Title of article

Implementing an integrated pathway to care for the dying – is your organisation ready?

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Abstract

Background. Integrated pathways for care of the dying aim to promote the delivery of high quality palliative care regardless of access to specialist services.

Aim. To produce a heuristic to assist with planning and evaluating the integration of the care of the dying pathway into everyday work.

Methods. Electronic databases were searched to identify research papers focused on the implementation of integrated pathways for care of the dying in acute hospital settings.

Results. Thirteen articles were reviewed using the four elements of Normalisation Process Theory - coherence, cognitive participation, collective action and reflexive monitoring. These results informed the development of a heuristic for organisational readiness.

Conclusion. The organisational readiness heuristic provides an evidence-based checklist for organisational leaders who are planning to introduce new, or evaluate current, implementation of integrated pathways for care of the dying. The next step is to trial the heuristic for feasibility in practice.

Keywords

End of life; care; organisational readiness; heuristic; normalization process theory

Introduction

Palliative care has emerged as an important field in healthcare internationally. While specialist palliative care services have historically focused on the care of people diagnosed with cancer, the rise of chronic diseases has extended the need for palliative care to non-cancer hospital settings (Bostwick et al 2017). For example, in Australia, cancer accounted for around 60% of separations for palliative care, with another 40% are attributed to non-neoplastic diseases including heart disease, chronic obstructive airway disease, and pneumonia (Australian Institute for Health and Welfare, 2015). One way for health services to support clinicians working in non-cancer settings to delivery high quality palliative care in the last hours or days of life is provision of an integrated pathway for care of the dying (Ellershaw & Ward 2003).

The aim of the integrated pathway for care of the dying is to support a person who is in the last hours to days of life to be as comfortable as possible (Ellershaw & Ward 2003). In a cluster randomized trial, the integrated pathway for care of the dying has been found to improve respect, dignity and kindness, as well as control of physical symptoms such as breathlessness, but it did not improve the overall quality of care (Constantini et al 2014). This scoping study aimed to identify the barriers and facilitators to implementing an integrated pathway for care of the dying to inform the development of a heuristic to assist organisational leaders to determine their readiness to implement an integrated pathway for care of the dying.

Background

Implementing integrated pathways for care of the dying is challenging. The most established integrated pathway is known as the Liverpool Care Pathway (LCP). The LCP was subject to

significant broadcast media attention, with many reports of poor treatment in hospitals, particularly at nights and on weekends (Neuberger et al 2013). The poor quality of communication between health professionals and family caregivers accounted for many of the complaints (Neuberger et al 2013). While supporting the principles of the LCP, the implementation was considered problematic (Neuberger et al 2013). There remains limited guidance on how to effectively implement integrated pathways for care of the dying.

The stakes are high when implementing evidence-based guidelines and policies, in that patient care can be compromised if the implementation process is not successful (Proctor et al 2011). In general, when implementing new practices, consideration needs to be given to the type of intervention, the setting and context, the individuals involved and the implementation process (Damschroder et al 2009). Three areas of organisational readiness, motivation to implement an intervention, general capacities of the organisation, and the innovation-specific capacities needed for a particular innovation, have been developed into a simple heuristic (Scaccia et al 2015). This heuristic can be used by organisations to assess readiness to implement an innovation, such as an integrated pathway for care at the end of life. Drawing upon the experiences of others, this review aimed to identify the barriers and facilitators to implementing the integrated pathway for care at the end of life, in order to produce an heuristic of capacities, including innovation-specific capacities, motivation and organisational capacities, required to make the integrated care of the dying pathway part of everyday work.

Methods

A scoping review was selected because it synthesizes different types of evidence, and identifies gaps in research related to a specific topic in a systematic process (Colquhoun et al

2014) and is especially useful in emerging areas of research (Anderson et al 2008). The review process followed the process outlined by Mays, Pope and Popay (2005) and focused on the innovation-specific capacities needed to implement an integrated care pathway for care at the end of life. The specific research questions guiding the study were:

1. What are the barriers and facilitators that health professionals encounter to make the integrated pathway for care at the end of life part of their work?
2. What does this mean in terms of organisational readiness to implement the integrated pathway for care of the dying in hospitals?

