and could act as decision-makers (see D#29 in online supplemental file 2). The excerpt also showed that this non-collaborative process was viewed positively by doctors. This finding stands in contrast to a recurring theme in other excerpts, in which doctors are described as sole decision-makers.

Pontin and Jordan[44] conducted a study in a hospital specialist palliative care setting and presented evidence for partial collaboration. They showed how nurses share information and keep doctors up to date, and how doctors value nurses' assessments and regard them as better prognosticators because of their level of contact with patients (see D#55 in online supplemental file 2).

Decision-making barriers, opportunities or recommendations

Half of the included studies (n=20) reported barriers, opportunities, or recommendations about MDT decision-making. These included more effective communication, improved collaboration and teamwork, and end-of-life training. Communication and collaboration were often closely linked together.

The most prominent theme across studies was the need for improved communication.[41 43 45 48 55–59 61 69] Training in communication skills may ease role anxiety and make professionals more effective.[58] One study suggested that communication should address priorities of care especially out of hours, ensuring regular senior review of all dying patients and supporting frontline staff.[45] Study authors also proposed better collaboration and communication across services,[55 59 71] including structured communication about prognostic information to avoid duplication and fragmentation of services.[59] Another study detailed how the healthcare environment itself presents challenges to communication and collaboration and that research is needed on how to better support and structure healthcare environments.[69]

A need for better collaboration and teamwork was also reported.[41 50 57 61 66 69 72 73] The need to respect contributions from all professional groups and avoid discounting the knowledge of staff in subordinate positions was highlighted.[50] One study recommended that research should aim to understand the perspectives of team members to enhance understanding of the support and optimal teamwork required to manage end-of-life care.[73] Another study proposed that scheduled team rounds might facilitate teamwork in order to better meet complex care needs of dying patients.[61] Studies mentioned the importance of reaching team consensus on patients' palliative care needs in order to make adequate care changes.[41] Thus, care and communication processes should be restructured to facilitate team consensus.[57]

The need for more effective MDTs was also addressed.[51 53 58] One study recommended that healthcare professionals from every discipline should be prepared to care for dying patients.[51] The need for research and training on improving understanding of end-of-life roles and responsibilities of MDT members was also highlighted.[51 58] Chuang *et al*[58] further proposed redesigning workflows, which should include interdisciplinary team rounds. The study by Bostanci *et al*[53] addressed the potential input of allied healthcare professionals into end-of-life discharge planning as well.

Studies also reported the need for educating staff in end-of-life care and about the dying process.[43 47 55 56 67 71 72] Studies claimed that appropriate end-of-life care could only be delivered if the culture accepts death and dying as a possible outcome for patients,[47] and all team members should be prepared to 'let go' at an appropriate time.[55] Training should increase awareness of the dying process to ensure that patients have timely access to palliative care and to provide staff with the knowledge and tools to make decisions regarding initiating palliative care.[67]

DISCUSSION

Using a systematic approach to scoping the available literature, we identified 40 papers from ten countries describing the process of MDT decision-making about the identification of imminently dying patients. Information about the decision-making process was usually available in the form of interview quotes from nurses and doctors. While most decisions focused specifically on professionals recognising that patients were dying, other decisions focused on whether specific end-of-life care pathways should be initiated or dealt with clarifying patients' care goals. Most excerpts provided evidence for a partial collaborative approach to decision-making, with information-sharing being more common than joint decision-making. Issues with decision-making were articulated through disagreement between staff members. This was closely related to the fact that doctors were often regarded as the final or sole decision-maker.

Limited information was available from specialist palliative care settings. Decision-making in these settings provided evidence for either no or partial collaboration. However, nurses were reported to act as final decision-makers in this setting in contrast to findings from other settings.

Study authors considered that staff collaboration and communication were important and should be improved. Redesigning workflows, including scheduled team rounds, and facilitating consensus within the team might improve MDT working. Authors also expressed the view that end-of-life training should be provided to staff.

Based on these findings, the review identified several areas where further research is required. MDT decision-making on the identification of patients who are dying was not the main focus of any of the included papers. For this reason, the actual decision-making process was not described in any detail. This lack of data on the process of decision-making was a prominent issue in the literature. Future research needs to focus on how MDTs actually make prognostic decisions.

Most of the available data were obtained from interviews. Interviews and qualitative analysis of themes can provide in-depth evidence on the decision-making process. However, studies often only reported one side of the decision-making process, and it was not explained how the same process was perceived by other team members. Audio or video recordings of MDT meetings or discussions would provide data on how decisions are actually made between team members as opposed to interviews that only include team members' retrospective perceptions of decision-making. Recordings would allow for in-depth analyses of the internal team communication related to these decisions. One study, investigating MDT meetings in an emergency department using conversation analysis, stressed that future research should pay more attention to the details of these meetings, suggesting that researchers should make more use of video recordings whenever feasible.[77] Audio and video recordings would allow detailed investigation of the decision-making process during MDT discussions as they occur *in situ*.

Doctors and nurses were most often part of the decision-making processes reported in included studies. Future research should include allied and other types of healthcare professionals. A number of studies reporting on how allied healthcare professionals were part of decision-making were excluded from this review, because these decisions were often not directly related to identifying dying patients. However, professionals such as chaplains and social workers, although not professionally trained to recognise the same physical and medical signs of deterioration as doctors and nurses, may bring a different perspective to the identification of dying patients. When clinicians are making prognostic decisions, they collate information that can come from their own observations or from others, and as further information is acquired, clinicians review their decisions.[78] Allied and other types of healthcare professionals may contribute to the overall picture by sharing observations, supporting other staff members, or providing input that adds important details to overall patient care. As guidelines by the European Association for Palliative Care state: '…the complexity of specialist palliative care can only be met by continuous communication and collaboration between the different professions and disciplines in order to provide physical, psychological, social and spiritual support' (Radbruch and Payne, p. 284).[19] Integrating the spectrum of expertise of different individuals into the palliative care plan increases the likelihood that patients are managed in a holistic manner, and it is each professional's individual expertise that *together* enables the broad spectrum of patient welfare.[79] Future research should therefore aim to explore in more detail what role allied and other types of healthcare professionals can have in the decision-making process. The most important element in prognostication is that team members caring for the patient agree that the patient is dying.[80] For this reason, it is important that the whole MDT is included in the decision and that these professionals are included in future research.

