

CROSSROADS: WHERE MEDICINE AND THE HUMANITIES MEET

Should Age Matter? One Possible Justification for Age-Influenced Medical Rationing

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Medicine exists to treat the sick. This statement, though extremely simple, accurately conveys how most people intuitively feel that society's medical resources should be distributed. Care should be given to those who require it. But if this was the extent of consideration, then almost all of society's social resources would be spent on health care, leaving little for anything else. In 1996 alone, total health care costs in the United States exceeded one trillion dollars, of which Medicare and Medicaid expenditures accounted for about \$351 billion (1). While this was the lowest percentage increase from the previous year (about 4.4%) in almost four decades, healthcare costs continue to be on the rise at about the same rate. There clearly have to be some justifiable limitations. It has become increasingly clear, however, that any proposed system of health care rationing promotes along with it the unequal treatment of people. While this is not ideal, unequal treatment which is morally indefensible is, or should be, carefully avoided. No reasonable health care system would, for example, promote inequalities according to gender, religion, or ethnicity. But a gray area for medical ethics today is age.

Should there be differential treatment between the young and old? Some differential treatment according to age is not only socially acceptable, but is considered sensible and just. Examples of this range from social security benefits to student and senior citizen discounts at movie theaters. But should health care become another example? In a report attempting to quantify the burden of disease, C.J.L. Murray proposed the use of the Disability Adjusted Life Years (DALY) curve as a

way to explain the differential value of life at different ages—in effect, to establish unequal age weights (2). He concluded that the most important socially valuable time is between the ages of about 10 and 60 years. While unequal age weights may be justifiable, Murray's analysis inadvertently produces unequal treatment along lines which are morally indefensible. The purpose of the current paper is to first define the problems with this approach and then provide a new motivation for the DALY curve based on a philosophy of valuing human life first suggested by Ronald Dworkin (3) so that it can be an ethical basis for health care rationing.

ANALYSIS OF ECONOMIC ARGUMENTS

Murray's approach to the use of the DALY curve (2) is both centered in economics and is extremely consequentialist. The age-weighted DALY curve he used is a function graphed in years versus weighting. The only ages to have a weighting of greater than 1.0 are between ages 10 and 60. There are two possible justifications for attributing greater value to the lives of the people in the middle of the curve. The first line of reasoning is as follows:

The theory of human capital views individuals as a type of machine with costs of maintenance and expected output. The value of time at each age for this human production machine should be proportionate to productivity (2).

This is basically a cost-utility analysis, which suggests that the cost of health care spent on a person should be proportionate to, or dependent on, the benefits that person will produce for society. Though the term "productivity" is ambiguous in its use, the assumption is that people in the middle of the DALY curve will

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generally be more productive than people at the extremes, no matter the standards used to measure productivity. This is easily seen if, for example, productivity is considered to be a direct reflection of wages earned or even if it is considered to be the potential to have and raise a family.

Murray's second line of reasoning in support of the DALY curve is that "unequal age weights [are] an attempt to capture different social roles at different ages" (2). Though not completely clear in its message, this approach suggests that people on the center of the curve should be given precedent in health care because they provide for the people on the ends (either through social institutions, such as by paying taxes, or by maintaining families). Because the old and the young generally have limited social roles, time at these extremes is less valuable than time spent at middle age.

While this economic approach does justify the shape of the DALY curve and unequal age weights, it can also inadvertently produce biases within age groups that are discriminatory and unacceptable. Take, as an example, the issue of productivity. From an economic standpoint, the rich are seen as being more socially productive than the poor, but does that mean that the "cost of maintenance" of a rich person can justifiably be proportionately higher than a poor person's? In other words, does a 30 year old rich person deserve more health care than a 30 year old poor person because of some assumed difference in the value of their time? For various social reasons, women and minorities tend on average to earn less than Caucasian males, but to entitle these groups to less health care solely because of this is obviously immoral. As Murray put it,

The logical extension of the human capital approach would be to weight time by other human attributes that correlate with productivity such as income, education, geographical location or even, in some economies, ethnicity (2).