Search

The review team was multidisciplinary, with backgrounds in medicine, allied health, and nursing. An expert librarian assisted with the search process. A primary search of the literature was undertaken to identify research reporting on 'End of Life' (EOL) pathways in acute, adult health care settings (see Table 1). Records were identified through the PubMed, Embase, Cochrane, AusHealth, PsycInfo, Web of Science and CINAHL databases. The reference lists of all reports identified through the primary search were then hand searched as part of a secondary search strategy. The secondary search strategy was then expanded to include the search terms listed in Table 1 Part B, using the PubMed database only.

[Insert Table 1 here]

Selection and appraisal

All study designs, regardless of methodological design or quality, were taken into account to identify the complex interplay of factors surrounding implementation. No time restrictions were placed on the search. Articles were excluded if they were in a language other than

English, set outside the adult acute care setting, used non-empirical methodology or published in non-peer review journals. Two researchers (KS & CN) reviewed all abstracts identified through the primary and secondary search strategies, with a third researcher (LG) resolving discordance. The process for article selection is outlined in Figure 1.

[Insert Figure 1 here]

Data extraction and analysis:

All articles for review were treated as qualitative data. The focus of the analysis was not on whether the integrated pathway for care of the dying was effective; it was focused on the discussion of implementation. An initial inductive content analysis of the results and discussion sections of each paper was undertaken by all three authors, with KS reviewing all records, and CN and LG verifying half each for comparison with KS.

Normalisation Process Theory (NPT) provided the *a priori* analytical framework for the data extraction and analysis. NPT is widely recognised as an effective implementation theory (Nilsen 2015) consisting of four elements: coherence, cognitive participation, collective action and reflexive monitoring (May 2013). Coherence refers to the meaningful qualities of a practice; cognitive participation to the enrolment and engagement of individuals and groups; collective action to the interaction with already existing practices; and reflexive monitoring to how a practice is understood and assessed by those people participating in enacting it (May & Finch 2009). A tool for extracting data was developed, by combining basic background and contextual information with NPT constructs.

Data synthesis

The identified barriers and facilitators were then synthesized to align with the key capacities associated with organisational readiness: innovation-specific, motivation and organisational capacities (Scaccia et al 2015). Meetings were held on a monthly basis to monitor our progress and discuss issues arising throughout the project.

Results

Of the 14 papers selected for full review, five were from the United Kingdom, five from Europe (Italy=2, Ireland=1, Netherlands=1, and Belgium=1), two from the United States, and two from New Zealand. The studies were predominantly qualitative in nature, with small and purposeful samples. A description of the studies is found in Table 2. Findings are presented in three sections: barriers to implementation, facilitators to implementation, and a recommended organisational readiness heuristic for implementing an integrated care of the dying pathway.

[Insert Table 2 here]

Barriers to implementing integrated care of the dying pathways

Coherence. When clinicians believe that the care they provide is already consistent with the integrated pathway for care of the dying, the pathway was perceived as unnecessary administrative burden unlikely to improve care, and was therefore less likely to be implemented (Bookbinder 2005 et al; Mellor et al 2004). The amount of seemingly ‘redundant’ information on the pathway form, and its design as a checklist has led some to the opinion that is not meaningful (Di Leo 2015 et al; Sleeman et al 2014). The fear by senior clinicians that more junior colleagues, or novices, will rigidly apply the pathway irrespective of the clinical scenario also reduces uptake of the integrated pathway for care of the dying.

This was more pronounced for those who believed that the pathway promotes the binary view of a patient as either ‘dying’ or ‘not dying’ (Sleeman et al 2014). The concern that the education will come to focus on the pathway rather than on the general principles of palliative care further discourages its use (McConnell et al 2015; Sleeman et al 2014). Some clinicians expressed concern that death could be considered a medical failure (Di Leo et al 2015) or that medical wards are not the correct environment for end of life care (Di Leo et al 2011). Likewise, some clinicians are anxious that the patient and their family might feel the use of the pathway is negligent and are concerned about the possibilities of litigation and distress that may occur should the patient recover (Clark et al 2012; Di Leo et al 2015; Jack et al 2003).

