
Wrestling Life From Nature: The Opportunity Cost of Critical Care

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Goals:

Careful examination of Medicare data by researchers such as Wennberg and Fisher indicates that the highest proportion of costs are accrued in the last 6 months of life and are consumed by markedly different practice patterns driving sub-specialty outpatient referrals and inpatient treatment involving the Operating Room and ICU. There is little evidence that variations in patterns of care are related to outcome success and emerging evidence that more care may correlate with worse outcomes. At the same time health economists such as Uwe Reinhart have examined the opportunity costs of health expenditures and raised questions about the diminishing returns in terms of health-related quality of life to come from further resource utilization. The goal of this lecture is to examine the implications of these topics in terms of our own practice patterns at an individual, institutional and national level.

Objectives:

1. Familiarize anesthesia care providers and intensivists with the data suggesting more care may lead to worse outcomes.
2. Connect this national data with individual clinical decision-making.
3. Address the forces that drive this process.
4. Examine the value of measures such as “health-related quality of life” and “quality adjusted life year.”
5. Explore ways to use this data to address short and long-term planning for the healthcare needs of the aging population.

Ethical Decision-Making and Opportunity Costs:

Ethical decision-making calls for careful attention to the distribution of resource. Every choice to direct resource in one direction comes with an opportunity cost, the lack of that same resource expended elsewhere. Our ability to see this relationship between allocation and opportunity cost is directly related to proximity. One form of proximity is described by kinship where the closer the kinship, the greater our ability to see the relationship. My decision to purchase a new car has a direct and clear effect on the funds available for my child's education. This is the nearest pole of the kinship continuum. It is also true that my decision regarding a new car has some effect on the way resource is made available for my nephew's community-funded opportunities for sports and the arts and access to mentors in our town. This is an intermediate position on the continuum. At a farther point, it is equally true that my

car-buying decision has implications regarding the healthcare available to the child who was just hit by a car in a neighboring county and is now in the ICU, the child whose father is an uninsured citizen of my state. At the farthest pole, it is unavoidably true that my thoughts about a new car will have an impact on whether malaria is apt to strike the child of a father in Brazil.

This relationship is easy to accept at the nearest pole and equally easy to deny at the farthest pole, a dynamic rooted in our evolutionary biology. It is also realistically more difficult to quantify and change at greater distances from the near pole because of the behavior of intermediaries, also deeply rooted in their evolutionary biology. Moral philosophy and religious teachings of many sorts would argue all the above situation should be viewed the same and that intermediaries should treat all alike, at least in the spirit of the “Good Samaritan” myths. Peter Singer is the most recent, accessible writer about this perspective.

Evolutionary biology would argue that these situations are likely to be treated differently because of highly successful adaptive strategies that people tend to adopt under different circumstances. It would define the kinship continuum in terms of reciprocal altruism and would further argue that both our openness to this reciprocity decreases and our chances of being deceived regarding the reciprocity increases with our distance from the near pole of closest kinship.

Economics are Ethics in Action:

Our capacities for cognition and emotion are developed to the point that we can view this continuum with reason and even some degree of empathy evident in the recurrent appearance across cultures of some equivalent of the Golden Rule: treat others as I wish to be treated. These capacities, however, are up against powerful biological strategies protecting self-interest. In the midst of this, we must nonetheless make choices and regarding our present discussion, we must make choices about resource allocation within healthcare systems. We must base these choices in large part on economic implications that have been a recipe for unnecessary conflict. We are often tripped up by the notion that ethics and economics must be mutually exclusive and that to explore clinical issues through economic lenses will confound the readings from our ethical compass.

Sentiments such as the following, expressed in Graf’s 3/2005 article in Critical Care Medicine regarding a cost-utility analysis of ICU care are common:

Clinical decision making must be based solely on sound medical knowledge and ethical considerations rather than driven by financial constraints

It is closer to the truth to say that economics and ethics are flip-sides of the same coin where economics is the expression of ethics (or lack thereof) in action. The issue of resource allocation and opportunity makes this overlay of ethics and

economics most obvious and by examining the balance with the tools of financial analysis we may see the ethical choices being made more clearly.