The evidence suggests that barriers related to medical authority and power relations might be present. Disagreement between staff members was seen in several excerpts, and in these cases, it was often a doctor who made the final decision and over-ruled other healthcare professionals' judgements. This might have been due to doctors having medical authority and legal accountability for patient care.[81] However, this can be problematic in cases where other staff members have strong opinions about whether or not a patient is dying. Disagreement among team members about prognosis could potentially result in inconsistent patient management and confused communication.[80] There might be a causal relation between disagreement and doctors being sole decision-makers. If team members disagree and cannot reach consensus, then the doctor will have to make a decision. However, because the included data only involved staff members' retrospective accounts, we cannot know for sure how decisions were actually negotiated between members. Usually only one side of the discussion was presented and details of the doctor's rationale for making a decision were not included. Methods such as judgement analysis[82] or the judge-advisor system[83] might be able to map how inputs from different team members are weighted. As previously described, video and audio recordings, as opposed to subjective recalls of decision-making, might also be able to shed light on this issue in future studies.

There is a lack of studies on prognostic decision-making in specialist palliative, community and primary care settings. The results from specialist palliative care settings were inconclusive. However, the finding that nurses, rather than doctors, were reported to be final decision-makers in this setting needs further elaboration and investigation. A greater focus on community and primary care settings would be important for future studies since many patients prefer to die at home,[84] and facilitating home-deaths is included as a recommendation in the World Health Organization's[85] guidelines on palliative care.

Study authors recommended that communication and collaboration should be improved. It was recommended that workflows and communication processes should be restructured to facilitate collaboration and consensus (e.g., through team rounds). A few studies studies have recorded MDT meetings and investigated decision-making using conversation analysis,[77 86] discourse analysis or looked at collaborative communication practices.[87 88] However, these studies did not focus on how prognostication is carried out within MDTs. Thus, future research should be conducted on how MDTs make such prognostic decisions from an interactional point of view. Such studies would be able to inform evidence-based recommendations on how MDT rounds and discussions could be carried out more effectively.

Strengths and limitations

To our knowledge, this is the first review of MDT prognostic decision-making. The search strategy was broad and inclusive, involving multiple databases to identify any potentially relevant papers. An inclusive approach for screening papers was adopted to ensure that relevant papers were not excluded. Screening and data extraction were done in duplicate to add confidence to the robustness of the methods used for study selection.

There are no agreed search terms for the domains covered by this review. This was reflected in the large number of papers found through database searching, and the fact that citation searches yielded a high number of additional papers. These additional studies often focused exclusively on decision-making between doctors and nurses. The latter might also be due to the broad definition of MDTs used for the purpose of this review. We do acknowledge that there are several ways of referring to a healthcare team consisting of more professionals working together. Terms such as 'multidisciplinary', 'interdisciplinary', 'multiprofessional' and 'interprofessional' are commonly used, but there is inconsistency in the way these terms are used within literature.[89 90] However, *multidisciplinary* is most frequently used to describe healthcare teams.[89] A literature review found that regardless of the terminology used in papers, they all referred to the structural composition of the team, where teams are composed of members from a range of professional backgrounds and disciplines.[89] In order to be inclusive, all studies with two or more professionals with different roles or disciplines were included in the review.

Another limitation of this review was a lack of consensus among study authors about the meaning of imminent death. This term and other related ones such as 'end-of-life', 'terminally ill' and 'palliative phase' do not consistently refer to the same time points in the disease trajectory, and there is no agreement about their definition.[91] Studies concerning goals of care for seriously ill or deteriorating patients or whether they should be resuscitated were understood to concern, at least partially, whether or not the patient was imminently dying. If a publication did not clearly define these terms in the title or abstract it was necessary to retrieve the full text for further scrutiny. This resulted in a large number of papers needing to be read through and discussed within the study team to reach consensus about whether or not they met the eligibility criteria.

Several papers were also discussed to reach consensus about whether the reported clinical setting was acute care. In those circumstances where the clinical setting was unclear, an inclusive approach was applied. This meant that papers were included if they reported relevant information on MDT prognostic decision-making despite the clinical setting being described as acute or subacute, as long as this was clearly not identified as ICUs, emergency departments or similar acute care settings.

Papers had to be discussed within the study team when extracting and labelling methods of analysis. Several papers did not clearly report what methods of analysis authors had used. The labels used in the review were based on the descriptions provided in the papers. For this reason and since the review does not include critical appraisal of study methods, it was deemed appropriate to use the label 'general analysis of themes' to capture studies which reported having identified and analysed themes. Moreover, consensus about using the label 'thematic analysis' for studies reporting or referencing a recognisable analytical framework or approach was reached.

The data available on decision-making about identifying imminently dying patients were limited. The relevant data often only represented a few lines of text within the whole paper. Several excerpts had to be extensively discussed within the study team to reach consensus about whether they specifically concerned identification of imminently dying patients and whether the included professionals constituted an MDT.

CONCLUSIONS

Using a systematic scoping of the literature, this review has collated evidence available on MDT prognostic decision-making regarding imminent death. Based on these findings, several gaps in the literature have been identified. There is a preponderance of studies using interviews with staff members, but relatively few directly observing and reporting on the processes occurring in MDT meetings. The findings allowed for the following recommendations to be proposed for future research aiming to investigate this topic: Future studies should consider recording MDT discussions in order to provide deeper insights into MDT decision-making. The role of allied and other types of healthcare professionals in decision-making needs further exploration and more research is needed to understand how MDTs make prognostic decisions in specialist palliative care settings.

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Supplemental File 1: Database search strategy

Database: AMED

Domain	**Search terms**
Palliative population	1. exp Palliative Care/
	2. palliative care.tw
	3. exp Terminal Care/
	4. (terminal* adj2 care).tw
	5. hospices/
	6. hospice care.tw
	7. end stage.tw
	8. late stage.tw
	9. (advanced adj2 disease*).tw
	10. (advanced adj2 illness*).tw
	11. terminal* ill*.tw
	12. end of life.tw
	13. exp Advance directive/
	14. advance* directive*.tw
	15. OR 1-14
MDT	16. multidisciplin*.tw
	17. MDT.tw
	18. interdisciplin*.tw
	19. exp patient care team/
	20. exp “delivery of health care”/
	21. exp interprofessional/
	22. interprofessional.tw
	23. team*.tw
	24. OR 16-23
	25. 15 AND 24
Decision Making	26. exp decision making/
	27. decision*.tw
	28. decid*.tw
	29. exp communication/
	30. collaborat*.tw
	31. OR 26-30
	32. 25 AND 31
Prognosis	33. exp prognosis/
	34. prognos*.tw
	35. surviv*.tw
	36. predict*.tw
	37. mortality/
	38. dying.tw
	39. OR 33-38
	40. 15 AND 25 AND 32 AND 39
Limits	English language