Cognitive participation. Difficulty in recognising impending death appears to be a major barrier in the use of the integrated care of the dying pathway. This seems to be especially difficult when death occurs out of hours or over the weekend, or where a clinician outside of the primary treating team must initiate the pathway (Clark et al 2012; Di Leo et al 2015; Luhrs et al 2005; Thurston & Waterworth 2012; Verhofsted et al 2015). It has been suggested that the criteria for starting the integrated care of the dying pathway is vague, raising another obstacle to its use (Di Leo et al 2015). Apprehension about raising the issue of dying with the patient or the family, or the scenario where the family disagreed regarding prognosis, meant that the pathway was often not initiated (Di Leo et al 2015). Finally, difficulty accessing educational programs, or educational content that was inconsistent with the clinician’s experience reduced implementation of the integrated care of the dying pathway (Di Leo et al 2011; Di Leo et al 2015). Senior clinicians (doctors) often did not attend educational sessions and some doctors were reluctant to commit to changing their practice (Clark et al 2012; Jack et al 2003; Thurston & Waterworth 2012).

Collective action. Resource deficits emerged as a strong factor against integrated care of the dying pathway implementation. Physical resources in the form of private spaces in which to talk with patients and their families, lack of appropriate staff and time in the face of overwhelming documentation, prescription pads and equipment were all highlighted as issues (Bookbinder et al 2005; Clark et al 2012; Di Leo et al 2011; Di Leo et al 2015; McConnell et al 2015; Raijmakers et al 2015; Verhosted et al 2015; Walker et al 2010). ‘Psychosocial’ work, or spending time with the patient and their families, suffered particularly where time constraints were thought to exist (Di Leo et al 2011; Di Leo et al 2015).

Poor team dynamics and distrust between professions also emerged as a factor inhibiting uptake of the integrated care of the dying pathway. Nursing staff reported frustration when doctors were reluctant to initiate the pathway (Luhrs et al 2005; Thurston & Waterworth 2012; Walker et al 2010). Disagreement between nurses and doctors regarding the care plan also negatively impacted on the use of the pathway (Di Leo et al 2011; Mellor et al 2004). Other interprofessional factors included the relationship between management and floor staff whereby the engagement of clinicians in pathway implementation was reduced when senior managers reduced support for the integrated care of the dying pathway (McConnell et al 2015).

Reflexive monitoring. Finally, the negative public perception of integrated care of the dying pathways and the sense of negligence felt by the clinician if the patient improves whilst on the pathway were considered barriers to its implementation (Jack et al 2003; McConnell et al 2015). The integrated care of the dying pathway did not provide a vehicle to resolve

interdisciplinary conflict and when it failed to support complex family negotiations, the pathway was not used (Di Leo et al 2011; McConnell et al 2011).

Facilitators of integrated care pathways for care of the dying

Coherence. The integrated pathway for care of the dying is more likely to be implemented when it aligns with the clinician's personal understanding of evidence-based palliation and is viewed as a guide to prompt care (Clark et al 2012; Di Leo et al 2011; Raijmakers et al 2015). Where the clinician believes that death is a legitimate outcome of care and that the use of an integrated pathway for care of the dying will honour the patient by delivering a good death, it is more likely to be employed (Bookbinder et al 2005; Sleeman et al 2014). The belief that the pathway provides a structured means by which to care for the patient and focus on the relatives' needs, leads to greater use (Jack et al 2003). The integrated pathway for care of the dying is valued as symbolic of the shift from active to palliative treatment, helping clinicians express non-verbally the change in care (McConnell et al 2015; Sleeman et al 2014). Finally, in relation to coherence, the clear outline of the goals of care found in the pathway increases the user's confidence in delivering a better level of care and was also associated with increased use (Clark et al 2012; Thurston & Waterworth 2012).

Cognitive participation. Overwhelming, the most positive factor in influencing the uptake of the integrated care of the dying pathway was the involvement of a 'change champion', a local unit expert or taskforce that actively encouraged pathway use and was available to support its users (Bookbinder et al 2005; Luhrs et al 2005; McConnell et al 2015; Mellor et al 2004; Raijmakers et al 2015; Verhofsted et al 2015). Following the lead of a more senior colleague, manager or executive committed to the integrated pathway for care of the dying was also beneficial to implementation in the acute hospital setting (McConnell et al 2015;

Mirando, Davies & Lipp 2005). The opportunity to work collaboratively with other disciplines, and to engage in group decision-making is yet another collaborative facilitating factor (Clark et al 2012; Raijmakers et al 2015; Verhofsted et al 2015).