While this may be logical according to economics, it cannot be acceptable for a rationing policy.

These problems can also be extended to Murray's second line of reasoning. There are different social roles for people at different ages but, again, doling out health care according to social role would seem to demand that a middle aged person paying high taxes or rearing a large family deserves more benefits than a less affluent bachelor. Essentially, any person who could not fulfill his social roles and responsibilities to some undefined maximum would be discriminated against in this system of health care rationing.

The basic problem with a strictly economic analysis of health care rationing is that people do not think

merely in terms of economics — a life has more personal and (hopefully) societal value than reflected by a person's productivity or the benefits they will produce. Life has a worth all its own, and that is why its loss is felt and mourned even when a person does not economically improve society. The death of homeless people or citizens of other countries still stir sympathies and incite a sense of loss. Rationing decisions will always be difficult to make, but they should be based on principles and convictions that reflect the whole value of a human life.

INTUITIVE NOTIONS

Before going on to describe a new justification for the DALY curve, there may be some value in exploring intuitive notions about age-based rationing to really get at the issue of comparative values of human life. This paper began with one example of the intuitive notion that some differential treatment between the young and old is already socially acceptable, but others have conducted studies which are by far more scientific and conclusive. Based on a survey done in Australia to test the importance of age and length of benefits on the social evaluation of health care, Erik Nord concluded that,

Subjects are prepared to discriminate [in favor of the young] on the basis of age when deciding which health care projects to fund, and that discrimination increases the greater the difference in age of the patients under consideration. This result holds for both life extending and health improving treatments (4).

While a preference for the young is interesting and requires explanation, what is perhaps more interesting is that only about 20% of respondents chose to discriminate in favor of the young (either for life saving or life improving treatments) when their views were not supposed to be from the perspective of a State Health Board, but were supposed to represent their own personal beliefs (4). What this disparity seems to suggest is that people do not see the young as having intrinsically more valuable lives than the old. The sanctity of life is held in the same respect regardless of age, but if forced to make comparative decisions between age groups when deciding health care policy, significantly more people are willing to advantage the young for no other reason than age.

Situational examples confirm this claim but can also show, based on intuitive feelings, that preferences and deeply held convictions are not solely a function of youth. An accident, for example, which leads to the death of a 70 year-old man is a terrible loss of life and seems intrinsically bad, but most people would think the

death somehow worse or more shameful if the man was 30 years-old. This is identical to situations already considered and does not reveal anything new beyond the Nord survey (4). Through the same accident, however, the death of an infant would be bad, but the death of a young child seems worse to many people. And even worse still may be the death of a teenager. This series of comparisons contradicts the pattern established through the Nord survey and suggests that instead of holding preferences strictly for youth, people may just hold preferences for certain age groups.

If all life has the same intrinsic value, then from where does this preference for any age group stem? It could be argued that the surveyed people were thinking along economic lines when making comparative decisions, leading them to prefer the potential social productivity of youth. But to ensure that people really thought about the questions being asked in an ethically relevant sense, Nord presented them with two philosophical arguments — one advocating equal rights to treatment and the other prioritizing according to age — before they had made their decision (4). This encouraged them to think along principles of equal entitlement to medical attention rather than along their own personal biases. The fact that most of the people surveyed read these arguments and then made decisions favoring the young suggests there may be a principle at work which entitles the young to life saving or life improving care over the old. It may be possible to tease out what this principle is and show that it does not really extend to all young people, but only to those within a certain age group, as suggested by the situational example made above.

