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Patient safety

In this article...
● The role of treatment escalation and limitation plans in advanced care planning
● Using treatment escalation and limitation plans as an aid to clinical decision making
● Forward planning of care should be developed by daytime clinicians

Using treatment escalation and limitation plans to ensure appropriate emergency care

Key points

A treatment escalation or limitation plan outlines what interventions are likely to be appropriate for patients considered to be in the last 12 months of life. These plans can help emergency staff decide on the best course of action for patients whose condition is deteriorating.

Treatment escalation and limitation planning is underused and often instigated too late.

Daytime clinicians, not emergency staff, should create treatment escalation and limitation plans.

On medical and surgical wards these plans could improve the care that is delivered by emergency care teams.

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Abstract
Treatment escalation and limitations plans improve staff communication and reduce medical harm in hospital for vulnerable patients. One trust in NHS Lanarkshire carried out an evaluation of 50 consecutive calls to the emergency care team to see whether treatment escalation and limitations plans were used appropriately. It found only four out of 26 patients who were considered likely to be in their last year of life had such plans, and 19 died within six months of the emergency call. It concluded that treatment escalation and limitation plans initiated early on during a patient’s admission by clinicians delivering regular daytime care could improve the care delivered out of hours by emergency care teams for patients who are unstable or at risk of dying.

Citation

Keywords
Emergency care team/Advance care planning/Patient safety

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The primary role of hospital emergency care teams (HECTs) is to promptly identify and treat patients who are acutely deteriorating; a secondary aim is decreasing the frequency of cardiac arrests, serious adverse events and inappropriate interventions to reduce, for example, admissions to intensive care units (ICUs) (Jones et al, 2012). When a patient deteriorates out of hours, HECTs often have to make decisions when they are unfamiliar with the context of the patient’s deterioration. There is significant pressure to make decisions quickly, often with limited information about the patient’s management plan. In addition, patients who are acutely ill often lack capacity to express their priorities or wishes, and participate in treatment decisions (Sulistio et al, 2015).

In Scotland, around 30% of patients admitted to acute hospitals are in the last year of life (Clark et al, 2014). Predicting exactly when death is going to occur is inherently difficult and a vital element is timely communication with patients and their families about the likely course of the patient’s illness, including the possibility of dying, so they can express their values, beliefs and choices about treatment options to ensure appropriate care.

This has significant implications. A third of patients reviewed by emergency teams need end-of-life care that has either not been recognised or documented previously (Coombs et al, 2016; Sulistio et al, 2015). One single-centre study found emergency teams participated in resuscitation decision making in 10% of cases (Jones et al, 2007), while another two studies found 8-10% of emergency team reviews resulted in a new or altered Do Not Attempt Cardio-pulmonary Resuscitation (DNACPR) status (Hillman et al, 2005; Buist et al, 2002).
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Over-treatment in this context is common and often futile. In a systematic review of 38 studies involving 1.2 million patients, Cardona-Morrell et al (2016) reported that 33-38% of major interventions (for example, ICU admission and renal dialysis) were non-beneficial if given to patients in the last 12 months of life. It is likely that decision making by emergency teams contributes to these outcomes.

A treatment escalation or limitation plan (TELP) attempts to address these problems. This is a communication tool that determines whether interventions are likely to be appropriate or inappropriate (potentially futile, harmful and/or contrary to patient’s wishes in the event of clinical deterioration). In NHS Lanarkshire, TELPs (known locally as Hospital Anticipatory Care Plans) have been used since 2016.

The TELP extends the scope of a traditional DNACPR order and has been shown to reduce harm from over-treatment in patients for whom death is inevitable and undertreatment in patients who need symptomatic relief at the end of life (Lightbody et al, 2018). In addition, a TELP could also reduce the risks of moral distress among staff (Piers, 2014). However, TELPs are still not widely used. Casamento et al (2008) reported that only 19.1% of patients for whom an emergency team had been called had a TELP, and a further 12.3% were given a TELP after the call to the emergency team had taken place. Similarly, Jones et al (2012) found that only 30.7% of patients had a TELP and, in 9.8% of these cases, it had been initiated by the emergency team. These findings show the need to improve advanced care planning in acute care, especially for patients who experience rapid deterioration.

Evaluating use of TELP

University Hospital Wishaw is a district general hospital in Lanarkshire with 633 inpatient beds. The hospital’s out-of-hours urgent care is provided by the HECT, comprising nine advanced nurse practitioners.