Access to education programs developed to support the use of the integrated care of the dying pathway, encourages its use, as did access to an implementation guide (McConnell et al 2015; Walker et al 2010; Verhofsted et al 2015). Where education helped users develop skills in discussing dying with patients and their relatives, and boosted their confidence in withdrawing treatments and managing pain, the integrated care of the dying pathway was more likely to be followed (Di Leo et al 2011, Thurston & Waterworth 2012, Jack et al 2003, Clark et al 2012).

Collective action. The integrated pathway for care of the dying provided a means to facilitate frank discussions between different disciplines regarding the goals of care helping clinicians recognise the contribution of their colleagues from other disciplines (Mirando et al 2005; Clark et al 2012; Di Leo et al 2011). Access to expert or experienced colleagues was considered an exceptionally desirable aspect of the integrated pathway for care of the dying (Mirando et al 2005; Raijmakers et al 2015). The form was a considered a useful means of sharing information and supported bedside communication between different team members (Sleeman et al 2015; Walker 2010). Likewise, it was considered an excellent tool to support communication or discussions with the patient's family (Jack et al 2003; Thurston & Waterworth 2012; Verhofsted et al 2015). Staff meetings to initiate the pathway and to debrief after the death of the patient were also considered factors that promote implementation of the integrated pathway for care of the dying (Bookbinder et al 2005). Even local staff meetings to address potential barriers to physician compliance were deemed useful

(Luhrs et al 2005; Mirando et al 2005). Attending group educational sessions about end of life care, and learning about end of life care by completing the integrated pathway for care of the dying was also considered a positive factor in the pathway implementation in the acute hospital setting (McConnell et al 2015; Sleeman et al 2015; Verhofsted et al 2015).

Reflexive monitoring. Staff debriefing, where individuals could discuss how a patient's symptoms were managed and share feedback were viewed positively (Bookbinder et al 2005; Di Leo et al 2011; Di Leo et al 2015; Luhrs et al 2005; Thurston & Waterworth 2012). The opportunity to participate in audits of patient notes on completion of the integrated care of the dying pathway (Di Leo et al 2011) and to evaluate training programs (McConnell et al 2015; Mellor et al 2004; Mirando et al 2005; Raijmakers et al 2015) were also considered facilitating factors in the uptake of integrated pathways for care of the dying.

Organisational readiness for implementing an integrated end of life care pathway

In this review, there was strong evidence about barriers and facilitators to implementing end of life care pathways. When these are categorized using the NPT conceptual framework, strategies to promote facilitators and address barriers can be created. When the facilitators and barriers are grouped into organisational capacities (Scaccia et al 2015), a heuristic for implementation planning and evaluation emerged (Table 3). While most organisational characteristics included can facilitate the implementation of an integrated end of life care pathway, the presence of some characteristics are inherent barriers.

[Insert Table 3 here]

Discussion

In the hospital context, the alignment between clinicians' personal understanding of death as a legitimate outcome of care and that the belief that the integrated pathway for care of the dying can honor the patient by delivering a good death (coherence) is critical for successful implementation. When clinicians believe that their care provision is consistent with the integrated pathway (coherence), then the pathway is seen as an unnecessary administrative burden and unlikely to be implemented well. A key strategy, to align individual understanding of death with organisational imperatives for quality end of life care, may include educational programs on the principles of palliative care, focused on the legitimate shift in focus from cure to comfort in end of life care. In terms of organisational readiness, an accessible education program can support clinicians, especially doctors, to appreciate that in some cases death is not a medical failure and to value comfort at the end of life. A key element in this type of education is to draw upon the deeply held values of clinicians to provide quality care in general, to the care required at the end of life.

In many of the reviewed studies, a change facilitator role was considered important to support clinicians to conceptualize their role (cognitive participation) in the care of the person at end of life. The resourcing of a specific change facilitator role, as well as other indicators of organisational support from senior managers and executives, were considered necessary for clinicians to implement the integrated care of the dying pathways. In terms of organisational capacity to implement integrated care pathways, the usefulness of the pathway to support clear communication between clinicians from different disciplines and clinicians and families is a valued reason to participate. Education, often provided in the context of everyday practice, improved clinician confidence and motivation to use the integrated care pathways. Change facilitators, experienced colleagues and/or specialist palliative care clinicians were all considered sources for practice-based learning.