The Opportunity Costs of Critical Care:

Examining extreme situations is one useful way to being seeing the outlines of complex phenomena and the ICU is one of the extreme in healthcare. Besides being a healthcare setting in which the fact of our choices might be most visible, it might also be one in which we might leverage the greatest change in the balance of opportunity costs throughout the entire healthcare system. The ICU is one of the primary consumers of healthcare resource. It is therefore one of the primary generators of opportunity costs accrued because that resource is not available to be spent elsewhere. Outcome and utilization statistics strongly suggest that, despite the obvious and frequent example of life-saving benefit from ICU care, enormous resource is often directed in a fashion that has little likelihood of yielding individual or public good. Beyond opportunity costs as systemic harm, there is further evidence that this expended resource can result in personal harm, both through the iatrogenesis of unexamined and poorly understood interventions, undertaken because they *can* be, and through the negative impact ICU care can have on the enormous dignity inherent in the act of dying.

It is variously argued that these allocation patterns are driven by threat of malpractice litigation, patient demand through a cultural denial of death, direct-to-consumer advertising, and media-driven distortions generating expectations of medical intervention that are at best unrealistic and at worst magical. This would suggest the allocation patterns are driven in various ways by the demand side of the economic equation, the patients who seek to consume the supply of medical interventions and are held by some to be perpetually demanding more supply.

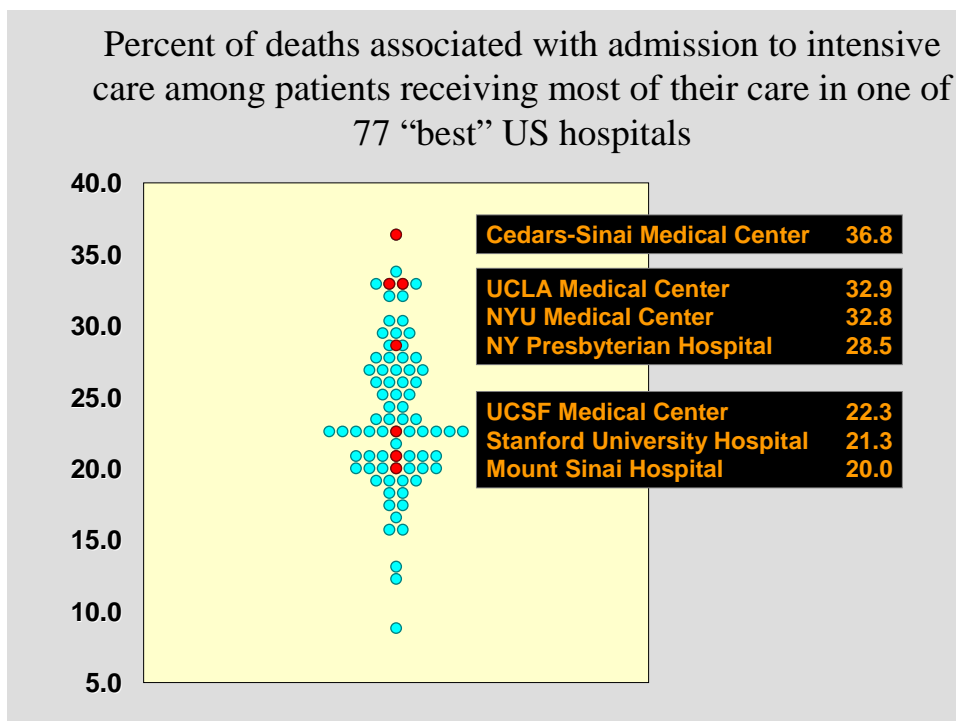
Uwe Reinhardt's work indicates that allocation patterns, at least in the USA, are not driven by demand, but by suppliers of interventions. Further, the work of John Wennberg and Elliott Fisher at the Center for Evaluative Clinical Studies at the Dartmouth Medical School indicates that supplier decision-making about what interventions to supply and when are driven by surprising forces that seem to have little to do with the clinical indications one might expect.