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HECT nurses are the first responders to acute deterioration in ward-based patients and calls are triggered when a patient’s National Early Warning Score (NEWS) increases or if any ward staff have clinical concerns about a patient. HECT nurses are also first responders to cardiac arrest/medical emergency calls and have advanced skills, including clinical assessment, critical reasoning, diagnosis, ordering investigations (including radiology), treatment planning and prescribing medication.

A study was conducted to see whether:

- TELP was used appropriately for patients at the hospital;
- The presence of a TELP had influenced, or would have influenced, out-of-hours clinical decision making in patients who were deteriorating, as determined by an advanced nurse practitioner in the HECT.

Method

The study was carried out between February and March 2018 and included adult inpatients in medical, surgical, orthopaedic and older people’s wards. A HECT nurse collected the data for 50 consecutive calls and conducted a full clinical assessment for each. The data was collected using a standardised pro forma; this was piloted to ensure ease of completion and that no vital information was missing, before minor adjustments were made and retesting carried out. The nurse completed the pro forma immediately after assessing each patient using data from the patient’s clinical notes. This included:

- Demographics;
- Reason for admission;
- Relevant medical history;
- Presence or absence of a TELP and DNACPR form;
- Reason for the HECT call;
- Whether the HECT interventions were, or would have been, guided by a TELP.

The Gold Standards Framework (GSF) Proactive Identification Guidance (PIG) (Thomas et al, 2016) is a tool to identify people on a likely end-of-life trajectory, who could die within the next 12 months. It helps identify early a patient’s likely needs, consideration of their preferences and better care planning. The tool was used for all the study patients. If there was doubt about their GSF status, patients had their case notes independently reviewed by a senior clinician before a decision was made.

Patients’ clinical notes were retrospectively reviewed on the clinical portal to determine if a TELP or DNACPR form had been completed after the HECT assessment during the patient’s admission, and patients were followed up at six months to check if they were still alive. Data was entered into a database designed by NHS Lanarkshire clinical audit staff, and analysed by a clinical quality coordinator using the health board’s software package.

Results

Data from 50 consecutive HECT calls showed 24 patients were male and 26 were female; the mean age was 69.2 years. Most (n=39) calls were in general medicine wards; eight were in care of older people, five in general surgery and seven in orthopaedics. At the time of the HECT call, four patients had both a TELP and a DNACPR.

Box 1. Results from 50 HECT calls

- 26 out of 50 patients were deemed likely to be in the last year of life
- 19 out of 26 patients died within six months of the HECT call
- Only four out of 26 patients had a TELP at the time of the HECT call
- Following the HECT call, a TELP was completed for a further 12 patients
- The TELP influenced decision making in two out of four patients
- It was found that a TELP would have influenced decision making for nine of the remaining 46 patients

HECT = hospital emergency care team; TELP = treatment escalation or limitation plan

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form in place, eight had a DNACPR only and 38 had neither. After the HECT call, and before discharge or death, a further 12 patients had a TELP completed (mean: 1.9 days later) and seven had a DNACPR form completed (mean: 7.9 days later).

Patient outcomes. Of the 50 calls, two patients died (4%) within 24 hours of being reviewed by the HECT nurse (both were cardiac arrest calls). A further 20 (40%) died within six months. The median time from hospital admission to HECT call was five days, and 15.5 days from HECT assessment to time of death (range 0-118 days).

Using PIG, 26 of the 50 patients (52%) were identified as being on an end-of-life trajectory (Box 1). Of these, two (8%) died within 24 hours and 17 (65%) died within six months of the HECT call (Table 1). Of the 26 patients:

- Four had a TELP and DNACPR before the HECT call;
- Eight had a DNACPR before the HECT call and a TELP was completed for five of them after the HECT call;
- Seven had neither a TELP or DNACPR before the HECT call, but both were completed later during the hospital admission;
- Seven had neither a TELP nor a DNACPR at any time during their hospital admission.

Of the 24 patients considered not to be in the last year of life using PIG, three died within six months of the HECT call. None of these patients had a TELP or a DNACPR form completed during their admission. The sensitivity of PIG for death within six months of the HECT call, the TELP helped guide clinical decision making in two of them (two were reviewed for a fall and one for pyrexia). However, the presence of a TELP may have (n=10) or definitely would have (n=9) guide decision making in the other 19 patients.