Database: CINAHL

Domain	**Search terms**
Palliative population	1. MH “palliative care+”
	2. TI "palliative care" OR AB "palliative care"
	3. MH "terminal care+"
	4. TI terminal* N2 care OR AB terminal* N2 care
	5. MH "hospices"
	6. TI "hospice care" OR AB "hospice care"
	7. TI "end stage" OR AB "end stage"
	8. TI "late stage" OR AB "late stage"
	9. TI advanced N2 disease OR AB advanced N2 disease
	10. TI advanced N2 illness OR AB advanced N2 illness
	11. TI terminal* ill* OR AB terminal* ill*
	12. TI end of life OR AB end of life
	13. MH "advance directives+"
	14. TI advance* directive* OR AB advance* directive*
	15. **OR 1-14**
MDT	16. MH "multidisciplinary care team+"
	17. TI multidisciplin* OR AB multidisciplin*
	18. TI MDT OR AB MDT
	19. TI interdisciplin* OR AB interdisciplin*
	20. MH "Patient Care Conferences+"
	21. MH "interprofessional relations+"
	22. TI interprofessional OR AB interprofessional
	23. TI team* OR AB team*
	24. **OR 16-23**
	25. **15 AND 24**
Decision making	26. MH "decision making+"
	27. TI decision* OR AB decision*
	28. TI decid* OR AB decid*
	29. MH "decision making, clinical+"
	30. MH "communication+"
	31. TI collaborat* OR AB collaborat*
	32. **OR 26-31**
	33. **25 AND 32**
Prognosis	34. MH “prognosis+”
	35. TI prognos* OR AB prognos*
	36. TI surviv* OR AB surviv*
	37. TI predict* OR AB predict*
	38. MH "mortality"
	39. TI dying OR AB dying
	40. **OR 34-38**
	41. **33 AND 39**
Limits	Language: English

Database: EMBASE

Domain	**Search terms**
Palliative population	1. exp Palliative Care/ 2. palliative care.tw 3. exp Terminal Care/ 4. (terminal* adj2 care).tw 5. hospices/ 6. hospice care.tw 7. end stage.tw 8. late stage.tw 9. (advanced adj2 disease*).tw 10. (advanced adj2 illness*).tw 11. terminal* ill*.tw 12. end of life.tw 13. exp Advance directive/ 14. advance* directive*.tw
	15. OR 1-13
MDT	16. exp multidisciplinary team/ 17. multidisciplin*.tw 18. MDT.tw 19. interdisciplin*.tw 20. exp patient care team/ 21. exp interprofessional/ 22. interprofessional.tw 23. team*.tw
	24. OR 15-22 **25. 14 AND 23**
Decision Making	26. exp decision making/ 27. decision*.tw 28. decid*.tw 29. exp clinical decision making/ 30. exp communication/ 31. collaborat*.tw
	32. OR 25-30 **33. 24 AND 31**
Prognosis	34. exp prognosis/ 35. prognos*.tw 36. surviv*.tw 37. predict*.tw 38. dying/ 39. dying.tw 40. mortality/
	41. OR 33-39 **42. 14 AND 23 AND 31 AND 40**
Limits	English language Humans

Database: MEDLINE

Domain	**Search terms**
Palliative population	1. exp Palliative Care/ 2. palliative care.tw 3. exp Terminal Care/ 4. (terminal* adj2 care).tw 5. hospices/ 6. hospice care.tw 7. end stage.tw 8. late stage.tw 9. (advanced adj2 disease*).tw 10. (advanced adj2 illness*).tw 11. terminal* ill*.tw 12. end of life.tw 13. exp Advance directive/ 14. advance* directive*.tw
	15. OR 1-14
MDT	16. multidisciplin* 17. MDT.tw 18. interdisciplin*.tw 19. exp patient care team/ 20. exp interprofessional/ 21. interprofessional.tw 22. team*.tw
	23. OR 16-22 **24. 15 AND 24**
Decision-making	25. exp decision making/ 26. decision*.tw 27. decid*.tw 28. exp clinical decision making/ 29. exp communication/ 30. collaborat*.tw
	31. OR 25-30 **32. 25 AND 31**
Prognosis	33. exp prognosis/ 34. prognos*.tw 35. surviv*.tw 36. predict*.tw 37. mortality/ 38. dying.tw
	39. OR 33-38 **40. 15 AND 25 AND 32 AND 39**
Limits	English language Humans

Database: PsychINFO

Domain	**Search terms**
Palliative population	1. exp Palliative Care/
	2. palliative care.tw
	3. (terminal* adj2 care).tw
	4. hospice/
	5. hospice care.tw
	6. end stage.tw
	7. late stage.tw
	8. (advanced adj2 disease*).tw
	9. (advanced adj2 illness*).tw
	10. terminal* ill*.tw
	11. end of life.tw
	12. exp Advance directive/
	13. advance* directive*.tw
	14. OR 1-13
MDT	15. multidisciplin*
	16. MDT.tw
	17. exp Interdisciplinary Treatment Approach/
	18. interdisciplin*.tw
	19. exp health care delivery/
	20. interprofessional.tw
	21. exp Teams/
	22. team*.tw
	23. OR 15-22
	24. 15 AND 24
Decision Making	25. exp decision making/
	26. decision*.tw
	27. decid*.tw
	28. exp clinical judgment (not diagnosis)/
	29. exp communication/
	30. collaborat*.tw
	31. OR 25-30
	32. 24 AND 31
Prognosis	33. exp prognosis/
	34. prognos*.tw
	35. surviv*.tw
	36. predict*.tw
	37. dying/
	38. dying.tw
	39. mortality/
	40. OR 33-39
	41. 14 AND 24 AND 32 AND 40
Limits	English language
	Human

Database: Web of Science

Domain	Search terms
Palliative Population	1. TS="palliative care"
	2. TS="terminal care"
	3. TS=(terminal* NEAR/2 care)
	4. TS=hospices
	5. TS="hospice care"
	6. TS="end stage"
	7. TS="late stage"
	8. TS=(advanced NEAR/2 disease*)
	9. TS=(advanced NEAR/2 illness*)
	10. TS=terminal* ill*
	11. TS="end of life"
	12. TS=advance* directive*
	13. **OR 1-12**
MDT	14. TS="multidisciplinary team"
	15. TS=multidisciplin*
	16. TS=MDT
	17. TS=interdisciplin*
	18. TS="patient care team"
	19. TS=interprofessional
	20. TS=team*
	21. **OR 14-20**
	22. **13 AND 21**
Decision Making	23. TS="decision making"
	24. TS=decision*
	25. TS=decid*
	26. TS="clinical decision making"
	27. TS=communication
	28. TS=collaborat*

