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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

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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.

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- 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]

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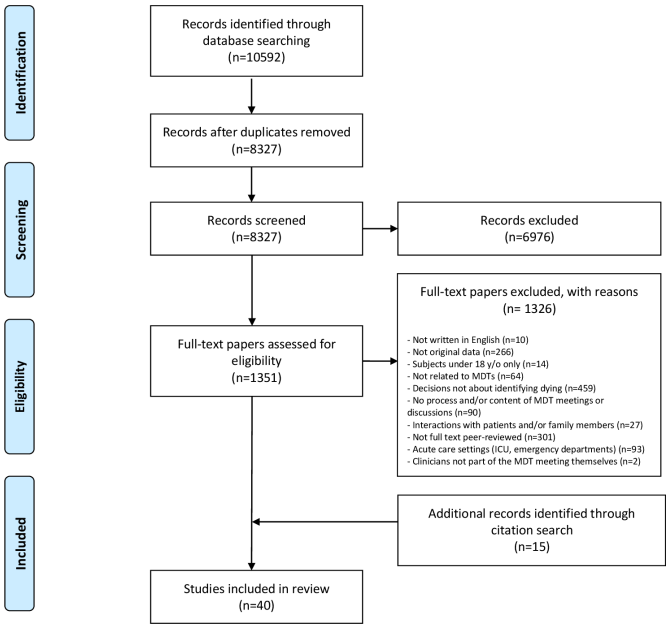

Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram of study selection.

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.

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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

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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 *Inpatients on medical, surgical and ICUs*	34 PAs
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) *Older (dying) patients*	29 qualified nurses, 8 physicians (2 consultants, 2 registrars and 4 senior house officers)
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 *Cancer patients*	31 oncologists (9 in community, 11 in AMCs, 9 in VAs and 2 in administrative roles)
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 *Severe or difficult to manage heart failure patients*	7 GPs in primary care, 12 doctors and nurses in secondary care and 5 nurses in community care
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

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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

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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

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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.

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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 Pathway usage Eating and drinking	Evidence for information-sharing
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 Pathway usage	Evidence for joint decision-making
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

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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

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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.

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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

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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

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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

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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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REFERENCES

