

**Session 6B: Health Status and Its Impact on Mortality**  
Discussant: S. Jay Olshansky

**Presented at the Living to 100 and Beyond Symposium**  
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**Papers Presented**

*Health Expectancy*

Faye S. Albert, John M. Bragg and James C. Brooks, Jr.

*Human Behavior: An Impediment to Future Mortality Improvement*  
*A Focus on Obesity and Related Matters*

Sam Guterman

*Health, Wealth and Wisdom—Living Long, Living Well: An Actuary Muses on Longevity*  
Michael J. Cowell

I am delighted to have the opportunity to discuss these three papers, and I would encourage you to read them carefully. In fact, the first paper that I'm going to discuss by Michael Cowell was one of those papers that drew me in right from the start and had me reading from beginning to end without interruption. In fact, I was really looking forward to meeting Michael because of his rather amazing and accurate visions of the present from 1985, and his sound advice. If only America had listened to him in 1985, or even today—we would all be better off.

Let me start out by saying that this is a beautifully written manuscript that weaves together a rather important historical perspective from one of my favorite characters in history, Benjamin Franklin, and a paper written by a young whipper snapper actuary by the name of Michael Cowell in which he modestly sets forth an argument in the *Actuarial Digest* in August of 1985 for how to cure the inevitably rising costs of health care—which he acutely recognized even then as on the brink of running out of control. Recognizing that the population was

growing rapidly; and population aging was shifting the age structure such that many more people of older ages who are more likely to use expensive health care near the end of life was about to rise; and our apparent insatiable desire for increasingly more sophisticated and expensive devices and interventions designed to ward off or treat disease and extend life; he appropriately noted that we were headed down a slope of health care costs much like water passing over Niagara Falls. My favorite quote from his paper was the following: “In the opinion of the Comptroller General, the most serious threat to the very survival of the Nation is not someone holed up in a mountain cave on the Afghan-Pakistan border, but our own fiscal irresponsibility.”

The central focus of Cowell’s paper is an aphorism by Benjamin Franklin that everyone has heard: “early to bed, early to rise, makes a man healthy and wealthy and wise.” He uses this aphorism to describe how wealth and education influence health and longevity, and there is a long history of evidence establishing these links. I must say, by the way, that I am a big fan of Benjamin Franklin, having read his autobiography not long ago—I would count him as one of the most brilliant thinkers of his or any era. In fact, it is safe to say that along with Luigi Cornaro, the Italian Noble of the 15<sup>th</sup> century who lived to the age of 98, Franklin was one of the earliest proponents of caloric restriction. Of course, Franklin chose this approach to life and food, quite frankly, because he was cheap. Like my father-in-law, whose nickname was affectionately coined by his daughter, my wife, as “pinch-a-penny-Benny” and who is still doing reasonably well in his late 80s, Benjamin Franklin did everything he could to stretch the value of a penny, including reducing his intake of calories.

The premise of the manuscript is that actuaries spend an enormous amount of time passively recording statistics on sickness and death, and in the past have viewed this work more as a reflection or description of the status quo, but in recent years you are learning more about

how to use this knowledge to exert a positive influence on health and duration of life. I guess this makes sense given the comment I received yesterday during my luncheon presentation indicating that actuaries have death rates that are 35 percent lower than the rest of the population. Cowell is essentially encouraging members of the actuarial profession to assert themselves more as advocates of public health, and to go one step further by communicating these relationships in such a way that that you have a positive impact on the health and longevity of the individuals who eventually become the statistics in your tables.

Cowell is right on target today with his recommendations, as he was in 1985. His advice is to:

Not smoke

Stay lean

Eat—and drink—sensibly

Exercise regularly

Keep on learning

Keep on earning—and spend less than you earn

Sleep soundly

Buckle up

Manage stress

Monitor your blood pressure and cholesterol, and get regular physical checkups

With few exceptions, this is exactly the same advice given to us by Luigi Cornaro in the 15<sup>th</sup> century (but they didn't have seat belts or blood pressure monitors back then).

There are two additional points in this wonderful essay that I need to comment on. The first is the suggestion that there is a runaway psychology of entitlement to health care, or to other ingredients for the ‘good life,’ that, if not tempered by personal responsibility for wellness and government promises of health and happiness for all, nations will increasingly find it impossible to deliver anything to anyone. There can be no arguing with this fundamental point, but it sounds very close to an argument for health care rationing, although not stated explicitly.

The last issue brings me back to Benjamin Franklin’s penny-pinching ideas. In the past, pinching pennies, when applied to the intake of food, translated into the equivalent of caloric restriction. If you spent less on food then you ate less. Franklin and Cornaro have this attribute in common and it worked for them. However, Franklin’s principle of penny pinching, when applied today, has the exact opposite effect—it leads to obesity, diabetes, an increased risk of cardiovascular disease, and all of the complications associated with carrying extra weight. Why is this so? Because if a working couple has \$10 dollars to feed a family of four for supper, and to do it quickly because both spouses are working long hours, it is far easier and less expensive to run down the street to the local McDonalds to pick up 4 Big Macs, fries, and cokes, then it is to spend twice as much feeding the same family a healthy diet of lean meat, fruits, and vegetables. Franklin would turn over in his grave if he knew about the modern economics of poverty and food consumption.

