

Title: Do Not Attempt Cardiopulmonary Resuscitation (DNACPR): a cohort study of older patients admitted to acute medical wards

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ABSTRACT

Objectives

A decision not to attempt cardiopulmonary resuscitation (DNACPR) in the event of cardiorespiratory arrest requires a discussion between the doctor and the patient and/or their relatives. We aimed to determine how many older patients admitted to acute medical wards had a pre-existing DNACPR decision, how many had one recorded on the ward, and how many of those who died had a DNACPR decision in place.

Methods

A prospective cohort study, using data from medical records, of 481 consecutive patients aged ≥ 65 years admitted to the six acute medical wards of the John Radcliffe Hospital, Oxford.

Results

105/481 (22%) had a DNACPR decision at ward admission, 30 of which had been made in the emergency unit. A further 45 decisions were recorded on the ward, mostly after discussion with relatives. Of the 37 patients who died, 36 had a DNACPR decision. For the 20 deceased patients whose DNACPR decision was recorded during their admission, the median time from documentation to death was four days with 7/20 (35%) recorded the day before death.

Conclusions

Older patients with multimorbidity need the opportunity to discuss the role of CPR earlier in their care and preferably before acute hospital admission.

INTRODUCTION

An advance decision about whether cardiopulmonary resuscitation (CPR) should be attempted is important for all patients at high risk of death from cardiorespiratory arrest. Such a decision requires a discussion between the doctor and the patient and/or their relatives.¹ If it is decided that CPR is not to be used, this 'do not attempt CPR' (DNACPR) decision must be recorded and made available to all relevant healthcare professionals, usually on a special form. The importance of patient involvement in DNACPR decisions was recently highlighted in a report that was critical of the care of older people during the COVID-19 pandemic.²

Older people admitted to acute medical wards typically have multiple chronic illnesses (multimorbidity) and are at risk of dying during their hospital admission.^{3,4} If they suffer a cardiorespiratory arrest in hospital, CPR will be attempted unless a prior DNACPR decision has been recorded. CPR is an invasive and potentially undignified procedure from which older patients with multimorbidity are unlikely to have a good outcome; most older patients who receive CPR in hospital die before discharge.⁵ An advance decision about CPR, following a discussion that they are able to actively participate in, is therefore especially important for such patients.

Previous research has suggested that physicians find it more difficult to have end-of-life conversations (including discussions about CPR) with older patients who have multimorbidity, than with patients who have a clear terminal diagnosis, such as an advanced cancer.⁶ Studies have also found that, in this group, DNACPR decisions tend to be made late in the patient's illness and when they are seriously unwell.^{7,8} However, we still lack information about DNACPR decisions for older patients with multimorbidity who have been admitted to acute medical wards in the UK.

In this cohort study, we aimed to determine how many older patients, admitted to the acute medical wards of a UK National Health Service (NHS) teaching hospital, had a pre-existing DNACPR decision,

how many had one recorded whilst they were on the ward, and how many of those who died had a DNACPR decision in place.

METHODS

We studied a cohort of consecutive patients aged ≥ 65 years who were admitted to the six acute medical wards of the John Radcliffe Hospital, in Oxford UK, between 13th May and 22nd June 2017 (if a patient was admitted more than once during this period, we included only the information from their first admission).

We collected the following data from each patient's medical records: age; sex; diagnoses; medications; presence of a DNACPR decision on arrival at the ward; documented discussions about DNACPR during the ward stay; whether and when a new DNACPR decision was made; and death. We continued to collect data until the patient left the acute medical ward (because they were discharged from hospital, died or were transferred to a different area of the hospital). Data collection was censored at 28 days after admission to the ward.

The study was reviewed by the hospital research and development (R&D) department and classified as a service evaluation, not requiring ethical approval.

RESULTS

481 patients aged ≥ 65 were admitted to the hospital's acute medical wards during the study period. These patients had a mean age of 82 years and 208/481 (43%) were female. They had substantial medical multimorbidity; the mean number of diagnoses recorded on admission was five and the mean number of medications prescribed was eight. Patients stayed in the ward for a median of four days.

105/481 (22%) patients had a DNACPR decision recorded in their medical records on arrival at the ward. 30 of these decisions had been made in the hospital emergency unit en route to the ward, 34 had been recorded during a previous hospital admission and 41 had been completed by the patient's GP.

Discussions about CPR took place on the ward for 48 (13%) of the remaining 376 patients (16 of these discussions were with patients alone, 30 with relatives alone, and two with both) and resulted in an additional 43 DNACPR decisions. An additional two decisions were made without discussion (both for patients with severe cognitive impairment and unavailable relatives). In total therefore 150/481 (31%) patients in the study cohort had a DNACPR decision recorded either prior to, or during, their admission.

