

## Prevention vs. Cure – Which takes precedence?

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May 2, 2005

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As the sole clinician in a rural area you have two patients who come to see you for care. The first, John, age 52, has a longstanding appointment for counseling to reduce risk factors for heart disease. The second, Bill, age 63 and John's brother, is having epigastric pain that in an over-the-phone discussion you think may be angina.

You have time to see only one of the two patients. If you don't see Bill now he will die at age 65 of an acute myocardial infarction. If you do see him he will die at age 74. If you don't see John now he will die at age 65 of an acute myocardial infarction. If you do see him he will die at age 74.

Assume that you know these outcomes – that they are truth. Remember, you can only see either Bill or John, but not both. Whoever you see will live to age 74. Whoever you don't see will live to age 65. Who is seen is purely up to you.

Who will you see?

This scenario is what philosophers call a thought experiment. It fixes the world with certain rules that require us to suspend our belief of the world; we are to consider a problem only within those rules. For physicians it is hard to work in thought experiments because we know the world works differently. But for philosophers thought experiments are used to try to isolate key questions.

In this case, the question comes down to, "Does prevention or cure take precedence?" If the outcomes are the same for Bill and John, choosing to see one or the other must be because of something inherent in the desire to cure someone or the desire to prevent future disease.

Why ask the question? Because it is clear that US society clearly favors the cure (or treat) approach to disease over prevention. This is evident in at least four ways:

First, in 1988 for every three cents US society spent on prevention it spent ninety-seven cents for curative treatment.<sup>1</sup> Numbers are harder to come by for recent years, but given the spiraling costs of treatment since 1988 it is likely that this ratio has gone down considerably since then – I would grossly estimate that the ratio is closer to 1:99 now.

Second, though there is a shortage of preventive medicine specialists (public health, general preventive medicine, occupational medicine, and aerospace medicine physicians), in the US the number of residents in training in 2004 was less than 0.4% of all residents, not sufficient for replacement or to fill the expanding demand for the specialty's skills and talents.<sup>2</sup>

Third, preventive medicine residencies are the only graduate medical education programs not financed by CMS.

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<sup>1</sup> CDC. "Effectiveness in Disease and Injury Prevention Estimated National Spending on Prevention – United States, 1988." *MMWR* 1992; 41(29): 529-531.

<sup>2</sup> Brotherton, Sarah E, Rockey, Paul H, Etzel, Sylvia I. "US Graduate Medical Education, 2003-2004," *Journal of the American Medical Association*, 2004; 292: 1032-1037. This article provides the denominator: 99,964 resident physicians in 2003-2004. The preventive medicine residents number is provided by the American College of Preventive Medicine.

And fourth, when I put the question, “See Bill or John?” to both lay and medical audiences I almost always get the response to the effect of, “See Bill, he’s in distress now.”

If our values are reflected in how our society spends money, allocates training positions, and builds our health care infrastructure, then it is hard to conclude other than US society values treatment of current disease over prevention of future disease.

So, why is this? The very notion of prevention is that disease doesn’t develop, or it is postponed so that we can live a longer, disease-free life before the inevitable mortal claim on all of us. Why shouldn’t we be indifferent to curing now vs. preventing (or postponing) disease in the future?

In the case of Bill and John you have as much obligation and duty to see either one. They are both existing patients who expect you to keep your promise to attend to them, care for them, and help them to your best ability. Because of the construction of the thought experiment you cannot “cop-out” and say you’ll see Bill now because you can see John again in a week or two. Nor can you refer Bill to another physician in the area. Besides, it may very well be that there is a threshold date beyond which trying risk reduction for heart disease will not be effective for any particular patient.

Our tendency to want to see Bill evolves from several untested but intuitive reasons. First, we have compassion for those in distress. The British philosopher David Hume talks of “sympathy” (we might today call empathy) as a contagious passion that infects human being-to-human being.

Second, instinctively there seems to be strong intuitive desires to help those we know are likely to have imminent problems. This is similar to our tendency to be more charitable to those who are near than distant.<sup>3</sup>

Third, we believe that our preventive acts are only statistical, whereas our curative acts are certain. This mistaken belief perhaps derives from our sense that we have more control over cure outcomes than prevention outcomes – we think that we *do* cure, whereas we only *facilitate* prevention. This notion of doing vs. facilitating is an important one, because if we believe that our curative actions are more effective than our preventive ones then we will more likely act toward the more effective.

Fourth, generally we are more comfortable with the idea that our attempt to help those in current distress can be riskier than preventing future distress. The editor of the British Medical Journal, Fiona Godlee, expresses this well when she states, “Because it is acted on healthy people, preventive medicine needs even stronger supporting evidence on benefits and harms than therapeutic interventions.”<sup>4</sup>

These four reasons for preferring Bill over John cannot be ignored, but I believe they are wrong. Let me show you why.