	29. **OR 23-28**
	30. **22 AND 29**
Prognosis	31. TS=prognos*
	32. TS=surviv*
	33. TS=predict*
	34. TS=dying
	35. TS=mortality
	36. **OR 31-35**
	37. **30 AND 36**
Limits	38. **37 AND LANGUAGE: (English)**

Supplemental File 2: Decision-making excerpts

Decision no.	Author(s) and publication year	Excerpt
D#1	Abu-Ghori et al. 2016	''As nurse[s] we play a very minimal role in decisionmaking as a 'No Code' [DNACPR]. But nurses also can contribute factors like nutrition, family support, psychological and physical condition, emotional condition of the patient when they discuss about 'No Code'. But here in the hospital, no doctor will ask the nurse's opinion before taking a decision. May [be] [because] lot of western and foreign nurses [are] working in this country, and language is a barrier.'' (RJ 03)
D#2	Andersson et al. 2018	"FG1-a: . . . we [RNs] didn't think it was that sort of situation [EOL care] yet. // It almost felt as if it was a demand [from the ENs], that the resident should actually be put on the LCP, even though we didn't think she fulfilled the criteria at that time." (RNs)
D#3		"You hear that someone's a bit worse, then you take the question to the responsible nurse and maybe the doctor, that it's time to put them on the LCP, and this at least brings up the discussion a bit earlier than before, I think." (RNs)
D#4		"No, I've also done that, when you have someone at the end of the week that you feel like, mm, well, you know, that we said if this happens, if it continues, so to speak, then they may proceed, start the LCP during the weekend and I'll sign the paper afterwards." (GPs)
D#5	Bern-Klug et al. 2004	The physicians noted their reliance and dependence on the nursing staff to keep them apprised of pain levels and physiologic status, usually by phone. When the staff did not know the residents, the physician did not get consistent information, as noted by one physician, "It's very disconcerting when one shift says that a patient is very comfortable and is not suffering physical pain and is not alert and you have another shift telling you that they've been having to give Roxanol [morphine] every hour and the person is still agitated and uncomfortable." Another physician stated, "If the nursing staff is turning over rapidly, there's not a CNA [certified nurse assistant] bond with the patient . . . then I don't get good feedback on the patient's end-of-life needs because the staff doesn't know the patient."
D#6	Bloomer et al. 2013	During observation, it became apparent that recognition of dying was difficult, that is, nurses had difficulty differentiating between an acutely ill patient and a dying patient, most often deferring to, or waiting for, medical staff to make the distinction. … This demonstrated that some nurses may have an opinion that a patient was dying, or a sense that they were not responsive to rehabilitative care, but in the absence of a decision from a medical officer, acute resuscitative care often continued, and in one case, this caused distress to nursing staff after a patient's death.
D#7		Focus group participants shared a frustration towards the 'system' and 'practices' that made care more challenging. Even when nurses acknowledged dying, acute care often continued until a medical officer confirmed this, often reluctantly:

		“The doctors don’t want to make those decisions on the weekends, they won’t do it ... but we need to make sure that, at least, we get some NFR [not for resuscitation] orders before the weekend, because the docs on the weekends won’t talk to families about dying and won’t make them palliative.” (Focus Group) “It’s hard to get through to the young doctors what is needed.” (Focus Group)
D#8	Bloomer et al. 2018	“If the nurse feels that that’s happening more rapidly than is being recognised, they would always discuss it with me or the senior nurses … and they would always take it to the doctor … but they’re looking for support. And so I think communication around patient handover is very open and it’s a place where we ask lots of questions.” (Int. 2, Registered Nurse)
D#9		“We sometimes find ourselves in a grey zone … when the patient’s not on the pathway yet but the team are saying, ‘Yeah, yeah. They’re probably end of life. They’re probably, you know, dying. They’re not for MET calls. They’re not for ICU admission’. But then we still get referred to make these decisions about eating and drinking.” (Int. 4, Speech Pathologist)
D#10	Bloomer et al. 2019	Medical entry “Clarification of goals of care. Goals: Comfort care ± end of life care. Poor prognosis given severe ischaemic cardiomyopathy and likely recent peritonitis (recent cardiogenic shock). Plan clarified with[doctor] with input from [nurse]. . . family updated.” (Case 23)
D#11	Borbasi et al. 2005	… Most participants felt referral was rare *“Patients have to be knocking on death's door with their lungs filled with fluid before the palliative care team is called*” (BC2). When referral does occur it was often too late to improve the quality of end-of life care: “*Palliative care is not thought of early enough and it is the nurses' responsibility to broach the subject with the* MOs [medical officers] - *many older* MOs *don't think about palliative care because 'it's not in their psyche'*.” (BC3)
D#12	Bostanci et al. 2015	Insights into the clinical status of patients by allied health staff did sometimes inform medical decision making. For example, when a physiotherapist noted that patient P-8 was ‘very fatigued’ and ‘liaised w[ith] medical staff about p[atien]t’s deteriorating physical status’, doctors discussed the deterioration with the patient’s daughter explaining that, if no reversible cause could be found, this may lead them to ‘consider a palliative approach’.
D#13		The existence of a decision hierarchy in health care was evident across all cancer groups. Actions related to care of patients were generally initiated by a health professional and ultimately required authorisation by a medical doctor, particularly if an alteration in care direction was signalled.
D#14		Potentially important insights into patient status and patient goals by other members of the care team, in particular allied health staff, were rarely taken into account in decisions of the medical team.
D#15	Caswell et al. 2015	Each of the wards had daily multi-disciplinary team meetings at which patients and plans for their care were discussed. Not all members of staff could be present at these meetings, and nurses described how they needed to read the medical notes of the patients for whom they were responsible on any given shift, so that they could be sure of what care and treatment was to be provided.
D#16	Chuang et al. 2017	While most PAs endorsed an active role, several felt that the attending should lead and manage these communications.