NATURAL INVESTMENT

One plausible statement of this principle is a philosophy of valuing human life first suggested by Ronald Dworkin (3). Though it speaks of investments, this philosophy avoids the problems and discriminations of the current DALY curve by being less consequentialist than Murray's approach (2) and taking more than economics into account when answering the question of what qualities really give value to a human life. Dworkin's basic claim is that he does not want to focus "only on future possibilities, on what will or will not happen in the future," since, "[That] ignores the crucial truth that waste of life is often greater and more tragic because of what has already happened in the past" (3). Instead, he considers the value of a human life to be the product of two kinds of investment — what he terms "morally significant modes of creative investment" — the natural and the human (3). Since he purposely defines these investments rather ambiguously, both will have to be

considered separately, more carefully defined, and then shown to fit together in a coherent justification for the DALY curve.

In every human life, there are certain biological stages of development, often termed the natural course of life. Everyone is born after the random mating of genetic material. All people grow and change, first as infants, then children, then adolescents, and finally as adults. Eventually, at the end of this natural course of life, all people die. It is the very existence of these stages that Dworkin is referring to with his notion of natural investment (3). From the first moment of conception, parents and nature have made an investment in lives, and the investment continues to grow with each completed life stage.

This is as far as Dworkin took the idea, but in order to aid the DALY curve, it needs to be extended somewhat further. With the first investment made in a life, a whole series of events is set in motion and expected to go to completion. Nobody creates life with the express purpose of ending it prematurely. In fact, the loss of life that has not yet reached its own natural endpoint is considered to be frustrating and bad. The general feeling, then, is that once the initial natural investment has been made, any disruption in the process it initiates is upsetting and fundamentally affects intuitions.

This concept is important for the DALY curve. The death of any person is terrible, but premature death is worse for two reasons. Objectively, premature death wastes whatever initial natural investment was made in that life, and (natural investment in) life has a worth quite independent of the benefits it may produce, either for society or for any individual. This is the hallmark of Dworkinian theory: a greater regard for past efforts over future possibilities and benefits (3). On a more personal level, premature death is terrible because it denies a person of the natural process of living. This statement may seem trite but it is echoed in sentiments of incompleteness and a desire for more time to accomplish certain goals that people facing premature death will often express. There is the notion that given an initial natural investment in life, people make plans that depend on having a full and complete life — the "normal opportunity range," as Norman Daniels would put it (5). Termination of the process before it reaches its natural conclusion is abrupt, cannot be planned for, and denies a person the chance to utilize the natural investment made in him as much as he desires.

A claim could be made, in opposition to the natural investment line of reasoning, that it discriminates against people born with some sort of disability. It could be argued that these people have had a smaller natural investment made in them than people who are fully abled and, so as long as natural investment is considered

as a basis for prioritizing health care, the disabled could receive lower priority than fully abled people of equivalent age. The response to this is that every human being, fully abled or not, has a natural course of life. The specific stages of development may be different in some way for a person with a disability (though clearly not very different), but they will be personally equivalent in every way as the development a fully abled person undergoes. The same sort of cascade of events has been set in motion with the initial natural investment, so the same frustration would be produced with a premature ending of this life. As long as this is true, and as long as there is potential which has gone unrealized, a disabled person will be on equal footing and will be considered as fully abled.

It is easy to see how a line of reasoning utilizing natural investment allows the prioritization of the young over the old for life improving or life saving health care. Above a certain age, the normal human life is in its last stages and it would be unreasonable for a person to make as many life goals at this point as during his youth. By this age, death is expected as a part of the natural process of living — it is no longer an abrupt or sudden occurrence that cannot be planned for. A person at this stage may still desire a longer time to live and utilize the natural investment made in him, but his death will not be as frustrating or terrible, either personally or objectively, as the death of a 30-year-old. In a sense, the older person has gained all that he can from his life and the initial investment made in it. Any additional gains will be small in comparison to the gains possible for the younger person.