First, to Hume’s sympathy. Yes, it does exist in some fashion. And we can’t ignore our emotions – what Hume called passions – because they are a driving force in our lives. The contemporary philosopher Robert Solomon has argued that our emotions are not necessarily the disparaged whimsical, illogical entities we make them out to be, but rather they are carefully considered judgments:

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<sup>3</sup> Kamm, FM. “Does Distance Matter Morally to the Duty to Rescue?” *Law and Philosophy* 2000; 19: 655-681.

<sup>4</sup> Godlee, F. “Editor’s choice: Preventive medicine makes us miserable,” *BMJ* 2005; 330: 7497.

Emotions are not the brutish, unlearned, uncultured, illogical and stupid drives that they are so often argued to be. To the contrary, they are extremely subtle, cunning, sophisticated, cultured, learned, logical and intelligent.<sup>5</sup>

If this is true, then our emotions should be able to have sympathy with the notion of future disease. Our cultural bias is to the contrary, and so we take on Hume's unthinking sympathetic response, not Solomon's sophisticated and subtle judgmental emotion. All it would take is some training of our imagination: think of what the impact of a future preventable disease would mean, how it would be debilitating, harmful, and ultimately fatal. If we were to be more future-oriented there is no clear and logical reason why the future harm of disease for John should evoke any less passion than the immediate distress of Bill.

Second, in ethics literature there are solid arguments for our moral responsibility for helping geographically-distant individuals just as much as we should be helping closer individuals.<sup>6</sup> These logical and intuitive arguments would hold analogous effect on the time-distance of the effect of preventive measures for John as compared with our obligations to act on behalf of the time-closer distressed patients like Bill.

Third, curative/treatment medicine is as statistically-oriented as is prevention. When we suggest John quit smoking or be compliant with his anti-hypertensives we don't *know* that it will have an impact on his future health. Similarly when we prescribe nitroglycerin for Bill we don't *know* if it will relieve his distress. Drugs and devices are approved for use based on the statistical proof that they work for a population of individuals, not because they will work definitively on any particular individual. Genomics and proteomics may help us improve our use of curative care by targeting it specifically to individuals who are more likely to benefit. But the phrase "more likely" is apt to be with us for decades after the introduction of genomics, which will also be used for targeting prevention-oriented prescriptions as well.<sup>7</sup>

Finally, to Godlee's assertion that acting on healthy individuals requires a higher standard of evidence on benefits and harms. She would be right on the "harms" part if she is talking about similar types of harms, but alas she glosses over the distinctions necessary: with prevention and cure we have to separate out the timing of our actions with the timing of our effects. There are various combinations, and their long-term consequences might be variable. We can perform surgery on a patient that causes harms (from anesthesia, pain from tissue disruption, etc.) and benefits (removal of an infected appendix) today. Similarly, we can have benefits today and harms in the future, like with the higher incidence of secondary cancers following certain chemotherapies. Or we can have harms today and benefits in the future, common to prevention, such as with the usually minimal side effects of vaccinations, or the anxiety of waiting for the results of a mammogram which catches a carcinoma in-situ for a complete cure.<sup>8</sup>

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<sup>5</sup> Solomon, Robert, "The Logic of Emotion," *Nous* 1977; 11:41-9. See Solomon's more expansive treatment of this approach in his *The Passions, Emotions and the Meaning of Life*, Indianapolis: Hacking Publishing, 1993.

<sup>6</sup> See the reference for Kamm above. See also Singer, P "Famine, Affluence, and Morality," *Philosophy and Public Affairs*, 1972; 1(3): 229-243.

<sup>7</sup> [www.genomas.net](http://www.genomas.net), accessed May 5, 2005.

<sup>8</sup> Men taking an aspirin a day for cardiovascular disease prevention could be an example of both harms (slightly higher rates of stroke and gastrointestinal bleeding )and benefits (reduced myocardial infarctions) in the future. U.S. Preventive Services Task Force, "Aspirin for the Primary Prevention of Cardiovascular Events: Recommendations and Rationale," January 2002. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/clinic/3rduspstf/aspirin/aspr.htm>, accessed May 5, 2005.

Of course, many prevention activities also have benefits that accrue almost immediately with minimal harms. Beginning a physical fitness program has benefits not just for avoiding future coronary heart disease or osteoporosis, but also produces a sense of well-being through stress reduction. Vaccinations take only a couple of weeks to a month or two until immunity is established.

So why, other than for purely altruistic brotherly reasons, should we think that John would give up his future for Bill's present? It's not clear that he would, or that he should. But that's a question for John. My choice: I'd ask the brothers to make their own decision together, because given their known outcomes from this thought experiment, I am indifferent as to who I would see. What do you think?

word count without references or title: 1626.