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# An Alternate Policy for CPR in Nursing Homes

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*Cardiopulmonary resuscitation (CPR) near time of death, unless specifically refused, has become expected practice in most U.S. nursing homes. In response to growing evidence of poor outcomes from attempted CPR, do-not-resuscitate (DNR) orders have been given in varying rates. However, communication about CPR and the issues surrounding DNR orders are problematic. This paper reviews CPR and DNR in the nursing home and recommends an alternate policy for attempted CPR.*

The decision to attempt to resuscitate a nursing home resident is the subject most commonly discussed by nursing home ethics committees (Glasser et al. 1988). More than one and a half million Americans live in nursing homes. Therefore, making these resuscitation decisions presents both a common and a complex challenge for health care professionals trying to provide quality care.

In this paper I track the historical progression of resuscitation in nursing homes, explore problems in existing policy, and suggest an alternative policy for attempted CPR.

## The Beginnings of CPR

Cardiopulmonary resuscitation (CPR) using closed chest massage was developed in the 1960s to treat witnessed cardiac arrest in patients suffering from anaesthetic accidents or acute coronary events. An early report announced a survival rate of seventy percent (Kouwenhoven et al. 1960). Subsequently, attempted resuscitation became standard policy in hospitalized patients who suffered acute cardiac or pulmonary arrest.

In 1983, the President's Commission on the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research set the standard for CPR policies in medical settings: "When there has been no advance deliberation, the presumption in favor of resuscitation is

justified" (President's Commission 1983). This practice resulted in an expectation of CPR unless the patient or proxy specifically asked that it be withheld, without consideration of the efficacy of CPR in specific clinical circumstances. The practice of expected resuscitation, unless otherwise specified, became standard in most American nursing homes.

Most studies examining the outcomes of CPR report both frequencies of *successful resuscitation*, which is the restoration of pulse and blood pressure, and *survival to hospital discharge* (a more meaningful outcome). Studies also look at out-of-hospital arrests in elderly patients, including nursing home residents (Bachman et al. 1986; Murphy et al. 1989; Longstreth et al. 1990). Additional reports examine outcomes of attempted CPR including only nursing home residents (Applebaum et al. 1990; Awoke et al. 1992; Tresch et al. 1993; Gordon and Cheung 1993; Ghushn et al. 1995a). Success rates (discharge alive from the hospital) range from 0 to 5%. For example, from one nursing home, 2 of 117 residents survived to hospital discharge, and both died months later in the nursing home (Applebaum et al. 1990). None of 45 residents survived hospitalization who underwent attempted CPR in a Virginia nursing home staffed around the clock by Advanced Cardiac Life Support (ACLS) trained physicians (Awoke et al. 1992). Those residents who had unwitnessed arrests or poor signs of electrical cardiac function

(electromechanical dissociation [EMD] or asystole) had virtually no chance of successful resuscitation.

Not surprisingly, a meta-analysis of CPR outcome studies from hospitalized patients shows that many conditions associated with frailty predict poor success rates: over seventy years old, homebound, poor kidney function, cancer, or overwhelming infection (sepsis) (Ebell 1992). Reviews of CPR outcomes in adults of all ages suggest half of survivors will have significant neurological deficits—including stroke, persistent vegetative state, or coma (Jaffe and Landau 1993).

### **Ethical Issues Relating to CPR in the Frail Elderly**

While the principle of autonomy is evoked to provide an ethical basis for CPR decisions, obtaining informed consent is difficult. Many residents without previously documented advance directives are unable to make autonomous decisions upon admission to the nursing home. Several studies have shown an incongruence between patient and family members about what the patient would want regarding end-of-life care (Ouslander 1989; Zweibel and Cassel 1989; Gerety 1993). Similarly, presenting the choice of CPR to those with virtually no chance of surviving resuscitation is deceptive because autonomy is enhanced only by offering viable options.

In many such circumstances, attempting resuscitation is futile (Alpers and Lo 1995). Customarily, resuscitation is the only medical intervention that requires consent to withhold it; other futile interventions are typically not offered or discussed (Tomlinson and Czlonka 1995).

Some argue that we should separate our discussions of futility into quantitative and qualitative aspects (Younger 1988; Waisel and Truog 1995). One can view this dichotomy as the frequency of a positive outcome (quantitative) and the value of that outcome (qualitative). Therefore, in determining the futility of CPR in the nursing home, we should consider both the infrequency of success (0 to 5% chance of surviving the requisite hospital ICU stay) and the value of that

success (at best, returning to the pre-CPR state; at worst, prolonged ICU stay and worsened neurological disability).

From a utilitarian or rationing perspective, the cost-effectiveness of CPR has been estimated (Murphy and Matchar 1990). The probability of an elderly, frail, nursing home resident surviving CPR is approximately 1% and certainly no greater than 5%. If one assumes a 1% survival rate, conservative estimates of the cost of resuscitation and subsequent care for survivors yield a total cost of \$217,000 per survivor. If the average life-expectancy for each survivor is six months, the cost per year of life saved is doubled to \$434,200.