To work collaboratively with the integrated care pathway (collective action), several organisational changes are required. Firstly, local multi-disciplinary team meetings are required. At these meetings, opportunities to discuss end of life care matters, including specific cases, can promote interdisciplinary working. Secondly, private spaces for sensitive conversations with families are required. Comfort care requires psychosocial care. While many medical treatments are withdrawn as part of the integrated care of the dying pathway, there is a considerable time required to provide psychosocial care for the person and their family. Further to this, organisational capacity to support multidisciplinary practice is necessary and specific innovation capacities related to mechanisms to support communication among team members and families is critical for clinician motivation, and therefore successful implementation.

As the articles became more recent, the negative public perception of integrated pathways for care at the end of life emerges as a significant consideration by clinicians, especially senior medical officers. Staff awareness of the effects of the integrated pathways for care of the dying (reflexive monitoring) emerged as an important element in implementation. Staff debriefings were used in several studies. Sometimes, the debriefing was supported by audits of patient notes but not always. Organisational capacity to support the innovation is enhanced when there are opportunities for staff to reflect on their end of life care practice collectively. Structured debriefings, with the aim of reflexive monitoring of integrated pathway usage, emerges as another important element to support implementation.

The findings from this study echo those of the realist systematic review of implementation strategies (McConnell et al 2013). Consistent with our findings, key enhancing factors in the

hospice setting included a dedicated facilitator, education and training, audit and feedback, organisational culture, and adequate resources (McConnell et al 2013). Further to the McConnell led study (2013), clinicians are challenged to accept death as a legitimate outcome (coherence) and significant work is required to support them to align their understanding with the principles of good palliative care. How clinicians perceive their, and other roles in care at the end of life (cognitive participation) requires negotiation and like the hospice setting, a change facilitator is critical in hospitals seeking to implement integrated pathways for care of the dying. While hospice culture values psychosocial care as part of comfort, this is not as culturally relevant in the hospital. Significant organisational changes in the hospital are required to support multidisciplinary ways of working (collective action) that privileges psychosocial care required for quality care of the dying. Finally, like hospice settings, the importance of a clinical governance framework that values audit and feedback, including team reflections on specific cases (reflexive monitoring) is important to ensure high quality care.

Limitations

During the period of this review, the Liverpool Care Pathway or LCP title was dropped, leading us to use the more generic term, integrated pathway for care of the dying. Prior to the LCP, there was no single term that was used, which may have reduced our ability to find some articles. This study did not include non-English language papers or those set in the paediatric population, so it remains unclear what factors facilitate or impair the implementation of integrated pathways for care at the end of life within these populations.

Conclusion

As our society continues to age, with an increasing proportion of the older population living with life-limiting disease using hospital services, it is important to be ready to provide end of life care in the hospital setting. Cultural change across the hospital organisation is required to support the widespread implementation of quality end of life care. Through this literature review and analysis, specific elements of change have been highlighted including alignment of individual beliefs about death in hospital and care of the dying (coherence), improved clinician understanding of individual roles in care of the dying (cognitive participation), resources to support collaborative working to shift the focus from cure to care (collective action), and legitimate opportunities for staff to discuss their experiences of providing end of life care (reflexive monitoring).

Through this review we have highlighted the factors that both positively and negatively impact the implementation of integrated pathway for care of the dying in the acute hospital setting. We have also added a practical dimension to this area of inquiry in the form of an heuristic, which can be used to review organisational readiness to implement an integrated pathway for care of the dying. Further research into the usefulness of the organisational readiness heuristic is both warranted and desired, particularly where it might influence the re-introduction of potentially useful pathways into clinical practice.