1 General Medical Council. *Treatment and care towards the end of life: good practice in decision making*. United Kingdom, 2010: 1–84.
2 Chu C, White N, Stone P. Prognostication in palliative care. *Clin Med* 2019;19:306–10.
3 Leadership Alliance for the Care of Dying People. *One chance to get it right. Improving people's experience of care in the last few days and hours of life*, 2014.
4 Adams E, Boulton M, Watson E. The information needs of partners and family members of cancer patients: a systematic literature review. *Patient Educ Couns* 2009;77:179–86.
5 Degner LF, Kristjanson LJ, Bowman D, *et al*. Information needs and decisional preferences in women with breast cancer. *JAMA* 1997;277:1485–92.
6 Kirk P, Kirk I, Kristjanson LJ. What do patients receiving palliative care for cancer and their families want to be told? A Canadian and Australian qualitative study. *BMJ* 2004;328:1343.
7 Kutner JS, Steiner JF, Corbett KK, *et al*. Information needs in terminal illness. *Soc Sci Med* 1999;48:1341–52.
8 Steinhauser KE, Christakis NA, Clipp EC, *et al*. Factors considered important at the end of life by patients, family, physicians, and other care providers. *JAMA* 2000;284:2476–82.
9 Steinhauser KE, Christakis NA, Clipp EC, *et al*. Preparing for the end of life: preferences of patients, families, physicians, and other care providers. *J Pain Symptom Manage* 2001;22:727–37.
10 Pontin D, Jordan N. Issues in prognostication for hospital specialist palliative care doctors and nurses: a qualitative inquiry. *Palliat Med* 2013;27:165–71.
11 Glare P, Virik K, Jones M, *et al*. A systematic review of physicians' survival predictions in terminally ill cancer patients. *BMJ* 2003;327:195–8.
12 Gwilliam B, Keeley V, Todd C, *et al*. Prognosticating in patients with advanced cancer--observational study comparing the accuracy of clinicians' and patients' estimates of survival. *Ann Oncol* 2013;24:482–8.
13 White N, Reid F, Harris A, *et al*. A systematic review of predictions of survival in palliative care: how accurate are clinicians and who are the experts? *PLoS One* 2016;11:e0161407.
14 Christakis NA, Lamont EB. Extent and determinants of error in doctors' prognoses in terminally ill patients: prospective cohort study. *BMJ* 2000;320:469–72.
15 Maltoni M, Caraceni A, Brunelli C, *et al*. Prognostic factors in advanced cancer patients: evidence-based clinical recommendations--a study by the Steering Committee of the European Association for Palliative Care. *J Clin Oncol* 2005;23:6240–8.
16 Kee F, Owen T, Leathem R. Offering a prognosis in lung cancer: when is a team of experts an expert team? *J Epidemiol Community Health* 2007;61:308–13.
17 Gwilliam B, Keeley V, Todd C, *et al*. Development of prognosis in palliative care study (PIPs) predictor models to improve prognostication in advanced cancer: prospective cohort study. *BMJ* 2011;343:d4920.
18 Chu C, Anderson R, White N, *et al*. Prognosticating for adult patients with advanced incurable cancer: a needed oncologist skill. *Curr Treat Options Oncol* 2020;21:5.
19 Radbruch L, Payne SA. White paper on standards and norms for hospice and palliative care in Europe: Part 1. *European Journal of Palliative Care* 2009;16:278–89.
20 Ruhstaller T, Roe H, Thürlimann B, *et al*. The multidisciplinary meeting: an indispensable aid to communication between different Specialities. *Eur J Cancer* 2006;42:2459–62.
21 NHS National End of Life Care Programme. *Optimising the role and value of the interdisciplinary team: providing person-centred end of life care*. UK, 2013: 1–47.
22 Taylor C, Munro AJ, Glynne-Jones R, *et al*. Multidisciplinary team working in cancer: what is the evidence? *BMJ* 2010;340:c951.
23 NHS Digital. Nhs business definitions: multidisciplinary team meeting, 2020. Available: https://www.datadictionary.nhs.uk/data_dictionary/nhs_business_definitions/m/multidisciplinary_team_meeting_de.asp?shownav=1 [Accessed 12 Aug 2020].
24 Ke KM, Blazeby JM, Strong S, *et al*. Are multidisciplinary teams in secondary care cost-effective? A systematic review of the literature. *Cost Eff Resour Alloc* 2013;11:7.
25 Vissers KCP, van den Brand MWM, Jacobs J, *et al*. Palliative medicine update: a multidisciplinary approach. *Pain Pract* 2013;13:576–88.
26 Neuberger J, Guthrie C, Aaranovitch D. *More care, less pathway: a review of the Liverpool care pathway*. London: Department of Health, 2013.
27 Hearn J, Higginson IJ. Do specialist palliative care teams improve outcomes for cancer patients? A systematic literature review. *Palliat Med* 1998;12:317–32.
28 Leclerc B-S, Blanchard L, Cantinotti M, *et al*. The effectiveness of interdisciplinary teams in end-of-life palliative care: a systematic review of comparative studies. *J Palliat Care* 2014;30:44–54.
29 Zimmermann C, Riechelmann R, Krzyzanowska M, *et al*. Effectiveness of specialized palliative care: a systematic review. *JAMA* 2008;299:1698–709.
30 Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol* 2005;8:19–32.
31 Armstrong R, Hall BJ, Doyle J, *et al*. Cochrane Update. 'Scoping the scope' of a cochrane review. *J Public Health* 2011;33:147–50.

BMJ Open: first published as 10.1136/bmjopen-2021-057194 on 5 April 2022. Downloaded from http://bmjopen.bmj.com/ on October 20, 2023 by guest. Protected by copyright.

