Clinician Perspectives Regarding the Do-Not-Resuscitate Order

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Do-not-resuscitate (DNR) orders were developed as a means of inducing an informed decision by the patient, or the patient's health care proxy, on what procedures would not be implemented at the time of cardiac arrest. Indeed, the publication of the first DNR orders in the literature in 1976 marked a significant transition in the delivery of medical care; rather than initiating a therapeutic intervention, this was the first order prohibiting a specific medical therapy. Although patients who decline cardiopulmonary resuscitation may choose to also forgo other medical therapies, the DNR order is not intended to address prearrest states. However, among practitioners of adult medicine, the presence of a DNR order may decrease the likelihood that medical therapies not specifically related to resuscitation may be initiated. Because of the paucity of pediatric data, we sought to identify clinician attitudes regarding the meaning, implication, and timing of the DNR order for children with life-threatening illnesses.

Methods

As part of a larger study, a web-based self-report questionnaire was administered to assess clinician perspectives regarding the DNR order. The institutional review board of Boston Children's Hospital approved the study.

Study Population

Physicians and nurses from practice settings where discussions regarding resuscitation status typically take place were surveyed. Eligible participants included oncology, intensive care unit (ICU), and cardiac ICU attending physicians; fellows; hospitalists; nurses; and advance practice nurses. Study sites included the medical/surgical ICU, medicine ICU, cardiac ICU, all at Boston Children's Hospital, and the Dana-Farber Children's Hospital Cancer Center.

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Data Collection
All eligible clinicians were e-mailed explaining the study, and participation was requested. The survey was conducted using web-based survey software (SurveyMonkey.com). A link to the online survey and a link to opt out of the study were provided. Three reminder e-mails were sent at approximate 2-week intervals to all nonresponders. Clinicians who declined participation were not contacted further. Identifying information such as e-mail addresses, names, and IP addresses was not linked to the respondents’ answers. Those who completed the survey were entered into a raffle to win 1 of 3 gift cards to a local restaurant. Data were collected during March, April, and May 2010.

Survey Instrument
The survey instrument consists of 148 items. Survey domains were derived from clinician and parental focus groups regarding attitudes and behaviors about advance care discussions and resuscitation status orders. Close-ended items were adapted from several existing surveys, and other items were developed de novo according to guidelines by Streiner and Norman. The instrument was evaluated for face validity by faculty at Boston Children’s Hospital and the Dana-Farber Cancer Institute. The survey was pilot tested and revised according to feedback from cognitive debriefing. Most questions were close-ended, with categorical responses or Likert-type scales.

Main Outcome Measures
Meaning of the DNR Order
Clinicians were asked, “When a child has a Do Not Resuscitate (DNR) order in place, what does this mean to you?” Free text responses were then reviewed separately by 2 investigators (A.S. and J.W.) and coded into 1 of the following categories: limitation of resuscitative measures only in the event of a cardiopulmonary arrest and limitation of treatments not specifically related to resuscitation. Fifty-four of 242 responses (22.3%) were ambiguous or did not answer the question and were not further analyzed. Disagreements in coding were resolved by discussion between the investigators.

Implication of the DNR Order
Clinicians were asked, “In your experience, how much does the care of a patient change once a DNR order is written?” with response categories of “not at all,” “a little,” “somewhat,” “a lot,” and “a great deal.” Respondents who answered that the care of a patient changes once a DNR order is written were then asked, “In what way does care change?” Free text responses were then reviewed separately by 2 investigators (A.S. and J.W.) and coded into the following categories: “care changes only if an arrest occurs or depending on the details of the DNR order,” “there is an increased attention to comfort,” and “care changes beyond both an arrest and focusing on comfort.” Eighteen of 168 responses (10.7%) were unclear or did not answer the question and were not further analyzed. Disagreements in coding were resolved by discussion between the investigators.

Secondary Outcome Measures
Timing of the DNR Order
Clinicians were asked, “Ideally, for a patient with a life-threatening illness, when should a discussion first be initiated specifically addressing resuscitation status?” The following question was then posed: “In your experience, when does the initial discussion specifically addressing resuscitation status typically take place for a patient with a life-threatening illness?” The following response categories were provided for both questions: “upon presentation or diagnosis of a life-threatening illness,” “during a period of stability,” “during an acute illness,” and “when death is clearly imminent.”

Attention From the Clinical Team
Clinicians were asked, “How much attention do patients with a DNR receive as compared to similar patients who do not have a DNR?” and response options included “less attention from clinicians than other similar patients,” “the same amount of attention from clinicians than other similar patients,” “more attention from clinicians than other similar patients,” “varies,” and “don’t know.”