PERSONAL INVESTMENT

If natural investment was the only motivation behind the DALY curve, then it would demand that everyone below a certain old age would be given equal prioritization for life improving or life saving medical care. But that would ignore the intuitive priorities assigned earlier that somehow made it seem worse or more shameful for a teenager to die over a young child or infant. To find a justification for this prioritization, the second kind of investment defined by Dworkin (3), human investment, must be considered. In the simplest sense, human investment is the combination of deeds and emotional attachments that improve a person's life. It is the love given to a child by his parents, the money made by the parents to finance their child's education, and the time spent taking the child to soccer practices and malls. Almost anything which makes a person happier, more successful, or better able to function in society can be considered a human investment, but for the purposes of the DALY curve, this definition must be more specific.

The socioeconomic position a person is born into is decided completely by chance. What this means is that two children who are completely alike in every way may have different levels of human investment made in them simply because one is born to an affluent family while the other is not. The child who gets a pony on his birthday will have a higher investment — since money is considered one form of human investment — than the child who just gets building blocks. But if human investment is to be an integral part of health care rationing, then it must be more limited in scope to keep such random products of chance from affecting health care policy. The child with the pony should be treated the same as the child with building blocks in a morally defensible system. So for the purposes of the DALY curve, a better motivation than general human investment may be personal investment, which will be defined as all the work done by a person towards the accomplishment of his goals and aspirations. This concept briefly arose during the discussion of natural investment when it was argued that premature death is terrible because it does not allow a person to accomplish all that he has reasonably planned in the normal opportunity range offered by the natural stages of biological development.

This definition, however, does not require that a person's goals be highly specific or well defined. In fact, most people must have only broad, general concepts of what their ultimate desires are, such as wanting to raise a family or being successful in a certain profession. The key to the definition is not that the goals be exact, but that the person is actively pursuing their fulfillment through whatever means are available. At certain young ages, for example, pursuing a goal is a matter of realizing the importance of school work or understanding how school fits into whatever broad future plans are being made. At other times, pursuing a goal is a matter of working harder in order to save the money needed to raise a family.

Personal investment is important and relevant for the DALY curve because of the way in which natural investment motivates the curve. If premature death is terrible because it disrupts the plans a person makes assuming a natural course of life, then it must be asked when these plans are first formulated because, in some sense, they are a part of the driving force which encourages people to value their lives. The moment these plans and goals become an integral part of an individual's conception of the future and the way in which they choose to use their natural investment, a personal investment in their lives has been made which will only be frustrated by premature death. Death before this point would not be as terrible (from an objective standpoint) because of the lack of a personal

investment. Instead of merely being the formulation of a goal, however, personal investment is defined to be the actions leading to the fulfillment of that goal in order to introduce an element of practicality into this kind of investment. Consider the following example: children often have fantasies of being fire fighters, astronauts, or doctors when they grow up. But it can be questioned whether they truly have any idea what it means to be a fire fighter, astronaut, or doctor. Do they really imagine themselves in one of those professions, or is it something said just because it sounds neat? To say that at that age children have made a personal investment in life would be inaccurate, because they really have no conception of the future or their part in it. At older ages, however, youths have a much clearer idea of what they want to be when they grow up and have actually taken steps toward that goal by taking certain classes or committing to certain activities; now it can be said that they have made a personal investment which would be frustrated with premature death.

It could be argued that this line of reasoning, if instituted in health care rationing, would discriminate against people who are simply not as ambitious as others or who meander through life without any specific notions of what they want to do. A reasonable response to this would be that there are few people in the world, if any, who have absolutely no goals for their life. What may seem less ambitious or meandering from one point of view may simply be the more humble goal that these people aspire to. But as with natural investment, personal investment is not intended as a system of comparing life goals between people — one person's goals will not be pitted against another's to see who made the greater personal investment. All that is required is that some basic investment is made that indicates planning and concern for the future, even if the future is a broad, abstract notion.