32 Munn Z, Peters MDJ, Stern C, *et al*. Systematic review or scoping review? guidance for authors when choosing between a systematic or scoping review approach. *BMC Med Res Methodol* 2018;18:143.
33 Peters MDJ, Marnie C, Tricco AC, *et al*. Updated methodological guidance for the conduct of scoping reviews. *JBI Evid Synth* 2020;18:2119–26.
34 Tricco AC, Lillie E, Zarin W, *et al*. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med* 2018;169:467–73.
35 Noyes J*et alet al*. *Qualitative evidence, in Cochrane Handbook for systematic reviews of interventions*. Hoboken, NJ: Wiley-Blackwell, 2019: 525–45.
36 Taylor P, Johnson MJ, Dowding DW. Clinical decision-making at the end of life: a mixed-methods study. *BMJ Support Palliat Care* 2020;10:e26.
37 Caswell G, Pollock K, Harwood R, *et al*. Communication between family carers and health professionals about end-of-life care for older people in the acute hospital setting: *a qualitative study*. *BMC Palliat Care* 2015;14:35.
38 Costello J. Nursing older dying patients: findings from an ethnographic study of death and dying in elderly care wards. *J Adv Nurs* 2001;35:59–68.
39 Dee JF, Endacott R. Doing the right thing at the right time. *J Nurs Manag* 2011;19:186–92.
40 Glogowska M, Simmonds R, McLachlan S, *et al*. "Sometimes we can't fix things": a qualitative study of health care professionals' perceptions of end of life care for patients with heart failure. *BMC Palliat Care* 2016;15:3.
41 Gott M, Ingleton C, Bennett MI, *et al*. Transitions to palliative care in acute hospitals in England: qualitative study. *BMJ* 2011;342:d1773.
42 Hockley J, Dewar B, Watson J. Promoting end-of-life care in nursing homes using an 'integrated care pathway for the last days of life'. *Journal of Research in Nursing* 2005;10:135–52.
43 Johnson M, Attree M, Jones I, *et al*. Diagnosis, prognosis and awareness of dying in nursing homes: towards the gold standard? *Int J Older People Nurs* 2014;9:95–105.
44 Pontin D, Jordan N. Issues in prognostication for hospital specialist palliative care doctors and nurses: a qualitative inquiry. *Palliat Med* 2013;27:165–71.
45 Freemantle A, Seymour J. Why is the Liverpool care pathway used for some dying cancer patients and not others? healthcare professionals' perspectives. *BMC Res Notes* 2012;5:524.
46 Gambles M, Stirzaker S, Jack BA, *et al*. The Liverpool care pathway in hospices: an exploratory study of doctor and nurse perceptions. *Int J Palliat Nurs* 2006;12:414–21.
47 Reid C, Gibbins J, Bloor S, *et al*. Healthcare professionals' perspectives on delivering end-of-life care within acute Hospital trusts: a qualitative study. *BMJ Support Palliat Care* 2015;5:490–5.
48 Ryan T, Gardiner C, Bellamy G, *et al*. Barriers and facilitators to the receipt of palliative care for people with dementia: the views of medical and nursing staff. *Palliat Med* 2012;26:879–86.
49 Willard C, Luker K. Challenges to end of life care in the acute hospital setting. *Palliat Med* 2006;20:611–5.
50 Standing H, Patterson R, Dalkin S, *et al*. A critical exploration of professional jurisdictions and role boundaries in inter-professional end-of-life care in the community. *Soc Sci Med* 2020;266:113300.
51 Bloomer MJ, Botti M, Runacres F, *et al*. Communicating end-of-life care goals and decision-making among a multidisciplinary geriatric inpatient rehabilitation team: a qualitative descriptive study. *Palliat Med* 2018;32:1615–23.
52 Bloomer MJ, Botti M, Runacres F, *et al*. End-Of-Life care for older people in subacute care: a retrospective clinical audit. *Collegian* 2019;26:22–7.
53 Bostanci A, Horey D, Jackson K, *et al*. Insights into hospitalisation of advanced cancer patients: a study of medical records. *Eur J Cancer Care* 2016;25:190–201.
54 Bloomer MJ, Endacott R, O'Connor M, *et al*. The 'dis-ease' of dying: challenges in nursing care of the dying in the acute hospital setting. A qualitative observational study. *Palliat Med* 2013;27:757–64.
55 Borbasi S, Wotton K, Redden M, *et al*. Letting go: a qualitative study of acute care and community nurses' perceptions of a 'good' versus a 'bad' death. *Australian Critical Care* 2005;18:104–13.
56 Tan H, Bloomer M, Digby R, *et al*. End-Of-Life care in an Australian rehabilitation facility for older people: staff focus groups. *Death Stud* 2014;38:186–93.
57 Bern-Klug M, Gessert CE, Crenner CW, *et al*. "Getting everyone on the same page": nursing home physicians' perspectives on end-of-life care. *J Palliat Med* 2004;7:533–44.