Barriers to DNR Discussions
Clinicians were asked how often 23 potential barriers were impediments to resuscitation status discussions, with 5 response choices ranging from “never” to “always.” Specific items relating to parent/patient behaviors and attitudes included patient/parent expectations, readiness to have the discussion, understanding of the medical issues and prognosis, and conflict among family members. Potential barriers relating to clinician behaviors and attitudes included concern about taking away hope or losing trust, not knowing the right things to say, lack of relationship with the family, not knowing the right time to hold the discussion, uncertainty about prognosis, lack of time and importance, ethical considerations, and laws and regulations.

Additional Covariates
Sociodemographic Characteristics
Survey respondents reported clinical position, specialty, number of years of experience, age, sex, ethnicity, race, and religion.

Training in Discussing Resuscitation Status
Clinicians were asked how much structured and bedside training they had received in resuscitation status discussions at various stages in their career. Five response choices ranged from “none” to “a great deal.”

Statistical Analysis
We conducted statistical tests using the SPSS software package (version 18.0; SPSS, Inc). Respondent characteristics are reported as means and frequencies for categorical data. Group comparisons between specialties and physicians and nurses were tested with the Pearson χ² test. The Wilson method was applied to construct 95% CIs around proportions. Two-tailed values of P < .05 were considered statistically significant. Power analysis indicated that the number of survey respondents provided a precision of 5% in estimating the
attitudes in the clinical population based on the sample data regarding change in care once a DNR order is written, as well as 90% statistical power in detecting a significant difference between the perception of when the initial DNR discussion should take place and when it typically takes place (version 7.0, nQuery Advisor; Statistical Solutions).

Results

Sample Characteristics
Of the 266 clinicians who responded to the survey, 107 were physicians and 159 were nurses (53.6% response rate). Characteristics of respondents are reported in the Table. A total of 52.6% were ICU clinicians, 20.3% were cardiac ICU providers, and 27.1% specialized in oncology. Nurses comprised 59.8% of respondents, and 40.2% were physicians. A total of 43.3% of clinicians had practiced less than 10 years; 32.7%, 10 to 20 years; and 24.0%, more than 20 years. Most nurses worked in an ICU dedicated to medical and/or surgical patients, while physicians were more likely to specialize in oncology. Survey responders and nonresponders did not differ with regard to specialty. However, physicians were more likely to respond than nurses (61.8% vs 49.2%; P = .007).

Training in Resuscitation Status Discussions
Most clinicians had received little to no structured or bedside training in resuscitation discussions during medical or nursing school or during postgraduate training (Table).

Meaning of the DNR Order
Of the respondents, 66.9% believed that a DNR order indicates limitation of resuscitative measures only on cardiopulmonary arrest, whereas 33.1% considered a DNR order to be the threshold for the limitation of treatments not specifically related to resuscitation. There were no significant differences between nurses and physicians or among specialties regarding these perceptions. Finally, 6.2% of clinicians believed that a DNR order implies that only comfort measures are to be provided.

Implication of the DNR Order
Concerning the implications of a DNR order, 68.7% of clinicians (173 of 252) reported that the care of a patient with a life-

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threatening illness changes once a DNR order is written (95% CI, 62.7%-74.1%). Compared with nurses, physicians were more likely to believe that patient care is altered once a DNR order is written ($\chi^2 = 11.15, P = .004$), as were oncology clinicians compared with other specialists ($\chi^2 = 11.17, P = .004$). Of those reporting changes in care, 11.2% reported that this happens only if a cardiopulmonary arrest occurs or depending on the specifics of the DNR order, while 36.7% believed that there is an increased attention to comfort. Finally, 52.1% reported that care changes beyond both resuscitative measures and focusing on comfort, including limitation or withdrawal of diagnostic and therapeutic interventions. Specific clinician comments are included in the eTable in the Supplement. There were no significant differences among specialties or between physicians and nurses regarding these perceptions. Of the respondents, 62.0% believed that patients with a DNR order receive the same amount of attention from the clinical team as patients without a DNR order. Conversely, 10.2% reported that patients with a DNR order receive less (4.3%) or more (5.9%) attention from the clinical team. The remaining clinicians were unsure whether the level of attention varied. More important, 97.1% of physicians and nurses disagreed with the statement that they believe they are giving up on their patient when a DNR order is implemented.

**Timing of a DNR Discussion**

A total of 224 participants indicated a specific answer regarding timing of initial DNR discussions, and 178 (79.5%; 95% CI, 73.7%-84.2%) reported that, ideally, resuscitation status discussions should first be initiated either on presentation ($n = 99$) or during a period of stability ($n = 79$) rather than during an acute illness ($n = 39$) or when death is clearly imminent ($n = 7$). However, of the 229 respondents who indicated a specific answer regarding when these discussions typically occur, 211 (92.1%; 95% CI, 87.9%-95.0%) reported that, in actuality, the discussions take place during an acute illness ($n = 80$) or when death is clearly imminent ($n = 131$). Clearly, there is a difference in perspective between when clinicians believe initial DNR discussions should take place and when they actually take place ($\chi^2 = 256.41, P < .001$).