		"… the attendings are in charge of the patient care, ultimately. We don't make the final decisions. So I don't think it should be considered the PAs' responsibility to initiate the goals of discussion. I think it should come from the attending. We can definitely follow-up …If anything, I do it on a daily basis, but it's just like out of respect." [F/G3/≥10Y]
D#17	Clark et al. 2012	"I have found that when we've tried, sometimes to get the patients started on it, that's when the problems start with getting doctors to actually commit, to a name on the forms. Whereas, before the LCP if you asked for a patient to be made 'comfortable' they seemed to have less hang-ups about it." NFG, Pg1
D#18		The complex and necessary tension around continuing to treat and/or recognizing dying was commented on by all professional groups. Nurses' role in questioning the direction of care was described positively by a consultant. "It's quite a traditional tension in some ways, I think the nurses have to try and keep the doctors realistic and point out things. We tend to press on, and the nursing staff say 'do you really think this is appropriate,' and certainly a little more pressure for the patient to go on the pathway—and I might say ;no, not yet'." MFG, p10
D#19	Costello 2001	The data from both interview and observation in this study highlight the way in which nurses' decisions about dying patients were intimately connected to directives from physicians.
D#20		Nurses reported that their key role was to keep the patient comfortable and pain free. …, nurses sought support from doctors in prescribing medication and reporting any signs of distress. Physicians considered their role in terminal care to be decision-making…
D#21		… the imposition of DNR orders was not always based on a consensus opinion, although there was no evidence of nurses openly challenging medical decisions. Although physicians did write DNR instructions in the patients' medical notes, more detailed analysis revealed that in a number of instances nurses put pressure on doctors to make these orders. Nurses used similar strategies [informal covert decisions] to increase or decrease medication by making deference to the doctor explicit, but also clarifying informally that it is in the patient's best interests. When doctors ignored such strategies, nurses would express their feelings, by being passively aggressive, adopting go slow strategies or through non co-operation…
D#22	Dee et al. 2011	However, there was a suggestion that some nursing staff may feel that their opinions are not considered, which could be a frustration and could sometimes prove to be a barrier to the implementation of the LCP. "The doctors go in for a short period and maybe for that period the patient is able to say 'this is fine' but then you go and move somebody and you know that they're in excruciating pain." (Nurse 4, patient not on LCP)
D#23		"I did feel that he was dying, it was just wasted because I had to wait until people [other clinicians] thought he was dying as well." (Nurse 5, patient not on LCP) Although the level of experience could possibly increase the accuracy of prognostication, it involved frustrations that could be barriers. This was because, although the clinicians were sure the patient was dying, they had no evidence with which to back up the judgment.

D#24		"So I was waiting for him to wake up so that I could assess what was going on. And then he had 1 mg of Lorazepam. There was no explanation anywhere in the notes as to why. The nursing staff had gone off duty, hadn't passed it on to the next team and so I had no idea why he'd had this extra mg of Lorazepam." (Doctor 5, patient not on the LCP) This communication failure resulted in the pathway not being implemented because the reason for the patient's drowsiness was not known. The rationale for giving the medication was required to ensure that this was the appropriate way forward.
D#25	Freemantle et al. 2012	"On his last day we wheeled him outside, it was a really lovely day . . .after a couple of hours he took a turn for the worse, he wasn't responding to us and the nurse looking after him, she was ringing the registrar saying, 'Can we get him on the Pathway? Or can you at least come and see him because he has taken a turn for the worse? And they wouldn't come and see him." (Nurse: moderately experienced)
D#26		Although both junior doctors and nurses saw themselves as separate teams, intra- and inter-professional collaboration was evident. With the exception of one inexperienced nurse, all nurses appeared to be proactive in recognising dying and prompting the doctors to ask for guidance in decision making. This approach was accepted positively by the doctors: "They're obviously very experienced with oncology patients and they realise these decisions need to be made and they'll prompt us as juniors to approach the seniors about that." (Doctor: moderately experienced)
D#27		A perception of inconsistency amongst consultant staff in approach to recognising the dying phase and implementation of care supported by the LCP resulted in situations where end-of-life decision making was delayed: "If the consultant is not around, people aren't willing to make decisions, so we delay, waiting for a decision from a consultant." (Nurse: moderately experienced)
D#28	Fryer et al. 2016	Indeed, participants recounted several stories of occasions when their concerns about dying residents had been largely ignored by more senior staff, typically the Registered Nurse on duty at the Facility. On most of these occasions, this refusal to listen to HCAs' concerns resulted in significant negative repercussions. For example, the following excerpt highlights how the refusal of the trained nurse to take into account the HCAs' knowledge and experience resulted in a poor outcome for the resident, the relatives and the staff: "HCA 2 'We spend a lot of time with them [residents]; sometimes the RN's just don't listen. And you think, they are dying and you can just tell… just deteriorating. HCA 4 [Resident], she had pneumonia in the end I think. She was just getting weaker and weaker and not talking. I said to [RN], you better call the family, but she didn't. She [resident] died, and the family came in and got very upset with her because they expected to know. She should have called the family. HCA 5 It was a bad mistake HCA 1 You could tell with her breathing

		HCA 5 We work with them [residents] all the time you know, and sort of know, we pick up things what's wrong with them then go and tell them [RN's] then it's up to them, it's not up to us. HCA 2 They think, oh you're just a caregiver; you don't know what's happening, but we're with them every day." (Focus Group 2)
D#29	Gambles et al. 2006	There was evidence that nurses have much more influence over the diagnosis of dying and the decision to commence a pathway in this environment: "The good thing as well is …here the nurse would start a pathway. That is a very good thing … It doesn't necessarily have to be the doctor… here most of the medication would be prescribed anyway … you don't have to convince the doctors that somebody is dying …so you don't have to argue." [doctor 1]
D#30	Gidwani et al. 2017	However, the most serious concern expressed was that inpatient PC teams only see cancer patients at their most severe stage, leading them to believe that all cancer patients in the same stage of illness are similarly ill. For example, oncologists noted situations in which patients with Stage IV cancer were admitted to the hospital for pneumonia and received a hospitalist-activated PC consult, resulting in the PC physician telling the patient that he was going to die and switching him from antineoplastic treatment to comfort care. This posed concerns for oncologists, both because they felt they would be able to extend patient survival by treating the pneumonia and because it created problems in communicating with patients and families. One oncologist noted about PC physicians: ''They don't understand that a cancer patient can look really crappy but not be on death's door; it's the side effects of chemo or they have a kind of cancer that's going to respond really well. [Palliative care physicians have] told people they were going to die that aren't even dying, and then it's this whole awful backpedaling and making us look bad. It's just ridiculous. We've had a lot of meetings with them, trying to explain this, and now they have a rule where they're supposed to call us first but it doesn't always happen. I don't expect them to understand oncology and to understand what diseases might really turn around with treatment, but it's done a lot of damage, actually, between our relationship with our patients.''
D#31		With respect to prognosis, oncologists reported that they and the PC specialists often had different views for the same patient. Compounding the problem was that each discipline was unaware of the other's differing prognosis. This resulted in mixed messages given to the patient about prognosis and/or treatment options. Disparate prognoses across PC physicians and oncologists were perceived as linked to the largely inpatient nature of PC. Oncologists noted that PC physicians only saw those cancer patients who were the most ill—hence their admission into the hospital—and this colored their perception of all patients in that same cancer stage.
D#32	Glogowska et al. 2016	The HCPs' accounts also provided examples where they perceived the necessary discussions had not taken place and where patients in advanced heart failure had been aggressively treated for infections, instead of receiving palliative support:

		"I …thought this patient is dying …so I spoke to the consultant and said can you make this patient not for resus[citation] …his opinion was you've got to get better, you've got to fight this illness …I said to the patient I think your symptoms are quite a lot, you 're quite nauseous because I can tell by your, the way that you 're acting. He said I feel really really sick. So I called palliative care in and he did die …he had a false message, so I was trying to take it down the palliative route because I thought that was appropriate …but the clinician wanted to treat an infection …" [P20, community specialist heart failure nurse]
D#33		There was concern that lack of communication had consequences for choosing appropriate treatment and care: "We had a situation with a patient who was end stage and we said to the doctor straight away this chap's end stage …shouldn't we be thinking palliative should get involved, and they treated him for cellulitis, and said no, no we're going to treat him for that …you could see this chap was dying, going to die in hospital if somebody didn't do something …nobody's making the decisions here, the doctors are leaving it up to the patient, the patient is unwell, confused and can't make that decision for himself …It was really frustrating and I think that happens a lot." [P14, hospital specialist heart failure nurse]
D#34		However, in location 2, the uncertain course of heart failure made it difficult to judge when to put in place palliative care support, which could be offered on a time-limited basis only: "…the difficulty with end of life care and heart failure is the unpredictability of the time scale and so getting palliative care services involved and the sort of end of life package which you can get, which is very intensive and very good, is only for a short amount of time, and if you think they might live longer than that…they're probably saying well it's too soon for us to get involved…" [P12, hospital specialist heart failure nurse]
D#35	Gott et al. 2011	A critical first step in this process was seen to be communication within the hospital setting and, in particular, reaching a consensus among all clinicians involved in a patient's care that a palliative approach was now appropriate. The opinion and approach to treatment of the consultant was seen to be pivotal in this respect: "You've got to have some sort of consensus though about how you're going to treat the patient . . . and sometimes I think what happens in a hospital is that the consultant is seen as the be all and end all so their decision is what decides it, whereas actually you need to reach a decree amongst a number of people." (Secondary care, location 1, geriatric specialist registrar)
D#36		Problems of power within the professional hierarchy of the hospital were discussed within this context, both between medicine and nursing, and within medicine itself. The need for nursing staff to be provided with opportunities to raise their concerns about the approach being taken to a patient's care was identified: "I think maybe that point when the nurses start triggering and saying 'why are we doing this?' it would be nice for them to be able to, I don't know, circumvent or put up a flag so that somebody else gets involved, or some kind of mediator. Because I get a lot of nursing staff telling me 'why are we doing this? Why do you keep doing this?' And I say 'why didn't you ask yesterday when the consultant was coming round because it would be really nice for you to ask somebody more

		senior than myself what their intentions are in the situation.' But it's well 'you're here now, why aren't you doing something?' But actually I am, I'm following the plan that I have available to me and I can question it but I'm still not going to change that unless obviously something significant happens and it's an acute deterioration but I still feel there's a lot of . . . I don't know, stresses in the system." (Secondary care, location 1, geriatric specialist registrar)
D#37	Hanson et al. 2002	Physicians and nurses felt a need for shared communication to facilitate treatment decisions when a resident was dying. Nurses expressed frustration with the limited time and involvement of physicians, yet also expressed pride in their ability to judge clinical situations, report them by telephone, and get the orders they needed to give good care to dying residents. Physicians acknowledged their own unwillingness to spend more time in nursing homes, and their need to rely on nurses' skills. A physician described his dependence on nurses' assessments: "Whenever the patient isn't doing well and it looks like we will be dealing with a death, then the first thing I do is go to the nurses and say what do we know? I usually make it their job to do the scouting. It is less threatening for the nurse to act before I come on the scene."
D#38	Hill et al. 2018	Participants responsible for initiating palliative care used their experience and professional judgment to determine when palliative care was best initiated. Most said the assessments were based on common sense. One participant explained "When they're done, they're done. We just know." (Registered Practical Nurse). Usually, when a resident with dementia stopped eating and drinking, the RN made the decision to contact the physician and request that the resident be designated palliative. They also made assessments based on abnormal vital signs and uncharacteristic and distressing resident behaviors.
D#39		Nurses indicated that they did not have enough communication with physicians who were prescribing drugs and designating residents as palliative. Physicians were responsible for different long-term care homes and cared for many residents. Others such as social workers, chaplains, and recreation therapists also felt excluded at times. Additionally, staff at homes with no formal palliative care committee expressed frustration in making end-of-life decisions with no protocol to guide them and no one willing to lead in decision-making.
D#40	Hockley et al. 2005	Prior to the study there was a lack of confidence in some of the nurses' ability to take responsibility to initiate what was necessary for their residents' end-of-life care — whether this was talking to relatives, ensuring that there were drugs for distressing symptoms, or informing other staff in the nursing home that a resident was now dying. Often this was because it was seen as the GP's position to diagnose dying. However, in the majority of situations it was the nurse and, indeed, the carers who knew the resident and the family the best and were therefore able to contribute to the knowledge that someone was dying. "I think before it was more or less the doctors who decided. Now I feel the carers are as much involved." [KC1. NH.E, final evaluation: para. 49]
D#41		What was important about the ICP documentation was that it encouraged a joint decision to be made around the diagnosis of dying. The nurses' critical part, along with the ward team and resident/family, in initiating that process was

