

SPECIAL ARTICLES

THE ECONOMICS OF DYING

The Illusion of Cost Savings at the End of Life

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FOR more than a decade, health policy analysts have noted — and some have decried — the high cost of dying.¹⁻⁷ With the acceleration of pressures on health care costs and calls for reform, considerably more attention has been focused on proposals to control costs at the end of life.⁸ One proposal would require persons enrolling in a health care plan to complete an advance directive.^{9,10} Others would require hospitals to establish guidelines to identify and reduce futile care.¹¹⁻¹³ Similar ideas have been expressed by members of President Bill Clinton's Health Care Task Force and by Joycelyn Elders, the surgeon general.¹⁴

Advance directives and hospice care were developed to ensure patients' autonomy and to provide high-quality care at the end of life. Compassion and dignity are sufficient justification for their use. Nevertheless, the persistent interest in saving money at the end of life through the use of advance directives and hospice care makes it imperative to assess how much money might realistically be saved.

COST AT THE END OF LIFE AND REASONS FOR COST CONTROL

Expenditures at the end of life seem disproportionately large. Although the precise numbers vary, studies consistently demonstrate that 27 to 30 percent of Medicare payments each year are for the 5 to 6 percent of Medicare beneficiaries who die in that year.¹⁵⁻¹⁷ The latest available figures indicate that in 1988, the mean Medicare payment for the last year of life of a beneficiary who died was \$13,316, as compared with \$1,924 for all Medicare beneficiaries (a ratio of 6.9:1).¹⁵ Payments for dying patients increase exponentially as death approaches, and payments during the last month of life constitute 40 percent of payments during the last year of life.¹⁵ Identical trends and ratios have been found since the early 1960s.^{6,15-17}

Many people believe that these expenditures are for the care of patients known in advance to be dying. The time of death is usually unpredictable, however, except perhaps when the patient has advanced cancer. There is no method to predict months or weeks in advance who will live and who will die. Consequently,

it is difficult to know in advance what costs are for care at the end of life and what costs are for saving a life.^{6,7} Only in retrospect, after a patient's death, can we identify the last year or month of life. Nevertheless, to many people, reducing expenditures at the end of life seems an easy and readily justifiable way of cutting wasteful spending and freeing resources to ensure universal access to health care.^{9-11,18} General rules intended to curtail the use of unnecessary medical services have been shown to reduce both effective and wasteful services.¹⁹ Consequently, there is some reluctance to limit interventions for relatively healthy people. Many believe, however, that interventions for patients whose death is imminent are inherently wasteful, since they neither cure nor ameliorate disease or disability.

Advance directives and hospice care have been proposed as methods of reducing medical costs at the end of life; both can transform "good ethics [into] good health economics."⁹ In survey after survey, Americans indicate that they do not want to be kept alive if their disease is irreversible. If doctors would stop using high-technology interventions at the end of life, the argument goes, then we could simultaneously respect patients' autonomy and save tens of billions of dollars.^{8-11,14} When we link ethics and economics to prevent futile care, it is claimed, "everyone wins — the patient, the family, and society as a whole."¹¹

Despite the allure of these arguments, we are skeptical. Before making major changes in policy regarding the care of dying patients and formulating budget projections on the basis of cost savings of billions of dollars, we should review the economics of care at the end of life. The cost savings that could be achieved through the wider use of advance directives, hospice care, and curtailment of futile care have not been well studied. The available data suggest, however, that such savings would be less than many have imagined.

ADVANCE DIRECTIVES FOR HEALTH CARE AND COST SAVINGS

One study evaluating the effect of advance directives on costs randomly assigned outpatients to either a physician-initiated discussion of advance directives and encouragement to use them or no intervention.²⁰ There was no difference in medical costs or other variables between the groups: as the authors stated, "executing the California Durable Power of Attorney for Health Care and having a summary copy placed in the patient's medical record had no significant positive or negative effect on a patient's well-being, health status, medical treatments, or medical treatment charges."²⁰ Although this study involved small numbers of pa-

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tients at only two hospitals and measured hospital charges rather than actual costs, similar preliminary results were reported in another study involving 854 patients who died at five medical centers.²¹ Executing an advance directive did not significantly affect the cost of patients' terminal hospitalizations. The average hospital bill for those without an advance directive was \$56,300, as compared with \$61,589 for those with a living will and \$58,346 for those with a durable power of attorney.²¹ Additional studies are certainly needed, but these reports suggest that the wider use of advance directives is unlikely to produce dramatic cost savings.