**Barriers to DNR Discussions**

Barriers to resuscitation status discussions were ranked according to the percentage of physicians and nurses who identified issues as often or always a barrier. The top 3 barriers were unrealistic parent expectations (39.1%), lack of parent readiness to have the discussion (28.8%), and differences between clinician and patient/parent understanding of the prognosis (30.4%). On the other hand, more than 50% of respondents believed that 7 issues were never or rarely a barrier: lack of importance to clinicians (83.9%), laws and regulations (81.9%), concern about the patient receiving less attention from the health care team once resuscitation status discussions begin (75.9%), lack of clinician time (67.5%), ethical considerations (62.8%), conflict between patient and parent (60.7%), and clinician concern about losing the trust of the patient (56.8%).

**Discussion**

There is substantial variability in the interpretation of a DNR order. In theory, many physicians and nurses in our study believe that the DNR order should guide therapeutic decisions only during a cardiopulmonary arrest. Yet in reality, most believe that care changes beyond resuscitative interventions, which is consistent with previous research in adults. The President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research wrote, “Any DNR policy should ensure that the order not to resuscitate has no implications for any other treatment decisions. Patients with DNR orders on their charts may still be appropriate candidates for all other vigorous care.” However, our study demonstrates that clinician attitudes and practices are not always consistent with this principle.

A DNR order does not adequately address the overall goals of care since it is not intended to address prearrest states. Confusion may arise if treatment preferences are not known but rather inferred from a DNR order. If resuscitation status is not discussed in the context of overall goals of care, then clinicians may incorrectly assume that a patient who agrees to a DNR order would also prefer to forgo other medical therapies. Furthermore, DNR forms may include various interventions for prearrest states, thus adding to the confusion regarding appropriate application of a DNR order.

Many physicians and nurses in our study reported that the care of a patient changes on implementation of a DNR order. Of those respondents, most believe that care changes beyond attempts to reverse cardiopulmonary arrest. Furthermore, more than half reported that care changes beyond resuscitative measures and focusing on comfort, including limitation or withdrawal of diagnostic and therapeutic interventions and, most concerning, decreased attentiveness from the clinical team. One clinician comment highlights these concerns: “These patients are frequently discussed at the end of rounds, after other ‘acute issues’ have been dealt with. In certain cases there may be reluctance of the team to go into the room.” Although only a few practitioners reported that patients with a DNR receive less attention from the medical team, all clinicians should guard against this unintended consequence of a DNR order. Interestingly, some clinicians reported that once a DNR order is initiated, patients receive more attention from health care providers. This was supported by provider comments such as these: “Nurses are more caring and nurturing to the patient and family,” and “I think that the care team is a bit more empathetic toward the situation.” While it is encouraging that health care providers are sensitive to the situation, clinicians should be cautious about not waiting until a DNR order is initiated to integrate the emotional aspects of patient care.
Given specialty differences in end-of-life perspectives, the variable length of the clinician-patient relationship and variation in patient cohorts may be contributing factors to the discordance among clinicians of different specialties.

Most clinicians reported that resuscitation status discussions happen later in the illness course than is ideal. Nearly three-fourths responded that resuscitation status discussions should happen during diagnosis or a time of stability. However, almost 90% of physicians and nurses reported that these types of discussions happen much later in the patient’s illness, which is consistent with previous research. However, our study expands on earlier findings in that it includes perspectives of both nurses and physicians who are from multiple care settings. We identified several barriers, and clinicians reported inadequate training for discussing resuscitation status. More important, the most common barriers identified by clinicians related to parental factors. This finding is consistent with previous investigations of pediatric end-of-life care.

Our findings suggest that variability in the interpretation of a DNR order may be due to multiple factors, including insufficient education, incomplete understanding of patient preferences, and lack of an appropriate tool for documenting patient goals of care. While there have been advances in palliative care and communication skills training, our study suggests a need for additional educational interventions.

There are several limitations to our study, which involved clinicians from only 3 departments within a single pediatric tertiary care institution and, therefore, may have limited generalizability. However, the group is multiprofessional and includes clinicians with a wide variety of clinical practice, in terms of both duration and specialty. One additional limitation is that we did not assess patient and parental perspectives regarding resuscitation status discussions and the DNR order.

Our findings indicate that there is variable interpretation of the DNR order, and patient care may change once a DNR order is established. Resuscitation status discussions should take place within the larger context of understanding patient and family goals of care. Interventions aimed at improving clinician knowledge and skills in advance care discussions as well as the development of orders that address overall goals of care may aid clinicians in making informed, appropriate medical decisions for patients with life-threatening conditions.

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