		being recognised by staff. It was encouraging to see nurses more accountable in this area of care and the recognition of this shift by nursing home managers. "We are taking a bit more responsibility….I think it has raised the standard of care of the dying." [NHM. NH.D, final evaluation: para. 53] "I think the trained staff . . . there is this real ability for them to be more in control . . . they feel that their professional opinions are being much more respected." [NHM. NH.E, interview: para. 79]
D#42		"I think from the carers' point of view that we are more involved with recognising different stages in the dying . . . and work together . . . much, much more aware of the whole dying process. And I feel more involved, . . ." [CA6. NH.B, final evaluation: para. 82]
D#43		"If one of the carers comes and says he sounds a bit funny, you know you won't say 'Well, they always sound a bit funny when they are dying.' You say, 'Well, OK, we'll go and have a look at them.' You know so you're getting all the information from everybody and you're acting on what you are getting. . . I think it's been really good." [SN. NH.A, final evaluation: para. 174]
D#44	Johnson et al. 2014	Senior Nurse Helen pointed out how sometimes you know people are near the end whether or not they meet the LCP criteria: "One lady that died had lung cancer and I wanted to do…I wanted the drugs and he (GP) came out to see her but she didn't meet any of the criteria. You know, she was talking, she was sat up but you know on intuition: you just know don't you? And after being a nurse for some time you do get to know and I went, 'No, I really want pathway drugs for this lady'." (Helen, Senior Nurse) The GP was cautious, but came the day after and realising the woman was in pain prescribed diamorphine. He could see what Helen could see and that the weekend would be difficult for the lady without sedation.
D#45	Lai et al. 2018	Although nurses were seldom involved in judging the end-of-life stage or dying phase, they instinctively provided more care to patients at the end-of-life stage
D#46	Lemos Dekker et al. 2018	Further, the uncertain trajectory of dementia makes it difficult to establish exactly when to initiate an LCP: "Sometimes we think yes, and the doctor doesn't think so. And then you start it, and then you can stop it. We once had a woman for whom it [the LCP] started three times. How then to explain to the family that this time it's for real? And so the fourth time we were, like, let's wait a bit. But then we were too late." (Nursing staff)
D#47	Näppä et al. 2014	In these stories, the nurses observed that the patients were in a poor condition and questioned the physicians about the appropriateness of the PCT. The physicians disagreed with the nurses and ordered the nurses to give the PCT as prescribed. According to the nurses, the PCT had dire consequences for patients who might have survived or been spared

		from suffering if the physicians had listened. For example, Nurse Ingrid, who had not met the patient before, explained her situation as follows: “And when I saw the patient, my first thought was that this patient is in such terribly bad shape; so haggard […] his skin was ashen grey, he had difficulty breathing. […] It just felt wrong to give the PCT. But when the doctor came, who had met the patient before, his assessment was, ‘Ah, it's alright’. So the treatment was given anyway. […] The patient died that evening after the PCT.” Ingrid concluded her story with this reflection: “It doesn't feel right to have given the PCT, but, at the same time, in this particular case, I did say what I thought beforehand. And then it's someone else above you who makes the decision.”
D#48	Nouvet et al. 2016	Several nurses recalled critical incidents in which health care team efforts to ‘do everything’ for a particular seriously ill patient collided with their ideal of care for that patient. One participant grew emotional as she remembered a particular case: “[T]his woman just wanted to pass away but we were just treating her and treating her and treating her to an extent that I think was more than what the situation called for. But the attending was just like, ‘No, we’re going to treat her symptoms.’ ‘Why not just make her palliative?’ ‘Well, we’re not at that stage yet.’ She [the attending physician] didn’t give me a clear rationale of why we were still treating her other than just symptom management right now. What’s the point of symptom management when she doesn’t even want a scope? Why are we still giving her lots and lots of blood products? That’s all she said. I never got a clear understanding of why we were still treating her. And I had said to her [the attending], ‘She doesn’t want to eat. She doesn’t want to drink. She just wants to be comfortable.’ [The attending] said, ‘Well, we’re going to treat her for now.” (Nurse)
D#49	Oliveira et al. 2016	Caring for patients in their final days of life was both an emotional and physical drain for the nurses. Ann explained, “We see it a lot . . . we still treat aggressively and that’s very demoralizing for nurses. To treat aggressively when we, through experience, or intuition, or just by knowledge of our training, we know that we’re battling a no-win battle. It’s like professional judgment of that has been removed and we’re not allowed . . . to make that decision . . . it’s a real emotional drain and strain and struggle.”
D#50		Communication was essential for teamwork and was integral in establishing the goals of care. However, nurses, who possessed intimate knowledge of patient care, were often not present at planned family meetings, either because they were not being invited or were unable to attend because their presence was required at the bedside. This was a significant barrier to communication and advocating for patients because it was often at these key meetings where the decision to move from aggressive curative goals to palliative care would be made.

D#51		One of the challenges in transitioning patients to an EOL plan of care was the layers of reporting structures within the physician medical team. As part of a teaching hospital system, patients on the medical unit were assigned to the care of a resident or medical student. Nurses were expected to report their concerns to the resident/medical student in charge of the patient's care; however, whether or not these concerns were relayed to the staff physician was left to the discretion of the residents/medical students assigned to the patient. Ultimately, the approval of the plan of care fell under the responsibility of the staff physician.
D#52		In an effort to challenge the appropriateness of the curative-focused plan of care, participants would align themselves with other health care professionals (HCPs) who would act as allies in trying to force a medical decision regarding goals of care. Registered respiratory therapists (RRTs) and the PCCS were identified by more than one participant as sources of support in prompting goals of care discussions.
D#53	Petterson et al. 2014	One nurse mentioned that it was always the physician who made the final decision and had the strongest arguments if there were disagreements on DNR orders because physicians have the most medical skills. But the nurse also emphasized the need for another type of skill: "An informal skill, I would say, that nurses have. Which they develop by being very close to a patient for a very long time." (Nurse 8)
D#54	Pettersson et al. 2020	Also, whether the team was involved in the decision or not varied, depending on the routines at the ward at stake. "I have experienced that the physicians asked for my opinion and I really appreciate that. But, it could be done more frequently!" (Nurse164, hematology) "If the nurse knows the patient better, the nurse's input can be valuable." (Physician 132, oncology)
D#55	Pontin et al. 2011	"So I think that is why nurses are much better at prognosticating than doctors because we are seeing an absolute snapshot and sometimes that is useful because you can come back and say that's a really dramatic change in 24 hours. And maybe that isn't apparent to the nurses who just, just keep doing things but often it is the nurse who says 'well actually the last time they could mobilize to the bathroom and now they can't'." (spr001319)
D#56	Prompahakul et al. 2021	Among the healthcare team, nurses perceived themselves as having little power in decisions about treatment. In many cases, participants knew the right thing to do for patients; however, they could not take action because nurses lack practice and independence to act. For example, six participants expressed that they knew that specialists from other departments such as palliative care should have been involved in a patient's care but that consulting the palliative care team was not their role and depended on the doctor's decision: "... ... Anyway, we need the doctors to sign on the consult form. The consultation needed an agreement from the doctors. If they don't agree, we couldn't consult. The patient would be treated aggressively. We are under them, we depended on them. Our profession was sometimes controlled by others." (N16)

