


Moving from “Do Not Resuscitate” Orders to Standardized Resuscitation Plans and Shared-Decision Making in Hospital Inpatients

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Colette Dignam, MBBS, FRACP^{1,2} , Margaret Brown, BA, MSc, MPH³,
and Campbell H Thompson, BSc, MD, FRACP, MSc, DPhil^{1,2}

Abstract

Not for Cardiopulmonary Resuscitation (No-CPR) orders, or the local equivalent, help prevent futile or unwanted cardiopulmonary resuscitation. The importance of unambiguous and readily available documentation at the time of arrest seems self-evident, as does the need to establish a patient’s treatment preferences prior to any clinical deterioration. Despite this, the frequency and quality of No-CPR orders remains highly variable, while discussions with the patient about their treatment preferences are undervalued, occur late in the disease process, or are overlooked entirely.

This review explores the evolution of hospital patient No-CPR/Do Not Resuscitate decisions over the past 60 years. A process based on standardized resuscitation plans has been shown to increase the frequency and clarity of documentation, reduce stigma attached to the documentation of a No-CPR order, and support the delivery of medically appropriate and desired care for the hospital patient.

Keywords

decision-making, palliative care, public health/public policy, advance directives, communication

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Introduction

In the absence of a medical directive to the contrary, cardiopulmonary resuscitation (CPR) is the default hospital response to a cardiac or respiratory arrest. This intervention is therefore routinely performed on dying inpatients without consideration of the patient’s underlying disease process, likelihood of benefit, or even whether the patient wishes to be resuscitated.

A “Not for cardiopulmonary resuscitation” (No-CPR) order or local equivalent can prevent unwanted or futile CPR. An order of such paramount importance would ideally be readily accessible in the medical record, easily understood, and considered in advance of any subsequent clinical deterioration. Instead, documentation quality is highly variable, ad-hoc in nature, and the rates of pre-emptive discussions with patients or their nominated substitute are unacceptably low.

Clinicians, hospital administrators and courts of law have grappled with the questions of who is responsible for deciding which patients should receive CPR, how this decision should be communicated to the patient, and the best means to record this decision in clinical

documentation. To date, there is still no international consensus. The need for pre-emptive and considered decisions about providing resuscitation has been further highlighted by the recent coronavirus-19 outbreak, where clinicians and hospital administrators have been required to make urgent and complex decisions about resource allocation in the setting of overwhelming need.

In this narrative review, we explore how the documentation of in-hospital No-CPR decisions has evolved in the past 60 years, including the ethical basis for withholding CPR, the pitfalls of a stand-alone No-CPR order and the transition to resuscitation plan initiatives as a means of documentation. In doing so, we aim to determine the optimum method for discussing and

¹University of Adelaide, SA, Australia

²Royal Adelaide Hospital, SA, Australia

³University of South Australia, Adelaide, Australia

Corresponding Author:

Colette Dignam, MBBS, FRACP, Adelaide Medical School, University of Adelaide, 30 Frome Road, Adelaide, SA 5000, Australia.
Email: colette.dignam@adelaide.edu.au



documenting recommendations about end-of-life care including cardiac arrest, in order to best support a patient's treatment preferences AND support appropriate medical care.

Definition of Not for CPR (No-CPR) Orders

Not for CPR (No-CPR) orders refers to any written communication by a medical professional that states or implies that CPR should be withheld in the event of cardiopulmonary arrest. This nomenclature will be used throughout the paper, unless an alternative descriptor is used in a referenced study.

Methodology

Given the breadth of the topic in question, a critical narrative review was deemed the most appropriate approach. Between inception and December 2019, searches were completed using the electronic database PubMed, Cochrane Library and Scopus. Papers reviewing all aspects of inpatient No-CPR documentation, decision-making and policy implementation were considered. All study designs including review articles were included, with the exclusion of articles not written in English. Following review of title or abstract, reference lists of relevant articles were reviewed. While papers from any country of origin were included in the initial search, the review ultimately focused on practice in Australasia, North America and United Kingdom due to both the available literature, and a consensus by the authors that the research question was best addressed through focusing on nations with a shared language and relatively similar cultural context. Where a study from an alternate nation has been included, this is highlighted.