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Figure 1 PRISMA Flow Diagram for the primary literature search

Table 1 Search Terms

Search Terms Primary Search (Part A)	
1	Terminally Ill/ (5668)
2	Terminal Care/ (22446)
3	Palliative Care/ (42818)
4	Palliative Medicine/ (44)
5	"Hospice and Palliative Care Nursing"/ (139)
6	(palliative or palliation).tw. (51768)
7	(pathway adj4 care adj4 (integrated or dignity)).tw. (162)
8	(liverpool adj5 (dying or pathway)).tw. (183)
9	((pathway or patient* or people or person) adj4 ("end of life" or dying or "last days of life")).tw. (8928)
10	((terminal* or "end of life" or dying) adj3 (care or caring)).tw. (10752)
11	(imminent* adj3 (death or dying)).tw. (511)
12	((prince or peace) adj3 (project or tool or measure)).tw. (27)
13	or/1-12 (95445)
14	Translational Medical Research/ (5846)
15	Quality Improvement/ (8480)
16	((research or best practice) adj4 (implement*or adopt* or diffus* or disseminat*)).tw. (1878)
17	(science adj2 implementation).tw. (454)
18	(translat* adj2 research*).tw. (8158)
19	exp Patient Care Planning/ (54159)
20	((clinical or critical) adj2 pathway*).tw. (6680)
21	or/14-20 (81816)
22	13 and 21 (4293)
23	Hospitals/ (55999)
24	acute care.tw. (14677)
25	or/23-24 (69810)
26	22 and 25 (145)
Search Terms Secondary Search (Part B)	
27	terminal care [mh:noexp] OR ((terminal care[tw] OR end of life[tw]) NOT Medline[sb]) AND English[la]
28	Pathway* AND
29	implement* OR adopt* OR "quality improv*" OR diffus* OR disseminat*

Table 2. Description of included studies

First author (year) Country	Aim	Method	Participants Setting	Implementation Facilitators	Implementation Barriers
Bookbinder (2005) United States of America	Evaluate the utility of the Palliative Care for Advanced Disease (PCAD pathway	Chart audit plus anecdotal reports of implementation issues	157 patients who died Oncology, palliative care, geriatric wards in one hospital	C: Belief that PCAD assisted in honouring patients through promotion of a peaceful death; general education on palliative care CP: Use of ‘champions’ who fostered local engagement CA: MDT meetings to identify patients suitable for PCAD RM: Staff debriefing	C: Belief that what they were doing was already consistent with the guidelines. CP: None CA: Too much paperwork to complete RM: None
Clark (2012) New Zealand	Post-LCP implementation report of staff perceptions of EOL care	Prospective mixed methods including interviews	41 nurses, doctors and allied health professionals Two acute wards in one hospital	C: Belief that LCP contributes to improved care for dying patients CP: None reported CA: None reported RM: None reported	C: Concerns related to cases where decision for LCP reversed or family not aware of dying before LCP begins CP: Delayed diagnosis of death reduces opportunity to benefit from LCP CA: Lack of space for private meetings with family; high workload RM: None reported

Di Leo (2011) Italy	Assess the feasibility of Liverpool Care Pathway implementation	Qualitative thematic analysis of a series of four focus group meetings	15 doctors and nurses One general medicine ward in one hospital	C: LCP is a valid tool for end of life care CP: Intensive training to enhance skills in pain management and family communication; Palliative care unit team provides coaching, telephone consultation; champions CA: Doctors valued nurse communication with families RM: Clinical audits for difficult cases; include LCP as part of quality improvement program	C: Medical wards are the incorrect place to provide end of life care CP: Education on end of life care inconsistent with clinical experience CA: Burden of documentation; lack of privacy for family meetings RM: None reported
Di Leo (2015) Italy	Explore the views of professionals who, during the hospital implementation of the Italian version of the Liverpool Care of the Dying Pathway (LCP-I), voiced or showed concerns towards it.	Qualitative thematic analysis	6 physicians and 5 nurses Six general medicine wards from four hospitals	C: None reported CP: None reported CA: None reported RM: None reported	C: End of life care is not consistent with medical mission to save lives CP: Unable to raise the topic of dying with patient/family; unable to recognise when to start LCP CA: Difficult to find time to meet; LCP form too long RM: none