What the issue of personal investment means for the DALY curve is that there is some young age below which children do not really have even the broadest notion of their future. Below this age, no real personal investment is being made because they are basically just following (to a point) the directions of their parents. Children go to school because they are told to and may look forward to it, but they do not see it as a stepping stone to anything else. School, as with many other activities, is something they do because everyone else does it. Above a certain age, however, children acquire a sense of the importance of what they are doing and how it relates to their future, even if that future is only broadly defined. This is the beginning of personal investment because plans have begun to be made that assume and require a natural biological life span, and because the child is now actively working to fulfill

those plans (instead of merely going through the motions). Premature death at this age would be worse or more shameful than before this age because of the personal investment being made on the basis of the natural investment. It is this interplay that produces the intuitive notions comparing the death of a teenager to that of a child or that of an infant, mentioned earlier.

EFFECTS OF THIS NEW MOTIVATION ON THE DALY CURVE

The basic shape of the DALY curve produced by this new motivation is essentially similar to Murray's (2). Ages receiving weights greater than 1.0 are between 12- and 60- years because they seem to best exemplify the notions of natural and personal investment. At roughly the age of twelve, a child is entering adolescence and is beginning to take a real interest in his future. School is no longer just a socially-organized requirement, but is a springboard to the accomplishments he desires. At the other extreme, a person at sixty is entering the last stage of biological life and is setting goals much simpler and more short-term than in his youth. While not set in stone, these two ages are seemingly good guidelines for natural and personal investments to justifiably favor the age group in the middle of the curve.

There is one point of difference between Murray's DALY curve and the one being suggested. Murray's curve starts at zero, suggesting that absolutely no weighting is given to the life of a newborn, and asymptotes at a value greater than zero for ages over 90-years (2). What this means is that a 100-year-old person is given a higher priority for life saving or life improving medical care than an infant, which seems somewhat counter-intuitive. If the arguments of natural and personal investment are extended to the extremes of the DALY curve, then it can be seen that while an infant has made no personal investment in his own life, there is an enormous natural investment that is just at its beginning and has gone unfulfilled. A 100-year-old man, on the other hand, has made a personal investment in his own life, but that investment has now gone to fruition and will provide for little else in the future. In the same way, he is in the last stage of natural life, so the natural investment made in him has also gone to fruition and can be relied on for little else. Having made such a comparison, it would seem that the infant's natural investment outweighs the spent personal and natural investments of the 100-year-old man, suggesting that the infant ought to receive a higher age weighting. Since this also fits intuitive notions, the re-defined DALY curve currently suggested starts at an undefined weighting for a newborn and asymptotes below this value at extremely high ages nearing or surpassing the average life span.

CONCLUSION

There are two additional points worthy of emphasis. The first concerns the universal significance of the philosophical arguments and motivations underlying this analysis, and whether they are really cross-cultural. On the surface at least, cultural differences concerning values as basic as those being discussed seem to differ greatly. While research into such values is difficult and rarely entirely conclusive, some studies have indicated that cultural differences may be smaller than they appear (6). Perhaps common foundations produce vastly dissimilar social behavior or thought. It is not clear that cultures truly vary so greatly that these arguments would not apply at all. Even in more community-based societies, for example, some relevant variation of natural and personal investment may still produce similar outcomes for age-influenced rationing schemes. Clearly, though, more social research must be done to test this notion.

The author would also like to reiterate a point made earlier, but which cannot be stressed enough. Age-based health care rationing is an unfortunate but potentially justifiable outcome in the present environment of finite medical resources. While an analysis using natural and personal investments as its basis is designed to justify the mentality and purpose of the DALY curve, it was designed to do so without any of the additional biases imposed by Murray's approach (2). In utilizing Dworkin's theory as the basis of a new motivation for Murray's DALY curve, and then extending it into fields beyond his original intent, the author has tried to stay true to basic Dworkinian tenants and beliefs. The most essential of these would seem to be that no one life is intrinsically less valuable than another. The DALY

curve can and should only be used in issues of comparison, not as a direct measure of the intrinsic value of life. Hopefully now the DALY curve, and the comparisons made with it, can be based on intuitive convictions and principles that are truly believable, and though the solution is not perfect, it may at least be morally justifiable and simply fair.

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