

THE VALUE OF LIFE NEAR ITS END AND TERMINAL CARE

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Abstract

Medical care at the end of life, which is often estimated to contribute up to a quarter of US health care spending, often encounters skepticism from payers and policy makers who question its high cost and often minimal health benefits. It seems generally agreed upon that medical resources are being wasted on excessive care for end-of-life treatments that often only prolong minimally an already frail life. However, though many observers have claimed that such spending is often irrational and wasteful, little explicit and systematic analysis exists on the incentives that determine end of life health care spending. There exists no positive theory that attempts to explain the high degree of end-of life spending and why differences across individuals, populations, or time occur in such spending. This paper attempts to provide the first rational and systematic analysis of the incentives behind end of life care. The main argument we make is that existing estimates of the value of a life year do not apply to the valuation of life at the end of life. We stress the low opportunity cost of medical spending near ones death, the importance of keeping hope alive in a terminal care setting, the larger social value of a life than estimated in private demand settings, as well as the insignificance in quality of life in lowering its value. We derive how an ex-ante perspective in terms of insurance and R&D alters some of these conclusions.

Section 1: Introduction

Medical care at the end of life often encounters skepticism from payers and policy makers who question its high cost and often minimal health benefits. Indeed, many studies have found that a large share of overall life-time spending on medical care, about a quarter, occurs at an individual's last year of life, regardless of whether that care is privately or publicly financed (Hogan et al. 2000; Lubitz and Riley 1993). It therefore seems generally agreed upon that medical resources are being wasted on excessive care for end-of-life treatments that often only prolong minimally an already frail life. This excessive care at the end of life partially affects the overall distribution of the spending on health care as it is highly skewed, and the average spending level is driven by the few biggest spenders. This is often driven by extreme spending levels on dying individuals. For example, it has estimated that about close to half of the overall spending on old individuals in the US stems from the top 5 % of the spending distribution (Garber et al (1998)).

From an economic standpoint, it seems obvious that much of this extreme end of lifespending is irrational in the sense that the value of a life year is often estimated to be in the range of 100 thousand dollars², but overall spending in extending life a few months near death can sometimes be in the millions. Indeed, it can be argued that this vast misallocation of resources induced by excessive end of life health care has important consequences for the overall economy as end of life care makes up a substantial share of the 16% or so of the economy spent on health care. This over-spending on terminal care also has important implications for the public programs, such as Medicare and Medicaid

in the US, that pay for much of this excessive end of life care, as well as Social Security, which ends up financing the longer, but less attractive, living it induces.

However, though many observers have claimed that such spending is often futile, irrational, and wasteful, little explicit and systematic analysis exists on the incentives that determine end of life health care spending. More importantly, no positive theory exists that attempt to explain the high degree of end-of life spending and why differences across individuals, populations, or time occur in such spending. We argue that such a positive analysis is the prerequisite before any normative claims can be made and before any policy proposals aimed at limiting such care can be justified on an efficiency basis.

In this paper, we attempt to provide the first rational and systematic analysis of the incentives behind end of life care. The main argument we make is that existing estimates of the value of a life year do not apply to the valuation of life at the end of life. The main issue is that existing estimates of the value of a life year, e.g. from labor market studies, product demand studies, or regulatory studies, are inapplicable to the valuation that takes place near end of life. In particular, several forces operate in allocating resources towards extending life at its end that implies that the value of extending life in those situations appear larger than those estimated in the existing literature.

First, if resources have no value when dead, a self-interested individual would be willing to forego his entire wealth to extend his life when dying, even if the extension was minimal, only involving a few months. A substantial amount of spending on futile care is rational when there is no value of leaving wealth behind. This claim is highly related to existing evidence suggesting that more than half of personal bankruptcies are associated with unforeseen health care spending (Himmelstein (2005)). We stress that end of life care often involves infra-marginal valuation, rather than the marginal valuations estimated in the literature. When there is non-linearity in the willingness to pay, as when one values an additional year more on the margin the less of life one has left, then the infra-marginal tradeoff relevant for end-of life care differs from aggregating the marginal valuations estimated in the empirical literature. Indeed, many times when the concept of the value of a statistical life is taught and explained, it is prefaced with claiming that it is not about how much people are willing to pay to avoid the infra-marginal choice of having a gun put to their head, which is presumably ones wealth if self-interested. However, terminal care decisions are often of exactly that nature and the non-linearity therefore matters.

Second, we argue that an important ignored component of spending on end-of-life care concerns preserving “hope” of living, and that preserving hope raises valuation. We define the value of hope explicitly as the *current* consumption of *future* survival. If a patient is given 6 months to live, he values those 6 months less than if he knew he would live after that. The fear of knowing that the end is near is a bad. We derive how this value of hope raises the willingness to pay for what appears as otherwise futile treatments. This is because increased survival in the future is now “double-counted” as both having a current consumption value in addition to its traditional future consumption value. Related to such a value of hope would be in the option value of seeing a new treatment being discovered before ones death. Those diagnosed with HIV in the early 1990s clearly benefited from this optional value, taking advantage of the breakthrough treatments that came on the market in 1996. Indeed, the late Christopher Reeve devoted much time and resources of the last part of his life finding a cure to save himself.

Third, the *social* value of a life is often greater than the *private* value of the same life. However, existing estimates of the value of a life year concerns only private valuation. If the extension of a given person's life has positive external effects on others (family members, altruistic tax-payers, or interest groups benefiting from public provision of care), larger spending than what is privately optimal, and estimated, would be observed. Indeed, as the willingness to pay for life extension is limited privately by one's wealth, the mere existence of the Medicaid program for the poor in the US seems inconsistent with a Private valuation approach being relevant, as it would be infeasible for those patients to pay the end of life care they receive.

Fourth, we argue that rational terminal care often is larger for frail patients than commonly argued. In particular, we show when the value of life-extension is the same regardless of the "quality" of life of the patient whose life is extended. Therefore, even though a person may be frail and in very ill health, it may nevertheless be rational for him to value life-extension as much as a perfectly healthy person. There is a vast health economic literature arguing that there is less value in prolonging a life of lower quality, as is the driving assumption of so called "quality adjusted life year" (QALY) analysis. However, we argue that rational terminal care may often involves spending equally much for extending the life of a very frail person as it does for a perfectly healthy one. These forces stress the unrecognized benefits of terminal care spending conditional upon a disease occurring.