An Ethical Argument for Withholding CPR

The universal provision of CPR to all inpatients is predominantly driven by the ethical principle of beneficence, and places utmost value on the sanctity of life. Any delay in starting CPR increases mortality and morbidity. However, prompt initiation occurs at the expense of a balanced consideration of the risk/benefit profile for the individual patient. Even 60 years ago, the potential harms associated with CPR were well recognized. A monograph in 1965 stated:

“Resuscitation of the dying patient with irreparable damage to the heart, lungs, brain, or any other vital system of the body has no medical, ethical, or moral justification.” (Talbot, 1965, p. 1).

Despite technical advancements and the use of No-CPR orders prior to many expected inpatient deaths, CPR is still associated with survival rates of less than 10% in patients aged over 80 years, and in those with

disseminated malignancy or end stage organ failure (Mills et al., 2017; Nolan et al., 2014). Morbidity outcomes are similarly poor, including a greater chance of prolonged intensive care unit admission, of rib fractures, and of transient or permanent cognitive disability. A review of the UK National Cardiac arrest audit found that in the 10% to 15% of patients aged over 80 who are discharged alive from hospital following CPR, only one in five is able to live independently. (Nolan et al., 2014). US data has similarly shown that while survival to hospital discharge has improved, functional outcomes have worsened. (Kazaure et al., 2011)

Default CPR devalues a patient's autonomy and right to self-determination. Unwanted resuscitative measures can be psychologically traumatic for families and staff alike.

“Mum didn't want heroics. She knew she was dying. I was horrified when I heard she got 45 minutes of CPR. She did not want it. All anyone had to do was ask. I feel very hurt and hurt for my mum and my sister.” (Detering et al., 2010).

The cost of providing CPR and post-resuscitation care is considerable, and this additional cost is not necessarily associated with improved outcomes. In the US, the cost of hospital care in CPR recipients has increased for both survivors and decedents, as has the use of mechanical ventilation and artificial feeding (Nolan et al., 2014).

Withholding CPR therefore requires a clinician to balance respect for sanctity of life against other key principles of ethical medical practice: nonmaleficence, respect for patient autonomy, and the provision of health care that is just and equitable within the setting of finite resources (Beauchamp, 2001). This balancing act is by no means novel; clinicians regularly consider these ethical values in their decision-making, whether it be stopping life-prolonging chemotherapy in the face of intolerable adverse effects, or not offering an organ transplant to a frail older patient. Failing to acknowledge this ethical complexity may result in considerable harm to the patient and their loved ones, as well as undermining the trust that the public puts in the medical profession.

Barriers to the Use of No-CPR Orders

Despite a longstanding recognition of the potential for CPR to cause harm, patients who are poor candidates for CPR continue to receive it, (Perkins et al., 2012) with UK data suggesting that a “Do Not Attempt CPR” decision should have been made prior to arrest in 85% of cases where CPR was performed (Perkins et al., 2012). The inadequate implementation and documentation of appropriate No-CPR decisions is the result of a number of barriers that must be addressed before any sustainable change in practice can be achieved (Georgiou and Georgiou, 2019; Mockford et al., 2015).

In terms of barriers involving the patient, a predominant theme is that patients and family members overestimate survival rates after CPR and underestimate the likelihood of neurological impairment, thereby reinforcing a belief in the benefits of CPR.

Another factor that shaped the general public's attitude toward CPR was the widespread dissemination of first aid and first responder campaigns, where the importance of decisive bystander intervention was emphasized and any possibility of harm downplayed. The fictional US-media similarly portrays CPR as an overwhelmingly successful and lifesaving intervention, with TV survival rates following arrest as high as 69%. (Portanova et al., 2015) In addition to fueling the general public's belief in the power of CPR, bystander campaigns perhaps created a culture where the provision of CPR was no longer viewed as a medical privilege, but rather, as a "right to life" that anyone could bestow.

The barriers involving clinicians include personal religious or cultural beliefs, fear of malpractice, inexperience, embarrassment, and a tendency to use medical jargon that prevents full patient participation in the discussion (Mockford et al., 2015). Clinicians may also assume that patients do not want to discuss CPR, or that doing so removes hope. In fact, most patients at risk of dying want to be asked about their treatment preferences including resuscitation wishes, and most do not find this discussion distressing (Cohn et al., 2013; Gorton et al., 2008). A survey of UK general outpatients by Gorton et al. (2008) showed that even in the 11% of respondents who thought they would be distressed by a discussion about CPR, half of these would still wish the doctor to initiate the conversation.