37/481 (8%) patients died. All but one of these had a DNACPR decision in place. It was notable that most (20/36) of these decisions had been recorded during the hospital admission (8 in the emergency unit and 12 on the acute medical ward). For the 20 deceased patients whose DNACPR decision was recorded during their admission, the median time from the decision to death was four days with 7/20 (35%) made the day before the patient's death.

DISCUSSION

We found that only a fifth of a cohort of older patients, who had been admitted to the acute medical wards of a UK NHS teaching hospital, had a DNACPR decision in their records when they arrived on the ward. The majority of these decisions had been made in the hospital emergency unit, en route to the ward, or recorded during a previous hospital admission. These findings indicate a low rate of decision-making about the use of CPR other than in the context of an acute admission (even if we allow for some decisions not coming with the patient from home to hospital). Older patients with multimorbidity are not only at increased risk of receiving CPR but also high users of health care. It is therefore likely that many opportunities to address the issue of CPR in the non-acute setting have been missed. A low rate of DNACPR decisions recorded prior to acute hospital admission has been previously noted in both the United States and in Australia, although a much higher rate was reported recently in the Netherlands.⁷⁻⁹

We also found that a number of discussions and associated decisions about CPR occurred on the acute medical ward. The majority of these discussions were with the patients' relatives alone, as the patients themselves were, by then, too unwell to actively participate. Whilst the need to make a decision about CPR may only become pressing during an acute episode of illness requiring medical admission, it is generally accepted that this is not the best time or place for the important discussion about CPR to be held.¹⁰

In keeping with the age and morbidity of the patient cohort studied, almost one in ten died during their ward admission. It is notable that despite only a third of the cohort having a recorded DNACPR decision, all but one of those who died had one. This finding may be seen as encouraging, in so far as it indicates that ward doctors were able to predict which of these older patients were at risk of cardiorespiratory arrest and discuss CPR before this occurred. It is however less encouraging that

more than half of these decisions were made, and the associated discussions held, in the environment of a hospital ward, and often just before the patient died.

There is a consensus that DNACPR discussions should ideally occur earlier rather than later in a patient's illness when they are well enough to fully participate, family members can be involved and the discussion can take place with a doctor the patient knows and trusts.¹⁰ For the patient group we report on here, this will usually mean that the issue has been addressed long before the patient is admitted to hospital. There are however a number of potential barriers to such earlier discussions: First, it may be difficult to predict prognosis and consequently to initiate discussions about CPR and end-of-life care for patients who have multimorbidity, rather than a single clear terminal diagnosis.⁶

¹¹ Second, doctors may be concerned that the patient lacks the mental capacity for such a discussion.¹² Third, doctors may find such discussions difficult and consequently defer them until such time the conversation becomes unavoidable.¹³ Finally, patients and their relatives may not initiate a discussion with the doctor because they lack adequate knowledge about the nature of CPR or think that their doctor should be responsible for bringing up the topic.^{14 15}

We present new data on the frequency and timing of DNACPR decisions in older medical inpatients. The main strength of this study is the inclusion of a consecutive cohort of patients aged ≥ 65 who were admitted to acute medical wards, regardless of their medical condition, cognitive function, place of residence or expected length of stay. Its main limitations are that it took place in one hospital and used data from hospital records only up to 28 days from ward admission. The study also took place before the COVID-19 pandemic, which may have increased awareness of the need for DNACPR decisions. A study done during the pandemic reported that a third of patients admitted to hospital with COVID-19 had a documented DNACPR decision made before, or on, the day of admission and that the patients with DNACPR recommendations were older and sicker.¹⁶ Another recent study suggested that the pandemic has led to a higher rate of DNACPR documentation

amongst medical inpatients.¹⁷ It may be that the pandemic has led to a persisting change in the frequency and timing of DNACPR decisions, although the limited changes reported over many years prior to the pandemic, suggest that this may be unlikely.¹⁰

CONCLUSION

Older patients admitted to acute medical wards are at high risk of cardiorespiratory arrest, but are unlikely to have a good outcome from CPR. We found that only a minority of patients had a documented DNACPR decision at the time of acute admission to hospital. As a result, many DNACPR decisions had to be made in hospital, often when the patient was severely ill and close to death.

Changes in priorities will be required if we are to address this repeatedly documented failure to achieve timely DNACPR decisions. In an increasingly busy clinical environment, discussions about DNACPR are often left to another time or to another clinician. As a result, the conversation and decision happen all too often during an emergency admission, with a clinician caring for an extremely ill patient. It would be a positive step if all clinicians caring for patients with multimorbidity in non-acute settings seized the opportunity to address this issue with their patients. This change in practice is only likely to come about by education of doctors and by education of the public so that all concerned understand the reality of CPR and the need to discuss its role well before it is needed. Palliative care professionals have a particularly important role in education about the need for earlier discussions about CPR and end-of-life care as well as in the education, training and support recently called for by the English Care Quality Commission.²

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COMPETING INTERESTS

None.

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