In the 10 patients for whom a TELP may have guided clinical management, most were seen because of an increasing NEWS (+/- sepsis and one patient was moved to an HDU). Those nine patients for whom the nurse judged a TELP would definitely have influenced clinical decision making all had arterial blood sampling, which may have been inappropriate unless they were escalated to a higher level of care. Three of these patients experienced a cardiac arrest, two did not recover, and one had a return of spontaneous circulation but later died. One patient had a peri-arrest call and was moved to an HDU, where a DNACPR and a TELP were put in place but the patient subsequently died.

Discussion

The study showed that over half of the HECT calls were for patients who were likely to be in the last year of life (using GSF PIG criteria). Although 12 of these patients had a DNACPR, only four had a TELP. The TELP helped guide clinical decisions in half of patients who had one, and would definitely have supported decision making in another nine patients had it been present. A TELP was completed after the HECT call by the patient’s medical team, often following a recommendation by the HECT nurse.

These findings suggest that treatment escalation and limitation planning in acute care is underutilised, with potential for significant improvement. This is especially true given the frequency with which the HECT nurse recommended that a TELP should be created for those patients who did not have one, and confirms the findings of earlier studies by Jones et al (2012) and Casamento et al (2008).

Out-of-hours decision making is often fraught with difficulty when discussions around end-of-life care have not taken place (Jones et al, 2012). Historically, an emergency team response is based on assessing clinical instability in terms of organ dysfunction and correcting what is abnormal. This often leads to narrow, physiologically focused “do-everything-possible” interventions that may be inappropriate. As with inappropriate cardiopulmonary resuscitation, such interventions (ranging from arterial blood sampling to mechanical ventilation) can cause harm to patients.

It would be much better for TELPs to be completed earlier for patients who are vulnerable, for example by acute care clinicians delivering regular daytime care during a hospital admission, so plans are already available should patients become unstable. Advanced care planning using TELP should take account of age, comorbidities, any established illness trajectory and the patient’s perspectives and choices about medical interventions.

The use of TELPs is still relatively new and there is a need for more education to raise awareness of their benefits as well as the process for generating them. Although the mechanism for creating a TELP is complex, several studies have shown that they reduce the frequency of harms and non-beneficial interventions (Lightbody et al, 2018; Fritz et al, 2013). This is particularly important in patients who are nearing the end of life, when the risk–benefit ratio for interventions is high and they are more likely to be futile. Possible harms to the patient resulting from such interventions can include psychological distress and neglect of palliative treatments.

The GSF PIG is based on assessing pre-admission comorbidities and performance status and “surprise questions” (Thomas et al, 2016). Over half of the emergency calls in this study were for patients considered to be on an end-of-life

### Table 1. Mortality at six months in 50 consecutive patients assessed by HECT nurse practitioner

<table>
<thead>
<tr>
<th>Died within six months of HECT call</th>
<th>Gold Standards Framework: “likely to be on an end-of-life trajectory”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>21</td>
</tr>
</tbody>
</table>

**Note:** HECT = hospital emergency care team

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trajectory and nearly three-quarters of those patients died within six months. By contrast, among those patients considered not to be on an end-of-life trajectory, just over a tenth died within six months. The data may have been more robust if the study had been continued for 12 months, but it still suggests that the performance characteristics of the GSP tool are high enough to justify constructing a TELP. Together with the outcomes of a prognostic conversation with patients and/or their families about their treatment preferences, determining those patients who are at risk of dying forms the critical basis for advance care planning in a hospital ward.

One limitation of the study is that it comprised 50 consecutive calls to a single HECT nurse with no exclusions. Although the sample is fairly representative of typical calls to the HECT, a larger sample size would have allowed assessment of outcomes in a greater number of patients who had a TELP. This study is also limited to data obtained from a single hospital and, as such, should be interpreted in this context – the results may not be transferable to other settings.

**Conclusion**

Use of a TELP can improve out-of-hours decision making by a HECT and has the potential to reduce patient harm and non-beneficial treatment, as well as potentially supporting staff to care for patients. TELPs are often not instigated until after a HECT call has taken place, but this is too late. A decision to complete a TELP should be made by the medical and nursing staff responsible for a patient’s regular care, rather than it being left to the emergency care team.

**References**