A further barrier that affects doctor-patient interactions is the potential for a No-CPR order to negatively impact on care. Australian data found that many doctors thought "NFR" and "for palliative care" were commensurate terms (Sritharan et al., 2017). A documented No-CPR order is independently associated with a higher inpatient mortality rate, and a lesser chance of ICU admission, intubation, or surgical intervention (Kazaure et al., 2011; McNeill et al., 2012). Even in a general ward setting, a patient with a No-CPR order is less likely to have blood cultures taken when febrile, to be prescribed an ACE-inhibitor in heart failure, and may receive less frequent nursing observations (Beach & Morrison, 2002; Chen et al., 2008; Cohn et al., 2013). This inappropriate abandonment of the patient is a concern shared by both doctors and their patients (Henry, 2016; Sritharan et al., 2017).

When considering the hospital system's role, identified barriers that have prevented the optimal use of No-CPR orders included time constraints of medical staff, inadequate provision of training and education, lack of cohesive guidelines or policy, and unavailability of senior staff to make decisions at the time of clinical deterioration (Georgiou & Georgiou, 2019; You et al.,

2015). In resource-poor countries, withholding CPR faces additional taboo because of a perception that the decision is being driven by financial constraints, rather than being a response to unbiased medical assessment (Gibbs et al., 2016).

The Sub-Optimal Documentation of No-CPR Orders

In response to these cultural, systemic, clinical and societal barriers, No-CPR orders became a topic of secrecy and controversy. This situation was exacerbated by a paucity of local or international guidelines, and a lack of educational resources or support for clinicians or indeed, for patients. Although there is considerable heterogeneity in practice, a common theme across North America, United Kingdom and Australasia is widespread professional and patient dissatisfaction, both with the indiscriminate provision of resuscitative measures, and the suboptimal quality of resuscitation documentation.

No-CPR decisions and in particular the process used to reach that decision, were often absent from case notes or recorded as an afterthought, while the details of any preceding communication with the patient or surrogate were rarely addressed (Thurston et al., 2014; Weinerman et al., 2015). World-wide examples of "Not for CPR" communications include a case note addendum marked with highlighter, a verbal handover only, a cryptic phrase such as "No Code" or "No 222s," or a coded symbol in case notes such as a round purple sticker, an "R-," or a red heart (Brown et al., 2014; Mockford et al., 2015; Youngner, 1987). Resuscitation documentation was ad-hoc, illegible and difficult to locate in an emergency (Brown et al., 2014; Mockford et al., 2015). In many instances, the patient or their family were unaware that the medical staff had unilaterally made a decision to withhold certain treatments. This paternalistic approach was not only a common occurrence, but a practice once advocated by eminent physicians (Murphy, 1988).

Decisions about end-of-life and resuscitation also occurred very late in the disease process (Yuen et al., 2011). This meant No-CPR orders were seen as a herald of death, adding to the stigma surrounding treatment limitations, and reinforcing the concept that a No-CPR order implied a palliative/conservative approach. The delayed timing of discussion and documentation also often meant that the patient was too unwell to be involved in the decisions, and a surrogate was consulted instead. Aside from the lost opportunity for patient autonomy, a lack of patient involvement is doubly concerning as surrogates often wrongly assume that a patient would want CPR (Yuen et al., 2011). Doctors performed as poorly as surrogates; correctly predicting patient resuscitation preferences less than half the time (Yuen et al., 2011).

Only 57% of 157 surveyed Australian public hospitals had a Not for Resuscitation policy, and just 39% had a

standardized order form (Sidhu et al., 2007). In the same year, a survey of nursing executives in the USA reported that 70% of participants could recall situations where confusion around a “Do Not Resuscitate” order led to problems in patient care (Sehgal & Wachter, 2007). More recently, a 2016 multi-center Canadian study of 808 seriously unwell patients found that in 37% of cases, there was a mismatch between a patient’s stated CPR preferences and what was actually documented (Heyland et al., 2016). The potential for medical error as a result of inadequate documentation and governance was significant.

Resuscitation Plans: The “New” No-CPR Order

What is a Resuscitation Plan?