This suggests that the likelihood for positive change in these patterns will come with Critical Care Medicine examining itself, rather than patients, more closely. Two very powerful outcomes may arise from this effort. Providers could become sharper at understanding the factors motivating their decisions and could find more solid ground for the tough, daily choices they must make involving futility and non-maleficence. Secondly, providers could develop a broader repertoire for engaging patients and families as collaborators in these decisions.

Americans are frightened of their healthcare system as they age. It doesn't seem to hear them, nor speak to their condition. Eighty percent of Americans in the

Medicare system do not want to die in the hospital, yet that is where 80% of them die. It is possible this is demographic and the percentages who do not want to die in the hospital will change with a coming generation more comfortable with technological medicine, but I doubt it. This coming generation maybe more comfortable with technology, but it is less trusting of provider decision-making, more aware of provider self-interest, and inundated with information demanding choices people feel overwhelmed by.

In some tertiary care centers of excellence as many as 36% of Medicare deaths occur in the ICU or in a final admission that included a period of ICU treatment while 10 blocks away in another tertiary center of equal excellence, in the same city, the rate may be closer to 20%, a reduction of almost half.



(from January 24, 2005, Duncan W. Clark Lecture, New York Academy of Medicine, by John E. Wennberg, MD, Center for Evaluative Clinical Studies, Dartmouth Medical School. <http://www.dartmouthatlas.org>)

Clinicians wrestle everyday with the pressure of doing *something* because they *can* do it. This is not reassuring to patients and families and is the likely source of their fear that they will be caught up in a decision-cascade rapidly running away with their autonomy and their lives. Some would argue that the efforts to create Uniform Rights of the Terminally Ill beginning in 1985 arose as much in response to fear of this decision-cascade than to the image of senseless interventions after brain-death.

Forces like military spending will probably continue to claim the greatest share of all allocations and force all considerations of how to direct the remaining social resource into a smaller space than it deserves in the best of worlds. Healthcare resource allocation must live in this smaller room with competing social agendas for better or worse in any foreseeable future I can discern.

At the same time careful examination of decisions about allocation of Critical Care resource may teach us a great deal about allocation of healthcare resources in general and lead us to a more humane and beneficial distribution of limited resources in the creation of a larger public good and a richer style of both living and dying. It is arguably the single most important area for developing and benefiting from better tools for collaborative decision-making between clinicians, patients and families.

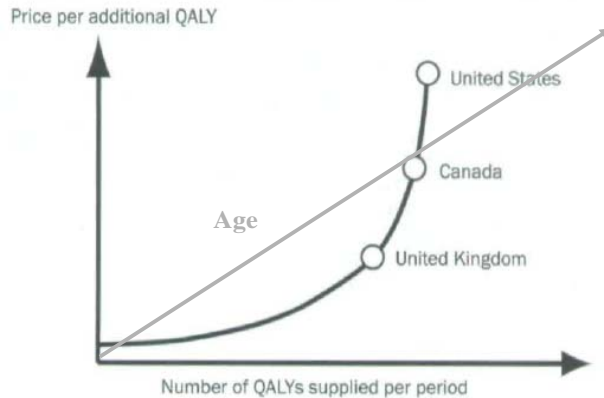
This examination is likely to be just as productive for societies who allocate their resource through a government-directed single payer as for those who allocate through “market-driven” multiple payers. The allocation decisions in the former systems maybe most obvious when we examine what goes on at the doorway to the ICU, where socialized settings more tightly control the number and availability of ICU doorways. The decisions there focus on who gets in. The allocations decision maybe most obvious in the latter systems when we examine what goes on once a patient enters an ICU where access is not the rate-limiting step.

The Quality-Adjusted Life-Year and What It Has To Do With Me

Uwe Reinhardt, given his study of parity purchasing power in comparing healthcare expenditures across currencies and cultures and in his economic modeling of the Quality-Adjusted Life Year (QALY) as a measure of the success of those expenditures might say the following:

Critical Care Medicine can be seen as a socially accepted, collectively funded system for wrestling additional Quality-Adjusted Life Years from nature.