HOSPICE CARE AND COST SAVINGS

Hospice patients refuse life-sustaining interventions, favor palliative care, and are often treated at home; they serve as another source of information on the magnitude of the potential savings from the reduced use of high-technology interventions at the end of life. A series of studies comparing hospice care and traditional care of terminally ill patients estimated that in the last month of life, home hospice care saves between 31 and 64 percent of medical care costs.²²⁻²⁷ The difference is accounted for mostly by the reduced use of hospital services. Consequently, the savings for hospital-based hospice care are lower. However, the longer patients receive hospice care, the smaller the savings. As the National Hospice Study reported, for hospice patients "the longer the stay in hospice, the more likely [it was that] costs incurred exceeded those of conventional care patients in the last year of life; the economies associated with hospice occur primarily in the last weeks of life."²⁸ During the last six months of life, the mean medical costs for patients receiving hospice care at home are 27 percent less than for conventional care, and the savings with hospital-based hospice care are less than 15 percent.^{22,24,26}

These studies may systematically overstate the savings associated with hospice care. Most have not been randomized and may have incorporated a selection bias, since hospice patients by definition want less aggressive care. The one randomized study of hospice care found no cost savings for long-term hospice patients.²³ Patients receiving care in a hospice also tend to be from higher socioeconomic groups and to have informal support structures that enable them to obtain additional services, such as personal attendants not covered by Medicare, that are invisible in most cost estimates.²⁹ As rates of hospitalization decline, so, too, may the savings from hospice care.²² Finally, an overwhelming majority of hospice patients have cancer, a fact that limits the generalizability of these data.²⁸

FUTILE CARE AND COST SAVINGS

A related proposal to save money at the end of life is to reduce "futile care."^{10,11} What constitutes futile care is controversial,³⁰⁻³³ but the paradigmatic case is cardiopulmonary resuscitation for patients dying of cancer.³⁰⁻³⁴ Unfortunately, there have been no studies of

the financial consequences of eliminating resuscitation for patients with cancer. In a study of the cost of care for all patients with do-not-resuscitate (DNR) orders at a tertiary care hospital, almost 25 percent of whom had cancer, it was found that among patients who died, medical care for those with DNR orders cost about the same as for those without DNR orders: a mean of \$62,594 for 616 patients with DNR orders as compared with \$57,334 for 219 patients without DNR orders.³⁵

Advocates of cost cutting have suggested extending the concept of futility to curtail marginally beneficial care.^{10,11} Chemotherapy for unresectable non-small-cell lung cancer is an example of marginal if not entirely futile therapy; it does not systematically enhance longevity, improve the quality of life, or palliate pain.^{36,37} A randomized trial in Canada, comparing chemotherapy with high-quality supportive care for patients with non-small-cell lung cancer, found that the average cost of the supportive care was \$8,595 (in 1984 Canadian dollars), whereas one chemotherapy regimen cost less (\$7,645) and another regimen cost more (\$12,232).³⁸ Some aspects of this study are controversial, and some costs were approximated because they were "not routinely identified in the Canadian health care system."^{38,39} Nevertheless, the authors concluded that even if chemotherapy is expensive, "a policy of supportive care for patients with advanced non-small-cell lung cancer was associated with substantial costs."³⁸

CAN WE SAVE ANY MONEY ON CARE AT THE END OF LIFE?

Can we realize any savings by the more frequent use of advance directives, hospice care, and less aggressive care at the end of life? We can estimate the proportion of health costs that might be saved in a best-case scenario — that is, if every American who died had executed an advance directive, refused aggressive care at the end of life, and elected to receive hospice care at home. The only reliable cost data for the last year of life are Medicare costs for patients 65 years of age or older; there are no reliable data on the total costs of health care for patients either over or under 65 who die. Consequently, many approximations are necessary in calculating the savings that can be realized.

In 1988, the mean annual cost per Medicare beneficiary who died during that year was \$13,316.¹⁵ Medicare primarily pays for acute care, however, and accounts for only 45 percent of total health care costs for those 65 years old or older; the bulk of the excluded costs are for nursing home care.⁴⁰ The simplest way to estimate the additional health care costs for Medicare beneficiaries who die is to assume they use the same fraction of these other services that they do of services covered by Medicare. This means that patients 65 or older who die in a given year account for 27 percent of total health care expenditures — Medicare costs, nursing home costs, and the costs of other services for

all patients 65 or older. Thus, we estimate that patients 65 years old or older who died in 1988 spent \$29,295 for all their health care services, of which \$13,316 was covered by Medicare.

How should we estimate costs during the last year of life for patients less than 65 years of age? Although costs for younger patients who die of cancer and the acquired immunodeficiency syndrome (AIDS) are probably substantially higher than costs for dying Medicare patients,⁴¹ the costs for those who die of accidents, suicide, and homicide are probably less. Scitovsky showed that among a group of California patients who died, the mean total medical costs for the last year of life were about the same for those under 65 years of age as for those 65 to 79 years of age.⁴² In 1988, the mean Medicare cost for 65-to-79-year-old patients who died was \$15,346 (Lubitz J: personal communication). Assuming that this is 45 percent of total health care expenditures, we can estimate that the mean annual medical cost for patients under 65 who died in 1988 was \$34,102.