In contemporary medical literature, an increasingly popular alternative to stand-alone No-CPR orders is a standardized resuscitation clinical care plan (resuscitation plan). A resuscitation plan is defined as a standardized document completed by a doctor responsible for a patient’s care in consultation with the patient and/or surrogate, which includes a directive about CPR, but also contains recommendations and/or limitations about other medical interventions. A resuscitation plan represents a shared patient-doctor decision that is then recorded by the medical practitioner. In the USA, the “Physician Orders for Life-Sustaining Treatment” form, or POLST, is the most recognized example (<http://polst.org>). Other titles in use elsewhere include emergency care plans, goals of care plans and ceilings of treatment plans (Fritz & Barclay, 2014; Mills et al., 2018; Pitcher et al., 2017).

Resuscitation plans are not simply new forms. They reflect an undergoing cultural shift that advocates for a change in the medical approach to resuscitation planning and medical treatment decisions. There is a renewed emphasis on early and considered medical decisions, transparent and honest communication with patients or their surrogates, and the delivery of appropriate medical care given a patient’s baseline health status, including a recommendation of a palliative or conservative approach when required.

The Benefits of Resuscitation Plans in Place of No-CPR Orders

In combination with appropriate education, clear policy and a supportive culture, resuscitation plans have the potential to overcome many of the patient, clinician and system-based barriers that previously impeded the effective implementation of No-CPR orders.

The ability to recommend treatments and therapeutic goals discrete to CPR may mitigate previous concerns about patient abandonment and inappropriate withdrawal of life-prolonging care. A randomized case vignette study in UK by Moffatt et al. (2016) compared

the treatment of deteriorating patients with a stand-alone Not-For-Resuscitation (NFR) order, an NFR order incorporated *within* a resuscitation plan, and a patient with no documented plan. While a patient with a stand-alone NFR order was less aggressively treated, those with a resuscitation plan received the same appropriate escalation of care (excluding CPR) as a patient with no documented treatment limitations. Retrospective research by Fritz et al. (2013) showed that the introduction of a resuscitation plan in place of a Do-Not-Attempt CPR (DNACPR) order was associated with a significantly reduced rate of medical error from inappropriately aggressive or conservative care, without any change to overall mortality.

Resuscitation plans also support appropriate care in the out-of-hours or Rapid/Emergency Response Team setting. Doctors and nurses report a high level of satisfaction using resuscitation plans due to the perceived ability to tailor care appropriately, including end-of-life care, and the reduction in stigma associated with documenting “Do Not Attempt CPR” (Dahill et al., 2013; Fritz et al., 2013). Junior doctors report that resuscitation plans improve communication about goals of care during medical handover, and increase speed of decision-making when reviewing patients in the out-of-hours setting (Dahill et al., 2013).

Comparative studies of before-after practice suggest that standardized plans improve the frequency of resuscitation discussions and decisions, with rates of documentation doubling in UK and Australian centers (Dahill et al., 2013; Dignam, Brown, et al., 2019). Both doctors and patients prefer framing a conversation about CPR within the context of a discussion about overall prognosis and other treatment preferences, with doctors reporting improved frequency of discussion with patients, and reduced discomfort with initiating discussions. Discussing treatment preferences including CPR within a broader framework of care has been shown to both improve patient quality of life, reduce distress, and reduce end-of-life costs (Mockford et al., 2015; Robinson et al., 2012). Doctors are less likely to defer responsibility for the conversation when there is a clearer framework for discussion, and when the hospital culture supports and encourages document completion.

How Guidelines Support the Use of Resuscitation Plans

In comparison to the previously noted lack of official oversight, the role of resuscitation documentation and in particular resuscitation plans is now recognized in many international guidelines.

The International Liaison Committee on Resuscitation (2005) recommends the use of standardized out-of-hospital physician orders that can be easily understood by emergency medical staff personnel, in patients who are chronically ill or have a terminal illness. The UK Resuscitation Council recommends a CPR decision be

considered for patients who wish to discuss it, for patients who are approaching end-of-life, or for patients with severe or terminal illness (Pitcher & Smith, 2015). The American Heart Association Guidelines recommend that doctors should initiate a conversation about CPR with all admitted hospital patients (or their surrogate) (Mancini et al., 2015). The Australian and New Zealand Resuscitation Council Guidelines (2015) support the use of pre-emptive documentation that honors a patient's known wishes regarding life-sustaining treatment. They also recommend that standardized, specific and detailed orders to limit life-sustaining treatments should be considered.