58 Chuang E, Lamkin R, Hope AA, *et al*. "I Just Felt Like I Was Stuck in the Middle": Physician Assistants' Experiences Communicating With Terminally Ill Patients and Their Families in the Acute Care Setting. *J Pain Symptom Manage* 2017;54:27–34.
59 Gidwani R, Nevedal A, Patel M, *et al*. The appropriate provision of primary versus specialist palliative care to cancer patients: oncologists' perspectives. *J Palliat Med* 2017;20:395–403.
60 Travis SS, Moore S, Larsen PD, *et al*. Clinical indicators of treatment futility and imminent terminal decline as discussed by multidisciplinary teams in long-term care. *Am J Hosp Palliat Care* 2005;22:204–10.
61 Hanson LC, Henderson M, Menon M. As individual as death itself: a focus group study of terminal care in nursing homes. *J Palliat Med* 2002;5): :117–25.
62 Andersson S, Lindqvist O, Fürst C-J, *et al*. Care professional's experiences about using Liverpool care pathway in end-of-life care in residential care homes. *Scand J Caring Sci* 2018;32:299–308.
63 Näppä U, Rasmussen BH, Axelsson B, *et al*. Challenging situations when administering palliative chemotherapy - a nursing perspective. *Eur J Oncol Nurs* 2014;18:591–7.
64 Wallerstedt B, Andershed B. Caring for dying patients outside special palliative care settings: experiences from a nursing perspective. *Scand J Caring Sci* 2007;21:32–40.
65 Pettersson M, Hedström M, Höglund AT. The ethics of DNR-decisions in oncology and hematology care: a qualitative study. *BMC Med Ethics* 2020;21:1–9.
66 Pettersson M, Hedström M, Höglund AT. Striving for good nursing care: nurses' experiences of do not resuscitate orders within oncology and hematology care. *Nurs Ethics* 2014;21:902–15.
67 Hill E, Savundranayagam MY, Zecevic A, *et al*. Staff perspectives of barriers to access and delivery of palliative care for persons with dementia in long-term care. *Am J Alzheimers Dis Other Demen* 2018;33:284–91.
68 Nouvet E, Strachan PH, Kryworuchko J, *et al*. Waiting for the body to fail: limits to end-of-life communication in Canadian hospitals. *Mortality* 2016;21:340–56.
69 Oliveira I, Fothergill-Bourbonnais F, McPherson C, *et al*. Battling a Tangled web: the lived experience of nurses providing end-of-life care on an acute medical unit. *Res Theory Nurs Pract* 2016;30:353–78.
70 Strachan PH, Kryworuchko J, Nouvet E, *et al*. Canadian Hospital nurses' roles in communication and decision-making about goals of care: an interpretive description of critical incidents. *Appl Nurs Res* 2018;40:26–33.
71 Clark JB, Sheward K, Marshall B, *et al*. Staff perceptions of end-of-life care following implementation of the Liverpool care pathway for the dying patient in the acute care setting: a new Zealand perspective. *J Palliat Med* 2012;15:468–73.
72 Fryer S, Bellamy G, Morgan T, *et al*. "Sometimes I've gone home feeling that my voice hasn't been heard": a focus group study exploring the views and experiences of health care assistants when caring for dying residents. *BMC Palliat Care* 2016;15:78.
73 Abu-Ghori IK, Bodrick MME, Hussain R, *et al*. Nurses' involvement in end-of-life care of patients after a do not resuscitate decision on general medical units in Saudi Arabia. *Intensive Crit Care Nurs* 2016;33:21–9.
74 Lemos Dekker N, Gysels M, van der Steen JT. Professional caregivers' experiences with the Liverpool care pathway in dementia: an ethnographic study in a Dutch nursing home. *Palliat Support Care* 2018;16:479–86.
75 Prompahakul C, Keim-Malpass J, LeBaron V, *et al*. Moral distress among nurses: a mixed-methods study. *Nurs Ethics* 2021;28:1165–82.
76 Lai XB, Wong FKY, Ching SSY. The experience of caring for patients at the end-of-life stage in non-palliative care settings: a qualitative study. *BMC Palliat Care* 2018;17:116.
77 Seuren LM, Stommel W, van Asselt D, *et al*. Multidisciplinary meetings at the emergency department: a conversation-analytic study of decision-making. *Soc Sci Med* 2019;242:112589.
78 Taylor P, Dowding D, Johnson M. Clinical decision making in the recognition of dying: a qualitative interview study. *BMC Palliat Care* 2017;16:11.
79 Fernando G, Hughes S. Team approaches in palliative care: a review of the literature. *Int J Palliat Nurs* 2019;25:444–51.
80 Ellershaw J, Ward C. Care of the dying patient: the last hours or days of life. *BMJ* 2003;326:30.
81 Gair G, Hartery T. Medical dominance in multidisciplinary teamwork: a case study of discharge decision-making in a geriatric assessment unit. *J Nurs Manag* 2001;9:3–11.
82 Cooksey RW. *Judgment Analysis - Theory, Methods, and Applications*. San Diego: Academic Press, 1996.