Reinhardt's work indicates the cost for each intervention eventually goes up steeply as more have been tried. The simple and inexpensive ones go first and leaving an increasing percentage of the more complex and expensive ones as the only options. A country's health care system, especially its research and development infrastructure, continually gives its society the option of purchasing additional QALYs at increasingly higher prices. The United Kingdom is the only developed country so far to openly state what the limits are it is willing to pay for increasing intervention.

EXHIBIT 3**Hypothetical Supply Of Quality-Adjusted Life Year (QALY) Curve Offered By A Modern Health Care System**

(from Reinhardt, U, et.al. *US Healthcare Spending in an International Context Health Affairs, Volume 23, #1, 2004*)

Two factors are likely to drive unregulated societies towards greater purchasing:

1. Provider desire to make a living
2. Patient desire to stay alive.

A route to gaining a better grasp on the first factor, provider self-interest, comes with examining the work of Wennberg and Fisher. Self-interest is not confined to the easily maligned drive for economic profit but also includes the much subtler interpersonal forces of colleague and institutional acceptance that effect us all. These may in fact be the more powerful influences. The complexity of these issues are laid out in the most accessible fashion in the above cited lecture by John Wennberg which is available with the Powerpoint presentation at <http://www.dartmouthatlas.org/>

Our Role as Providers and as Patients

One route for exploring how to address the second factor, our desire to stay alive, is to return to the opening ideas about kinship continuum and opportunity costs. A simple exercise may give us some insight into the dynamics at work and how

cultural change could take place in which patients become a force for changing the purchasing dynamics.

We readily take chances everyday in return for payoffs. I take chances with automobiles in return for their payoff of mobility. I take chances with airplanes for the pay-off of efficient long-distance travel. What pay-off could be persuade me to forego my access to Critical Care and take my chances with nature? The answers will likely change with the age I imagine myself and how clearly I can see the kinship continuum.

End of life discussions would be very different in tone and motivation if there was some mechanism in place for predicting the likelihood I would need Critical Care after a certain age, and what its projected average cost would be. The final step of this hypothetical mechanism would allow me to redirect that social resource to provide health insurance for a grandchild that could not be meddled with by intermediaries. This is a tall order, but it is worth exploring what human values would be involved and how ethics might guide our choices as citizens in drawing resource to ourselves or dealing with how it is pushed at us by the self-interest of others.

The exercise that emerges would be the following: Imagine you are 75 years old. What payoff would persuade you to forego access to an ICU for any reason whatsoever, even if it was guaranteed to save you, so that the costs of your care could be redirected to that payoff. You would receive instead, whatever palliative care was indicated to make you as comfortable and adequately fed as possible while nature takes its course? What systems would need to be in place to convince you this was a trustworthy reciprocity, so you were certain the costs of your foregone treatment would in fact reach the destination of your choice?

Suggested Readings and Links

DartmouthAtlasProject (2006). *The Care of Patients with Severe Chronic Illness*, Center for the Evaluative Clinical Sciences, Dartmouth Medical School.
<http://www.dartmouthatlas.org/atlases.shtm>

Fadiman, A. (1997). *The Spirit Catches You and You Fall Down*. New York, Farrar, Straus and Giroux.

Fisher, E. S. and J. E. Wennberg (2003). "Health care quality, geographic variations, and the challenge of supply-sensitive care." *Perspect Biol Med* **46**(1): 69-79.

Reinhardt, U. E. (2003). "Does the aging of the population really drive the demand for health care?" *Health Aff (Millwood)* **22**(6): 27-39.

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Reinhardt, U. E., P. S. Hussey, et al. (2004). "U.S. health care spending in an international context." Health Aff (Millwood) **23**(3): 10-25.

Singer, P. (2001). Writings on an Ethical Life. New York, HarperCollins Publishers.

Wennberg, J. E., E. S. Fisher, et al. (2004). "Geography and the debate over medicare reform." Health Aff (Millwood) **Suppl Web Exclusive**: W96-114.