Australasia, North America, the UK and many European countries now use resuscitation plans in many centers, with both local and state-endorsed versions available. The common characteristics of these resuscitation plans are a standardized form, a focus on a broader framework of care rather than simply a CPR directive, and a recommendation that all decisions be discussed with the patient or surrogate if possible. In some countries, the onus of decision-making lies predominantly with the medical team and the medical team reserves the right to withhold inappropriate treatment. The POLST initiative instead maintains that a patient must always agree to any recommended treatment limitations, including No-CPR. Other key differences include the mandatory involvement of senior staff in creating the form, the style of the form in terms of free-text entry versus tick-box responses, and the legal status of the form in the community/first-responder setting.

The International Discrepancy in Use of Resuscitation Plans

Despite endorsement from ILCOR from 2005 onward, acceptance and use of both No-CPR orders and resuscitation plans still varies considerably between countries. Data obtained from the European death registry in 2006 showed rates of DNR orders before death ranged from 16% to 73% (Italy vs. Switzerland) (van Delden et al., 2006). A study by Gibbs et al. (2016) based on questionnaires to published medical authors from 43 countries found that while 94% of respondents thought that national guidance for DNACPR order implementation should exist, only 53% of respondents reported existence of such guidance in their country of origin. Respondents perceived that the implementation of a DNR policy could be influenced by cultural attitudes toward death, a lack of appropriate medical education and health economics or resource constraints.

The Future of Resuscitation Plans: Where to Next?

While resuscitation plans appear superior to No-CPR orders in terms of bedside clarity and patient involvement, there is an ongoing need for improvement in terms

of the terminology used, the scope and availability of the documented plan, and the educational support provided.

Addressing the Ambiguities in Language

Currently, the terminology used within resuscitation plans lacks universal consensus or standardized definitions. The lack of a single accepted definition for frequently used terms like "supportive care," "burdensome treatment," or "medical futility" creates uncertainty when attempting to follow a documented plan, and may result in incorrect treatment being prescribed (Hui et al., 2013; Levinson et al., 2017; Schneiderman, 2011). The heterogeneous nature of resuscitation plans and the varied language used in documentation also impedes high-quality comparative or multi-center research studies.

Achieving consensus is doubly challenging because the terminology in use continues to change. The shift from "Do Not Resuscitate" to "Do Not Attempt Resuscitation" was recommended to emphasize that most attempts at CPR are not successful, while "Allow Natural Death" is now favored in some parts of the USA (Breault, 2011; Henry, 2016). The terminology in the USA-based POLST resuscitation plan was updated in 2017, with "selective treatments" replacing "limited treatment" and "comfort measures" changed to "comfort-focused care" in an effort to champion that a certain type of care will be given, rather than that care is being withdrawn.

Changes of this nature are not simply literary semantics. The phrase "Allow Natural Death (AND)" in place of "Do Not Resuscitate" is associated with increased frequency and acceptance of resuscitation decisions (Fan et al., 2018). Amongst patients with advanced cancer in the USA, the term "supportive care" is viewed more favorably than "palliative care," and is associated with a greater perceived need and acceptance of the service (Maciasz et al., 2013). Finding the correct balance between acceptable euphemism and bedside clarity is an ongoing challenge.

Re-Considering the Treatment Scope

Although the uptake of resuscitation plans remains incomplete, overall, there has been a reduction in the number of patients who are dying without a No-CPR order/resuscitation plan in place (Chen et al., 2008; Sprung et al., 2019).

There are many other interventions that may be undesirable for the older patient however, and these should be subject to the same scrutiny as CPR. Approximately one-third of patients receive other non-beneficial interventions in their final 6 months of life, including surgery, transfusions and intensive care unit (ICU) admission (Cardona-Morrell et al., 2016; Kwok et al., 2011; Somogyi-Zalud et al., 2002). When given without due consideration of the patient's treatment preferences or long-term prognosis, even simple interventions such

as intravenous antibiotics or fluids may also be inappropriate, and have the same potential to prolong the dying process unnecessarily. Resuscitation planning could further support patient autonomy and equitable resource allocation by occurring much earlier in the disease trajectory, or even with patients who are not at risk of imminent death. In patients with a poor quality of life or a serious illness, the option of treatment refusal or a home-based management path could be discussed.