Jack (2003) England	Explore how nurses perceived the impact of the Liverpool Care Pathway.	Qualitative thematic analysis of focus groups	15 nurses Medicine, surgery, care of the elderly, intensive care, and renal unit of one hospital	C: LCP can improve symptom control and reduce unnecessary routinized care CP: Confident to management pain and discontinue inappropriate treatments CA: Engagement with family improved with LCP RM: None reported	C: Fear of litigation (negligence) CP: Senior doctors not engaged in using LCP CA: none RM: None reported
Luhrs (2005) United States of America	Report on the implementation of a previously developed clinical pathway for terminally ill patients, Palliative Care for Advanced Disease (PCAD)	Retrospective chart review	39 patients Acute care oncology unit in one hospital	C: Posted guidelines for pharmacological management of common symptoms is staff rooms CP: Appoint specific quality improvement team; change champion; education on how to use the LCP CA: Early physician engagement encourages others to engage RM: Feedback questionnaire and response	C: None reported CP: Difficulty recognising eligible patients; complex interdisciplinary templates CA: reluctance to initiate the LCP on weekends or holidays RM: None reported

McConnell (2015) Ireland	To identify the influences that facilitated or hindered successful Liverpool Care Pathway implementation	Realist evaluation of an organizational case study	22 staff and two policy makers Two service groups: cancer and specialist services and acute services in one NHS trust	C: Education on how the LCP could benefit patient care CP: Facilitator to market the LCP; LCP perceived as useful to complete tasks; senior executive support CA: Facilitator support of clinical staff to make difficult decisions and change practice RM: None reported	C: Limited education or education limited to LCP; public saw the pathway as a 'pathway to death' CP: Removal of the facilitator reduced confidence of role in end of life care; end of life care not evident priority in clinical governance CA: Clinicians' perceptions of their respective roles did not align RM: Staff unaware of audit results
Mellor (2004) England	Describe how LCP was implemented in one hospital	Descriptive case study 917 beds in 47 wards of a large hospital in UK	30 patient records and interviews with staff (n = not reported) One hospital in the NHS trust	C: Ward-based education on how to use the LCP; general education on palliative care CP: Facilitator encourages staff engagement in processes; ward based palliative care resource nurse CA: Confidence when supported by facilitator RM: None reported	C: Belief that another checklist would increase workload but not improve care; doctors not available for group education CP: None reported CA: Nurses challenged to raise end of life care conversation with medical officers RM: None reported

Mirando (2005) United Kingdom	Evaluate and report the strengths and weaknesses of introducing the integrated care pathway	Descriptive case study using medical record audit, monitoring variances, evaluation of training and field notes.	50 patients 12 clinical areas in a district hospital and six community hospitals	C: Staff see the need to change; project nurse is easily available CP: Strong support from ward manager CA: None reported RM: None reported	C: Project nurse not available for consultation CP: None reported CA: None reported RM: None reported
Raijmakers (2015) Netherlands	Evaluates barriers and facilitators to implementation of the Liverpool Care Pathway	Qualitative study of stakeholder views	28 stakeholders involved in implementation of the LCP 10 health organisations across the Netherlands	C: Believe that the LCP is evidence-based; clear goals of care for practice CP: Value of management commitment CA: Sufficient time and resources to provide care; support from experts RM: continuous audit and feedback	C: None reported CP: Competing organisational priorities reduce commitment to LCP CA: Poor integration with medical system records RM: Too few deaths to develop expertise

Sleeman (2015) England	To understand healthcare professionals' perceptions of the benefits and potential harms of integrated pathways for end-of-life care	Qualitative interview study and thematic analysis	13 nurses, 9 doctors, 3 allied health professionals One south London hospital	C: Integrated pathway provides symbol of shift in care CP: Novice clinicians can see their role in integrated end of life care CA: The pathway provides a communication tool between clinicians; using the tool enhances learning about care of the dying RM: None reported	C: Concerns the pathway would be applied too rigidly by junior staff – limited to a tick box exercise; narrowly defines patients as dying or not dying CP: None reported CA: None reported RM: None reported
Thurston (2012) New Zealand	Explore nurses' experiences of the introduction of the Liverpool Care Pathway	Qualitative focus groups using content and thematic analysis	Two focus groups; one from medical ward (n = 5 nurses) and surgical ward (n = 5) in one tertiary teaching hospital	C: LCP is a good guide CP: LCP legitimates nurses role in care for the person who is dying in a culture focused on cure CA: LCP improves communication between team and family; nurses felt confident to challenge doctors on care aspects RM: Evaluation documentation provides debriefing for nurses	C: Concerns regarding transition from 'cure' to 'care', opioid use, and being too close to patients CP: CA: Prefer meaningful qualitative words to tickbox; some doctors do not use the LCP RM: None reported