We know that 2.17 million Americans died in 1988, of whom 1.49 million were Medicare beneficiaries. Using the hospice data, and assuming that the maximum we might save in health care costs during the last year of life by reducing interventions is 27 percent,^{22,24,26} we can calculate how much could be saved if each of the 2.17 million Americans who died executed an advance directive, chose hospice care, and refused aggressive, in-hospital interventions at the end of life. As Table 1 shows, the total savings in health care expenditures would have been \$18.1 billion in 1988, or 3.3 percent of all health care spending. In 1988, the savings in Medicare costs would have been \$5.4 billion, or 6.1 percent of expenditures.⁴³ Since the percentage of health dollars spent on patients who died has been constant over 30 years, the sav-

ings as a percentage of total national health care costs and Medicare spending is unlikely to change over time.^{6,15,44}

This calculation relies on best-case assumptions that err on the side of overestimating savings. We have extrapolated the savings for patients who receive hospice care to the use of advance directives and to the reduced use of futile interventions. Yet not everyone would refuse life-sustaining interventions in their advance directives, and futile interventions are hard to define, let alone stop. Moreover, achieving savings of any considerable magnitude depends on decreasing the numbers of days spent in the hospital, yet over the past decade there has already been a significant decline in both the number of hospital days for all patients and the proportion of costs for patients who die that are allocated to hospital care.¹⁵ Furthermore, curtailing care at the end of life is likely to affect acute care and thus Medicare costs, but unlikely to decrease nursing home and other outpatient costs; indeed, it may even increase such costs. (Excluding nursing home costs would reduce the total savings from \$18.1 billion to \$15.9 billion, or 2.9 percent of total health care spending.)

Reducing health care expenditures by 3.3 percent cannot be dismissed lightly. Yet even with the most generous assumptions possible, the savings will be less than the scores of billions of dollars predicted by many commentators and the savings estimated from cutting administrative waste.^{8-11,14,45}

WHY IS THERE NOT MUCH MONEY TO BE SAVED AT THE END OF LIFE?

Why, despite the high cost of dying documented for Medicare beneficiaries, is there not likely to be much in the way of cost savings from the use of advance directives, hospice care, and fewer high-technology interventions? One explanation is that the Medicare data produce a distorted image of the cost of dying. Commentators extrapolate the data for Medicare patients who die to the entire population.^{8,10,11,14} Using 1990 expenditures, for example, Singer and Lowy calculate that "the care of patients who died" cost \$184 billion (27 percent of the \$661 billion spent on health care in 1990).⁸ They suggest that \$55 billion to \$109 billion might be saved "from a policy of asking all patients about their wishes regarding life-sustaining treatment and incorporating those wishes into advance directives."

Although Medicare data on mortality and expenditures may be the only reliable figures available, they cannot be extrapolated without adjustment to the whole health care system. Less than 1 percent of the total American population dies each year, yet 5 to 6 percent of Medicare beneficiaries die. Five percent of Medicare patients may account for 27 percent of Medicare payments, but it is improbable that the less than 1 percent of the American population who die account for 27 percent of the total national spending on health care. We estimate that the 2.17 mil-

Table 1. Estimated Savings from Greater Use of Advance Care Directives, Hospice Care, and Less Aggressive Interventions.*

VARIABLE	TOTAL		MEDICARE
	AGE <65 YR	AGE ≥65 YR	
No. of patients who died in 1988	0.68 million	1.49 million	1.49 million
Average cost of health care in the last year of life per dying patient	\$34,102†	\$29,295‡	\$13,316
Savings from the use of advance directives, hospice care, and less aggressive interventions by all patients§			
Savings per patient	\$9,208	\$7,910	\$3,595
Total dollar savings	\$6.3 billion	\$11.8 billion	\$5.4 billion
1988 U.S. health care spending	\$546 billion		\$88.5 billion
Savings in health care spending (%)	3.3		6.1¶

*Expenditures are shown in 1988 U.S. dollars.

†Extrapolated from the estimated \$15,346 in Medicare health care expenditures for patients 65 to 79 years old during their last year of life, which constitutes 45 percent of the total health care costs of these patients.¹⁵

‡Includes \$13,316 for Medicare costs and \$15,979 for health care costs not covered by Medicare for these dying patients in 1988.^{15,40}

§Savings were calculated as 27 percent of the average cost of health care in the last year of life.

¶Percentage shown is of the entire Medicare budget, not of Medicare payments for patients over 65 (\$73 billion in 1988).¹⁵

lion Americans who die annually account for about 10 to 12 percent of health care expenditures.