As the benefits decline, the risks of harm increase. With so little potential benefit in the frail elderly, the iatrogenic harm of CPR dominates the cost-benefit evaluation (Tomlinson and Brody 1990). Persons who survive CPR are taken to the intensive care unit, where most die within twenty-four hours (Ebell 1992).

### **Predictors, Prevalence and Variation of DNR Orders in Nursing Homes**

A DNR order reflects a decision by a physician, resident, and/or proxy to not attempt resuscitation at the time of cardiac arrest or death. The usual expectation in most nursing homes is that resuscitation will be attempted. However, the data suggest that most people who die, even those without DNR orders, do not receive CPR (which occurs prior to only 2-5% of deaths) (Finucane et al. 1991; Duthie et al. 1993; Holtzman et al., 1994). A survey from 1993 estimates 118 CPR attempts in 172 Wisconsin facilities, for a rate of one CPR attempt per 166 beds per year (Kane and Burns 1997).

Having a DNR order for an individual nursing home resident is associated with the medical condition, age, gender, and race of the resident, the presence of an advanced directive, the facility's protocol, and social support. Advanced age (Batchelor et al. 1992; Mark et al. 1995), physical dependency (Fader et al. 1989; Berlowitz et al. 1991) and cognitive dysfunction (Mark et al. 1995; Terry and Zweig 1994) are associated with DNR

orders in nursing home populations. Residents with a documented advance care directive (Terry and Zweig 1994) or a durable power of attorney for health care (Mark et al. 1995) also are more likely to have DNR orders, as are women (Mark et al. 1995; Terry and Zweig 1994), white residents (Kellogg and Ramos 1995), and residents without Medicaid or who have daily visitors (likely proxies for social support) (Mark et al. 1995).

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Interview studies have shown variation in the preference for attempted resuscitation in cognitively capable nursing home residents. The proportion of residents requesting no resuscitation ranged from 33% to 88% (Wagner 1984; Fader et al. 1989; Danis et al. 1991; Michelson et al. 1991; O'Brien et al. 1995). Unfortunately, there is substantial evidence that end-of-life care, including decisions about CPR, often is not discussed with nursing home residents, even those who are competent (Cohen-Mansfield et al. 1991; Lurie et al. 1992). Bradley and colleagues (1997) found that even if residents were alert and oriented, in 48% of cases, someone other than the resident received information regarding CPR policy.

Nursing home policies and practices contribute to this variation (Batchelor et al. 1992; Kellogg and Ramos 1995). We found extensive practice variation in the prevalence of DNR orders (4% to 63%) in eight central Missouri nursing homes that had demographically similar resident populations (Terry and Zweig 1994). Other studies of DNR orders show prevalence rates of 19% to 74% (Berlowitz et al. 1991; Mark et al. 1995; Kellogg and Ramos 1995). Teno (Teno et al. 1997) found

that fewer than 40% of residents in Texas, Maryland, and Ohio had DNR orders, whereas Oregon, Minnesota, and Connecticut had DNR rates of nearly 70%. These variations cannot be explained by resident characteristics, preferences, or by state statutes.

### **Patient and Physician Knowledge about CPR**

Many people have misperceptions about CPR that may affect their decisions. Studies from both the United States and Great Britain find television drama to be the main source of information about CPR (Schonwetter et al. 1993; Mead and Turnbull 1995). Such dramas and reenactments present an overly optimistic impression of CPR (Diem et al. 1996). Most elderly patients from a family practice clinic thought CPR included a brain wave test and insertion of a heart catheter (Malloy et al. 1992). Also, the information describing CPR affects patients' decisions. For example, when asked about their wishes if they had a cardiac arrest during an acute illness, 41% of retirement community dwellers opted for CPR. After learning the probability of survival (10% to 17%), only 22% desired CPR. Only 5% desired CPR when told survivability was zero to 5% with a chronic illness present (Murphy 1994).

Physicians and nurses also overestimate the benefits of CPR, potentially leading to misrepresentation when speaking with patients or family members. A group of 451 physicians at the Cleveland Clinic predicted that patients with metastatic cancer or late-stage Alzheimer's disease would have a CPR success rate of 30% (Miller et al. 1993). Even medical directors of nursing homes in Texas estimated a mean success rate of 10% in stable nursing home residents (Ghusn et al. 1995b). Directors of nursing were even more positive, estimating 29% survival (Ghusn et al. 1997). The language used also conveys optimism about CPR. Health care workers usually ask patients: "Would you want CPR if your heart and breathing stopped?" rather than asking the more specific question: "Would you want us to attempt CPR?"

### **Problems with DNR Orders**

DNR orders may have at least two unintended

effects. First, residents with DNR orders may be resuscitated inappropriately. Second, additional limitations in care may be assumed by those caring for patients with advance directives or DNR orders. For example, for ninety-six events in a group of nursing home residents, physicians provided more aggressive care than requested in 6 cases and less aggressive care in eighteen cases (Danis et al. 1991). At one nursing home, three residents with DNR orders received emergency intubation and mechanical ventilation. In two instances, family members revoked the DNR order, and a third resident was resuscitated en route to the hospital by the ambulance team (Kellogg and Ramos 1995). A chart review of 1,405 Minnesota nursing home residents found that those with DNR orders frequently had care limited beyond the withholding of CPR (Holtzman et al. 1994).