Walker (2010) England	Explore doctors' and nurses' experiences of using the Liverpool Care Pathway	Qualitative using descriptive phenomenology	1 doctor and 5 nurses Intensive care unit in one hospital in northwest midlands district	C: None reported CP: None reported CA: Consistent documentation improves communication RM: None reported	C: Cynical about how the LCP improves care; doctors not familiar with LCP; families misunderstand the diagnosis CP: CA: Nurses need to suggest commencement of LCP while doctors are responsible; Documentation is doubled RM: None reported
Verhofsted (2016) Belgium	Determine the feasibility of implementing the Care Programme for the Last Days of Life	Two phase mixed methods study including observation, interview and use of a quantitative process evaluation tool	4 geriatricians and 39 nurses Acute geriatric ward in one hospital	C: None reported CP: Nurse and physician facilitators engaged staff CA: Documentation assisted communication between team members RM: None reported	C: Physicians disagree with content of the Programme CP: Physicians remained unengaged in training, audit CA: Steering group lacked authority/ influence from management; documentation was not completed RM: None reported

C = coherence; CP = cognitive participation; CA = collective action; LCP = Liverpool Care Pathway; MDT = multidisciplinary team; PCAD = Palliative Care for Advanced Disease; RA = reflexive action

Table 3. Draft organisational readiness heuristic for implementing the integrated care of the dying pathway

	Criteria	Coherence	Cognitive participation	Collective action	Reflexive monitoring
Capacity – organisation (checklist)	An education program about principles of palliative care is accessible	F			
	A change facilitator is appointed		F		
	Senior executives are committed to integrated care pathway		F		
	Middle managers are committed to integrated care pathway		F		
	An education program about how to use the integrated care pathway is accessible		F		
	An education program about how to raise the issue of dying (communicate) is accessible		F		
	Clinicians have access to experts in palliative care		F		
	Integrated care pathway implementation is a standing item on local multidisciplinary team meeting agendas			F	
	Private spaces for families meetings with staff are available in the ward area			F	
	Increased staffing ratios provided in areas with people on integrated care pathways (psychosocial care)			F	
	The culture supports interdisciplinary practice			F	
	Multidisciplinary team members have established communication mechanisms such as regular team meetings			F	
	Care of the dying is incorporated into the routine audit program			F	F
	Clinicians view integrated care pathways as:				
Capacity - innovation-specific (staff factors)	• A guide to prompt care	F			
	• Aligned with their understanding of EB requirements	F			
	• A vehicle to honour a good death	F			
	• Providing structure to end of life care	F			
	• A mechanism to enhance communication with family and patient	F			
	• An administrative burden	B			
	• A checklist	B			

Criteria	Coherence	Cognitive participation	Collective action	Reflexive monitoring
• More important than palliative care	B			
• A classification measure: those dying and not dying	B			
• An opportunity to work collaboratively with other disciplines	F	F		
• A mechanism to facilitate frank discussions across disciplines		F		
• A mechanism to facilitate frank discussions with families and patient.		F		
Clinicians view junior colleagues' rigid application as a limitation	B			
Clinicians view death as a medical failure	B			
Clinicians' confidence to withdraw treatments and manage pain increased with integrated care pathway		F		
Clinicians not able to recognise impending death		B		
Clinicians integrated care pathway documentation as lengthy		B		
Clinicians are aware of the negative connotations of integrated care pathway held in some parts of the community				B
Clinicians recognise limitations of integrated care pathway in situations when interdisciplinary conflict exists or complex family negotiations are required.				B
Capacity – motivation (to use the pathway)				
Clinicians want to provide quality end of life care	F	F		
Clinicians believe that the integrated care pathway legitimises end of life care in acute settings	F	F		
The integrated care pathway provides clear goals, guidance and support for effective EOL care	F	F		
The integrated care pathway is a complex document to engage with in practice		B		
The integrated care pathway supports communication amongst team members			F	

facilitator= F; barrier = B