It may be difficult to reduce substantially the percentage of health care expenditures spent on patients who die because humane care at the end of life is labor-intensive and therefore expensive. Even when patients refuse life-sustaining interventions, they do not necessarily require less medical care, just a different kind of care. High-quality palliative care — providing pain medications, helping in the activities of daily living, using radiation therapy for pain relief, and so on — requires skilled, and costly, personnel. Thus, even low-technology health care that is administered outside hospitals to terminally ill patients is not cheap.

Another explanation is related to the unpredictability of death. Since there are no reliable ways to identify the patients who will die,^{6,44,46} it is not possible to say accurately months, weeks, or even days before death which patients will benefit from intensive interventions and which ones will receive “wasted” care. Retrospective cost studies will inflate costs at the end of life as compared with costs for patients known in advance to be dying because they include many patients receiving expensive care who are not expected to die yet do die. This clinical uncertainty also means that resources are initially expended until a patient’s prognosis becomes clearer and physicians, patients, and the family are sure about either forging ahead with aggressive treatment or withdrawing it. This process is both ethically correct and what most Americans seem to desire.⁴⁷ Advance directives are unlikely to reduce this type of care, since physicians, patients, and family members are hesitant to discontinue therapy when there is a real chance of survival.

In addition, medical practice has changed over the past decade. For the vast majority of patients who die, DNR orders are already in place and other interventions are terminated. For instance, at Memorial Sloan-Kettering Cancer Center, 85 percent of patients with cancer who have cardiac arrest have DNR orders⁴⁸; other institutions have reported rates of DNR orders among patients with cancer that are as high as 97 percent.³⁵ Currently, in tertiary care hospitals, between 60 and 80 percent of dying patients have DNR orders.⁴⁹⁻⁵¹ Admittedly, the decision to give a DNR order or withdraw life-sustaining treatment is usually made late in the course of a patient’s illness. Nevertheless, given the steep rise in costs as death approaches, reducing care in these final days of life should yield the most savings.^{15,35} As the data on hospice care demonstrate, there may be additional — but smaller — cost savings if the decision to stop treatment is pushed back several weeks.^{22,24,26,28}

Finally, the increased use of living wills and health care proxy forms may not necessarily curtail the use of life-sustaining treatment. We have no empirical evidence that patients are getting substantially more treatment than they or their families want. Although there have been a few well-publicized cases in which

physicians have treated patients against their wishes, these are probably unrepresentative.⁵² Studies consistently show that physicians are more willing than patients and family members to withhold or withdraw life-sustaining treatments.^{53,54} A large minority of people consistently want treatment even after they become incompetent or have a low chance of survival. For instance, about 20 percent of patients want life-sustaining therapy even if they are in a persistent vegetative state.⁴⁷ Similarly, about half of patients with AIDS want aggressive life-sustaining treatment, including admission to an intensive care unit and cardiopulmonary resuscitation, in circumstances in which they have a relatively poor chance of survival.^{55,56} Thus, patients who complete advance directives may request more life-sustaining treatment than they currently receive, precluding any cost savings. In addition, studies demonstrate that family members are consistently more hesitant to withhold or withdraw life-sustaining treatment than the patients themselves.^{53,54,57,58} Thus, if patients are encouraged to select proxy decision makers by executing durable powers of attorney, the cost savings may be minimal.

CONCLUSIONS

None of the individual studies of cost savings at the end of life associated with advance directives, hospice care, or the elimination of futile care are definitive. Yet they all point in the same direction: cost savings due to changes in practice at the end of life are not likely to be substantial. The amount that might be saved by reducing the use of aggressive life-sustaining interventions for dying patients is at most 3.3 percent of total national health care expenditures. In 1993, with \$900 billion going to health care, this savings would amount to \$29.7 billion. It is important to note that achieving such savings would not restrain the rate of growth in health care spending over time.⁵⁹ Instead, this amount represents a fraction of the increase due to inflation in health care costs and less than the \$50 billion to \$90 billion needed to cover the uninsured population.

The unlikeliness of substantial savings in health care costs does not mean, however, that there are no good reasons to use advance directives, fund hospice care, and employ less aggressive life-sustaining treatments for dying patients. Respecting patients’ wishes, reducing pain and suffering, and providing compassionate and dignified care at the end of life have overwhelming merit. But the hope of cutting the amount of money spent on life-sustaining interventions for the dying in order to reduce overall health care costs is probably vain. Our alternatives for achieving substantial savings seem limited to major changes in the financing and delivery of health care, difficult choices in the allocation of services, or both. Whatever we choose, we must stop deluding ourselves that advance directives and less aggressive care at the end of life will solve the financial problems of our health care system.

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