The second paper I want to discuss is by Sam Gutterman on how human behavior is an impediment to future mortality improvement. As I told Sam two days ago, this 109 page behemoth of an article is the most comprehensive treatment of the obesity epidemic that I’ve seen. When I asked Sam what he had in mind when writing this paper, he told me that he got started and simply couldn’t stop—finding one issue after another to add into the mix. I would

add that also contained in the manuscript is a discussion of the most recently published science on the topic, and so I must applaud him for his outstanding scholarship.

For anyone not familiar with the obesity epidemic, they will be after reading this paper. Covered are issues of how to measure it, how the obesity epidemic fits into the context of the historical battle against tobacco, what the trends have been in the U.S. and abroad and why it occurred, the contributing factors, the effect of obesity on insurance, morbidity, health care, and the quality of life of the obese, and even the prevention and management of obesity. This latter issue is somewhat touchy because I will tell you that based on my experience with how to deal with the obesity epidemic, it always sounds simpler than it really is. Caloric intake and energy output is the equation, but the conditions that have changed in the United States and elsewhere in terms of the types of foods that are available, the presence of poverty, the introduction of more leisure time and sedentary lifestyles, the proliferation of computers, advertising to children, and I could go on, have all contributed to the rising epidemic, so fixing the problem is not going to be as simple as increasing energy output and decreasing the intake of calories. The problem is systemic to our modern world, and unlike cigarettes where we can choose to eliminate them from our lives, we cannot live without food. I was once told by a colleague that, "Jay, the problem with obesity is a simple matter of an excess of 50 to 150 calories per day, so all we have to do is remove those excess calories and the problem disappears." My response was that the very fact that it took so few extra calories to create the problem, means that it will be even more difficult to conquer, because an extra 50 to 150 calories today can be had with one extra soda, glass of juice, or bite of ice cream.

Where Sam really gets into the meat of the matter is when he discusses the implications for mortality projections. It is here that I have much more experience, but I'm afraid no more

insights than Sam's conclusion that things are going to get much worse before they get better. When are those involved in mortality projections going to realize that obesity leads to diabetes, and diabetes will be the health calamity of this century. Sure, it's possible, perhaps even likely, that additional fixes for diabetes will be created by medical technology—I certainly hope this is the case—but it is important to remember that we're dealing with a fundamentally different problem today than the one faced by current adults who acquired their obesity in adulthood. We now have a generation of children that acquired their overweight and obese condition at much earlier ages than any previous generation in history, and they will carry the elevated risks of disease with them throughout the remainder of their lives, and for decades longer than people who are obese at middle ages today. That this generation is in trouble is the fundamental message of Sam's paper, and the implications of this phenomenon for mortality forecasts are obvious. You will not find a more comprehensive treatment of the topic than this paper, and I would encourage the actuaries in the room to read this if they want to get a good sense of where this issue will play itself out in the future and where we're headed. Whether the suggestions for how to fix the problem are worthwhile will need to be evaluated with time, but it's not like we haven't known how to fix the problem of obesity, at least in principle, for decades. During the time this knowledge existed, we have only grown larger.

The final paper by Albert et al., is an actuarial recreation of the measurement of health expectancy that has been around for decades, with a rich literature and leader in the name of Jean Marie Robine, who has attended this conference from its inception. An international organization known as REVES has been around since the early 1980s, members of whom have published hundreds of papers on the topic—with detailed descriptions of methodology, advantages and disadvantages of the various approaches and measures, comparisons across

nations, and historical trends. The authors of this paper would benefit greatly from reading this literature. Having said that, if the concept of health expectancy is genuinely new to the actuarial profession, which I find hard to believe by the way, then these authors are the founding pioneers. For having performed this service, you deserve the credit for having reinvented the wheel, which is actually a valuable service if actuaries begin using these measures in their daily lives. However, I would strongly recommend that these authors and actuaries in general spend some time pouring through the literature on this topic.

The authors do make the case that the measures of health expectancy developed here, which were defined, for the first time as far as I can tell, on definitions based on assisted living and skilled nursing, have the potential to be valuable resources for doctors and other health care professionals in providing useful information to patients. It is here that the authors have fallen into the trap of the ecological fallacy, suggesting that population data can and should be applied to individuals based on interactions with their personal physicians. This cannot be done legitimately, even though I will admit that there are some authors out there making millions of dollars trying to sell their calculations of real age to an unsuspecting public, having been misled to believe that such measurements are both possible and meaningful. The authors here have their heart in the right place, and indeed the various measures of health expectancy may prove to be valuable for actuaries evaluating trends in the health status of populations—I just wouldn't get carried away with the results. Suggesting that health expectancy has the potential to increase survival probabilities among seniors is perhaps a bit too much for the authors to ask of this metric, but I suspect that once they read the literature on this topic they'll realize that they've become excited about an issue that is of general importance to public health, and perhaps to the actuarial industry in particular.