D#57		Poor communication and collaboration impacted the quality of patient care in that nurses felt they were excluded as members of the team and could not communicate with patients and families sometimes because they were not sure about the goals of care: “The collaboration among the team wasn’t bad but it wasn’t good as it should be. We [nurses and doctors] had less discussion. We [nurses] were trying to be a part of team. We joined the morning medical rounds to know the goal and plan of each patient. But when they placed orders, they were totally different from what they had discussed during rounds. They changed the plan without informing us. They might feel that they don’t need to tell us. When the patient asked us about the plan, I could just tell him to discuss it with the doctors. I know I should not say that but I wasn’t really sure about the plan.” (N15)
D#58	Reid et al. 2015	Medical and nursing staff had different opinions in terms of who should make the diagnosis of dying. Medical staff thought the nursing staff were first to raise the possibility that a patient might be dying, perhaps because they spent more time closely observing patients, but nurses looked to the medical team for confirmation. “Um it’s still difficult, because we know that patients are coming in, you know, are admitted, and er there’s a good chance sometimes that they might die on the admission, but it is difficult for us to know when to pick up this document [the EOL tool] and start. Because you take the lead really from the doctors.” (Interview 4)
D#59		Junior doctors and nursing staff described needing validation of the diagnosis of dying by the senior medical staff (usually the consultant), and thus asked for this confirmation on the ward round. However, senior staff felt that they did not see patients frequently enough to be confident about diagnosing dying.
D#60	Ryan et al. 2012	One team noted how their experiences led them to believe that sound collaborative working between professions and consulting other ‘specialists’ in the field of dementia care had helped to facilitate transitions to palliative care: “I’ve got three people on the caseload at the moment that I think really are dying and it’s purely as a result of dementia…. The doctors have wrestled quite a lot with that and they’re really experienced geriatricians we’ve got on our team and each of those cases we sought a second opinion from a psychiatrist but also from another geriatrician as well to say ‘what do you think?’.” (Acute Hospital FG)
D#61	Standing et al. 2020	Feeling dismissed and downgraded by professional colleagues was particularly prevalent within the accounts of care home staff, who felt their professional status and expertise were afforded less value than that of other health care and social care professionals. Indeed, during the course of data collection care homes were repeatedly highlighted by other professional groups as a perceived weak link in end-of-life care, who inappropriately called on out-of-hours doctors and ambulance services against patient’s wishes. [...] “the care homes are absolutely petrified of litigation. They will call us for any change. Then you think, “Well, you have called me. The healthcare plan says, ‘Keep comfortable.’ […] She is breathing heavily but she is quite comfortable. What do

		you want me to do?"[…] they will be incredibly risk averse or they will expect us to make the decisions, but we haven't got that information." (out-of hours GP2) It was suggested that this fear of litigation meant care home staff were paralyzed when dealing with patients at the end of-life resulting in them abdicating the responsibility for decision making to other professional groups increasing the burden on other services who themselves may not necessarily be better placed to take on such responsibilities.
D#62	Strachan et al. 2018	Nursing surveillance during patient care positioned them to notice and alert the healthcare team, essentially 'raising the red flag' to the need for communication. Specifically, in response to cues about a decline in the patient's condition, and recognizing that communication and decision-making could be urgently needed in advance of crisis, nurses prompted other team members to the need for goals of care discussions and decision-making conversations that they anticipated would be imminently required to inform their interventions. A common scenario was described: "They're not as responsive to us anymore, their appetite has decreased and they're not swallowing well. They're just sleeping more and more. And I often ask (the physician) 'What's the plan for this patient?'." (Nurse, P10)
D#63		Even with this advocacy from nurses, it was not uncommon for discussions about life-sustaining interventions to be delayed until physicians agreed that death might not be avoided in the short term. "I had a patient who was very ill and she was still full resuscitation code and I started to see that she was really deteriorating and struggling with the treatment and not in a lot of comfort… I actually talked to the (medical) residents quite a few times saying 'I really don't think she's coming out of this. Is it time to talk about her level (of care)?' and they said 'No, I think we can fix this." (Nurse, P1)
D#64	Tan et al. 2014	A number of people may be first to recognize the approach of the final phase of life. "Nurses often recognise it first being with the patients 24=7' […] The decision to formally engage the 'Care of the Dying Pathway' for treatment is a medical one. This can be problematic, resulting in delays." "You can see that someone's got maybe two or three days but when you go to the registrar they won't do anything because they are waiting for the consultant who comes on Friday. By Friday the person may have only three or four hours. It can be very distressing because you can see clearly that the person needs different treatment . . . It is all very dependent upon the time of day, who's on call and personalities between us. Weekends are particularly difficult." (Group 2)
D#65	Travis et al. 2005	According to these teams, sharing observations occurs at several levels and uses a hierarchical order of consensus building. First, when a team member gets a gut feeling, he or she shares it with other team members. If others also see a change, there is an informal brainstorming session within a shift and then a more formal session across shifts. If a pattern emerges and a more comprehensive assessment of the person's condition and behaviors confirms a change (often very subtle), the physician is notified. If there is a possibility that the change is reversible (recall that one team told us 'most things can be reversed'), appropriate orders are requested. If everyone agrees that changes in the person's condition are consistent with

		irreversible terminal decline, [the physician has a highly visible and intense role in discussing options with the resident, if possible, or the responsible family members.]
D#66	Wallerstedt et al. 2007	The nurses' assessments and reports often constituted the basis for the doctors' decisions and orders. They also described how they had to assume the responsibility for the doctors becoming involved in the care of the dying. It was assumed that the nurses could act independently, but they said their responsibility did not seem so overwhelming if they could share it among themselves. "That the way we treat patients, the way I act toward the patient is of such tremendous importance and can have such lasting effects. That my actions, my words can have such a lasting effect both on relatives and on the patient. That's quite a heavy responsibility. What I'm responsible for is really the nursing care. Then there's the medical care and orders and that's the doctor's responsibility. But in some way I have to be responsible that the doctor does that."
D#67	Willard et al. 2006	Some of these issues are highlighted in the following interview extract, where a CNS describes how she and the consultant differed in their perception of a situation concerning a very ill patient with dysphagia, and the most ethical course of action: "The consultant felt as though he couldn't let her die in that way, so I just said I thought she was dying, and it isn't pleasant having a feeding tube put in, they don't always work, there are complications and the risk of having all that for the outcome, I didn't feel that it was justified. He could understand where I was coming from and it did make him think about it, but he still was saying well you know we should give it a go." (Interview: palliative care CNS)