Many residents with living wills or other advance directives (which did not include a statement about resuscitation) have DNR orders recorded without evidence of discussion (Terry and Zweig 1994). Commonly, medical records reveal no documentation of patient or surrogate participation in the DNR decision (Meyers et al. 1990), nor are the advance directives consistently transferred to the hospital (Morrison et al. 1995).

### **The Challenges of CPR and DNR in the Nursing Home**

Thus, on the issues of CPR and DNR in the nursing home, we are faced with the following challenges.

First, even in the best of circumstances (a witnessed arrest, an ECG pattern of ventricular tachycardia or fibrillation, staff capable of basic CPR, and trained paramedics close at hand), the likelihood of a successful resuscitation is small.

Second, from an ethical perspective, we can defend withholding CPR on frail, elderly nursing home residents using arguments such as

- preserving autonomy (by not giving false hope)
- withholding futile therapy (low likelihood of benefit)

- enhancing cost-effectiveness
- promoting no harm

Third, for DNR orders, there is tremendous variation in their prevalence—state to state and facility to facility. This diversity is likely caused by variations in nursing home policies, community standards, and knowledge and participation of physicians, nurses, social workers, and residents in the nursing home.

Fourth, DNR orders may fail to be transferred from one care setting to another (thereby negating the effect of past stated preferences).

Finally, DNR orders may have a negative effect on care, causing an inappropriate withholding of care beyond future CPR attempts. "She is a DNR" may stigmatize the resident inappropriately, limiting care and lessening respect for the person in the eyes of nursing home staff and family members. Therefore, DNR orders in the nursing home may not be acceptable.

### **A CPR Policy in the Nursing Home**

The following policy is proposed:

1. Due to the low likelihood of successful resuscitation for most nursing home residents, no CPR shall be the default policy. Residents and surrogate decision makers shall be informed of this policy prior to admission, accompanied by information describing CPR, risks and benefits as described in the literature, and the outcomes of attempted CPR in the residents' nursing home. The residents also shall be told whether advanced life support services are available at the facility and what additional care will be provided by EMS services and hospitals. Patients with complex, multi-system problems such as end-stage dementia, metastatic cancer, sepsis, severe metabolic abnormalities, or persistent vegetative state shall not be offered attempted CPR.
2. For those residents who request CPR after receiving this information, an order to attempt CPR shall be written. The following principles should guide the use of CPR for those who

request it:

- a. Basic CPR is initiated by nursing home personnel in a pulseless resident who has suffered a witnessed arrest, while the EMS team is called.
- b. CPR is not administered in the context of an unwitnessed arrest unless the resident was seen functioning normally within the last few minutes.
- c. Advanced life support is discontinued if the patient's initial cardiac rhythm is unfavorable (asystole or EMD), if resuscitation has been unsuccessful after fifteen minutes, or if after ongoing resuscitative efforts, the patient arrives in the emergency department without a pulse or blood pressure—all conditions pointing to unsuccessful CPR.

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3. Residents and family members shall be reassured that all other forms of medical therapy will be offered and available to nursing home residents, including, but not limited to, comfort care near time of death.

Since many frail elders undergo CPR soon after admission to the nursing home and before DNR orders are written (Duthie et al. 1993), an affirmative CPR policy would prevent inappropriate resuscitative attempts on these residents. However, the plans for each individual resident should be developed as soon as possible

following admission, with nurses, social workers, primary care physicians, and other professionals (such as clergy) working together with residents or surrogates. In the case in which the attending physician believes CPR attempts would be inappropriate, but the resident or surrogate requests it, the facility's ethics committee or the medical director should be involved in negotiating a solution.

### **Conclusions**

The assumption that attempted CPR is appropriate for all frail nursing home residents unless a specific order exists to the contrary has resulted from an unfortunate application of hospital policy to the nursing home setting. Knowledge about the likely outcomes of CPR in nursing home settings enables a more rational and organized approach to the CPR decision than currently exists in many facilities.

Offering the limited information usually provided to those making a CPR decision and asking them to make a choice in the name of autonomy is an abdication of professional responsibility. Quill and Brody (1996) recommend a more complete disclosure of, not only information, but values of the patient and the physician. This proposed model of enhanced autonomy is relationship- and value-centered, focusing on general goals and not limited to specific clinical interventions, such as attempted CPR.

Discussions about end-of-life care should be broadened to include patient, physician, and other caregiver values, concerns about pain control, desires about settings of care, and views on supported nutrition and hydration. For those who are severely disabled, focused discussions should address decisions about intravenous antibiotics and limitations on hospitalization if the resident becomes acutely ill. Nursing home residents with decisional capacity should be included in these discussions and encouraged to have a durable power of attorney for health care decision making in case they become incapable. Aside from agreed upon limitations in medical care, both residents and family members should be

reassured both verbally and in practice, that the resident will be cared for fully and compassionately near time of death.

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