Systemic changes can reduce stigma and support patient awareness of conservative or out-of-hospital treatment options, while ensuring this does not result in patient abandonment. The increasing presence of palliative care in early cancer is one positive step, with similar models of integrated care now appearing in heart failure and renal failure clinics.

Improving Dissemination

A further challenge is to increase the frequency of resuscitation plans in previously under-represented medical and surgical directorates. Resuscitation plans are more commonly discussed and completed in certain medical specialties including palliative care, geriatrics and internal medicine, while patients admitted under surgeons, proceduralists, and to private hospitals are less likely to be consulted about their resuscitation preferences (Yuen et al., 2011).

An expanded role for outpatient advance care planning should also be embraced, especially given the widely held patient preference to discuss treatment goals before they are acutely unwell, and with someone they trust (Risk et al., 2019). Expanding current community models may avoid unwanted hospital admissions by allowing for community-based family practitioners and internists to provide tailored care, including palliative care, in the home or residential care setting. The shift to electronic and/or centralized government records will further increase the visibility and cross-center availability of resuscitation documentation and should be approached with due consideration.

Reforming Medical Education and Training

As previously discussed, physicians report a lack of education and inexperience as barriers to effective resuscitation planning. Although some hospitals have used targeted short-term educational campaigns at the time a new resuscitation plan is introduced (Dignam, Thomas, et al., 2019; Risk et al., 2019) available training opportunities are inadequate, with knowledge deficiencies evident in the few studies that have examined this (Risk et al., 2019).

There is a lack of randomized, multi-center or large studies examining how medical education influences the success or otherwise of standardized resuscitation plans (Field et al., 2014). Accurate and informed patient counseling about CPR and prognoses *has* been shown to alter

patient treatment preferences about No-CPR orders; a US-based survey of older patients showed that when they were accurately informed of CPR success rates (quoted at 10%–17% in the study), many patients revised their treatment wishes (Murphy et al., 1994). When the study's doctors also discussed prognosis and predicted a life expectancy of <12 months, only 5% of patients opted for CPR (Murphy et al., 1994).

Improving clinician access to training and education opportunities could improve clinicians' knowledge, understanding and comfort with this end-of-life topic, and the importance of seeking a patient's wishes.

Conclusions

Resuscitation documentation has become an integral part of modern hospital medicine as a means of protecting frail, old and dying inpatients from interventions that may be ineffectual, unwanted and distressing. The process of documenting No-CPR orders and now resuscitation plans has evolved in response to a complex interaction of previous systemic failures and advancing medical knowledge, with a renewed emphasis on shared decision-making and respect for a patient's right to refuse treatment. These developments in resuscitation planning have also been facilitated by a changing hospital culture, which has allowed for an increasingly robust, transparent and de-stigmatized debate about how resuscitation decisions are made.

In modern medicine, there is no longer a place for a No-CPR order covertly written in the hours before death, or indeed, for default CPR without due consideration of the possible harm. Instead, clinicians should embrace a systemic approach where early and recurring discussions between medical staff and patients are embedded in a hospital culture of shared decision-making, and treatment preferences are viewed within the framework of broader goals of care and comorbidity. Documentation and implementation of these decisions is then best achieved with standardized resuscitation plans. The completion of these plans improves consistency and clarity of documentation, improves rates of discussion, and results in a meaningful care plan that extends beyond the scope of a No-CPR order. Ongoing challenges include the need for standardized and positively-framed language in documentation, improving the uptake of resuscitation plans, and encouraging patient-centered discussions about burdensome medical intervention earlier in the disease course, not just at end-of-life.

Discussing and documenting resuscitation decisions using a clear communication framework and standardized plan increases patient and doctor satisfaction, reduces inpatient costs, minimizes any perceived or actual patient abandonment and improves quality of life. Thus, despite the above challenges, a transition to standardized resuscitation plans that are readily transferrable to the community setting is a laudable and achievable goal that should be pursued and broadly adopted. Future

iterations of resuscitation plans will inevitably continue to change in order to best meet the dynamic needs of the patient, the clinician and the hospital system. Ultimately, the nuances of an individual form are therefore less important than achieving a readily understood and easily communicated process that champions a considerate and transparent balance of key ethical values; non-maleficence, beneficence, equitable resource allocation, sanctity of life and patient autonomy.

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ORCID iD

Colette Dignam  <https://orcid.org/0000-0003-3319-1037>

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