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83 Sniezek JA, Buckley T. Cueing and cognitive conflict in Judge-Advisor decision making. *Organ Behav Hum Decis Process* 1995;62:159–74.
84 Higginson IJ, Sen-Gupta GJ. Place of care in advanced cancer: a qualitative systematic literature review of patient preferences. *J Palliat Med* 2000;3:287–300.
85 World Health Organization,. *Integrating palliative care and symptom relief into primary health care: a WHO guide for planners, implementers and managers*. Geneva: World Health Organization, 2018.
86 Dew K, Stubbe M, Signal L, *et al*. Cancer care decision making in multidisciplinary meetings. *Qual Health Res* 2015;25:397–407.
87 Wittenberg-Lyles E, Parker Oliver D, Demiris G, *et al*. The active intervention in hospice interdisciplinary team meetings: exploring family caregiver and hospice team communication. *J Comput Mediat Commun* 2010;15:465–81.
88 Arber A. Team meetings in specialist palliative care: asking questions as a strategy within interprofessional interaction. *Qual Health Res* 2008;18:1323–35.
89 Chamberlain-Salaun J, Mills J, Usher K. Terminology used to describe health care teams: an integrative review of the literature. *J Multidiscip Healthc* 2013;6:65–74.
90 McCallin A. Interdisciplinary practice--a matter of teamwork: an integrated literature review. *J Clin Nurs* 2001;10:419–28.
91 Hui D, Nooruddin Z, Didwaniya N, *et al*. Concepts and definitions for "actively dying," "end of life," "terminally ill," "terminal care," and "transition of care": a systematic review. *J Pain Symptom Manage* 2014;47:77–89.

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