Myth and Measurement — The Case of Medical Bankruptcies

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During the push to pass the Affordable Care Act, President Barack Obama often described the "crushing cost of health care" that was causing millions of Americans to "live every day just one accident or illness away from bankruptcy" and repeatedly stated that the high cost of health care "causes a bankruptcy in America every 30 seconds." Stories of illnesses and injuries with financial consequences so severe that they caused households to file for bankruptcy were used as a major argument in support of the 2010 Affordable Care Act. And in 2014, Senators Elizabeth Warren (D-MA) and Sheldon Whitehouse (D-RI) cited medical bills as "the leading cause of personal bankruptcy" when introducing the Medical Bankruptcy Fairness Act, which would have made the bankruptcy process more forgiving for "medically distressed debtors." But it turns out that the existing evidence for "medical bankruptcies" suffers from a basic statistical fallacy; when we eliminated this problem, we found compelling evidence of the existence of medical bankruptcies but discovered that medical expenses cause many fewer bankruptcies than has been claimed.

Policymakers' beliefs about the frequency of medical bankruptcies are based primarily on two high-profile articles that claim that medical events cause approximately 60% of all bankruptcies in the United States.[1,2] In these studies, people who had gone bankrupt were asked whether they'd experienced health-related financial stress such as substantial medical bills or income loss due to illness. People were also asked whether they went bankrupt because of medical bills. People who reported any of these events were described as having experienced a medical bankruptcy. This approach assumes that whenever a person who reports having substantial medical bills experiences a bankruptcy, the bankruptcy was caused by the medical debt. The fact that, according to a 2014 report from the Consumer Financial Protection Bureau, about 20% of Americans have substantial medical debt, yet in a given year less than 1% of Americans file for personal bankruptcy, suggests that this assumption is problematic. Clearly, many people face medical debt but do not go bankrupt. Even after correction for overly broad definitions of "medical" expenses,[3] the existing, widely cited evidence on medical bankruptcy is built on the fallacy that when two things occur together there is necessarily a causal relationship between them.

To understand the problem, consider an analogous line of inquiry: suppose we want to know which factors increase a person's chances of becoming a technology billionaire. Investigation of recent technology giants might suggest that dropping out of college is a high-return strategy (think: Bill Gates, Steve Jobs, and Mark Zuckerberg [dropping out of Harvard seems to have a particularly high payoff]). By examining only college dropouts who have already became technology billionaires rather than all college dropouts, this analysis misses the fact that most college dropouts do not go on to lucrative careers in the tech business. A similar problem pervades the current literature on medical bankruptcy. The studies mentioned above examine the experiences only of people who went bankrupt, but it is impossible to infer the role of medical expenses in causing bankruptcy without information on the proportion of the population with large medical expenses that did *not* go bankrupt.

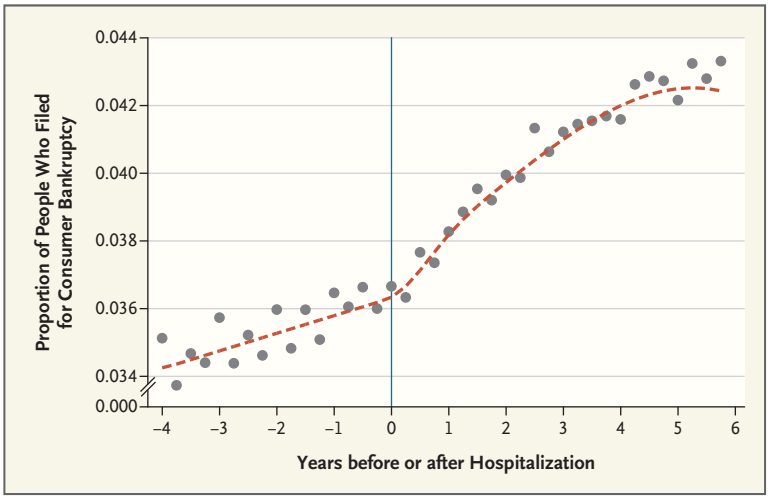
To estimate the share of bankruptcies actually caused by medical factors, we therefore selected a sample of people who were admitted to the hospital in California and tracked information on their annual credit reports, including whether and when they filed for bankruptcy. Because we examined the relationship between when people go to the hospital and the timing of any bankruptcy, we were able to estimate the increase in bankruptcy filings caused by illness or injury, rather than the fraction of people filing for bankruptcy who happen to have substantial medical expenses.

Our study was based on a random stratified sample of adults 25 to 64 years of age who, between 2003 and 2007, were admitted to the hospital (for a non–pregnancy-related stay) for the first time in at least 3 years. We linked more than half a million such people to their detailed credit-report rec-

ords for each year from the period 2002–2011. The graph shows the results of our analysis.

The results show a clear effect of hospital admission on bankruptcy: the rate of bankruptcies rises sharply in the years after hospital admission, and this change is statistically significant (at conventional levels) both 1 and 4 years after the admission, after which bankruptcies appear to level off. This finding indicates that the expenses that result from the illness or injury that caused the hospital admission — for example, out-of-pocket medical costs and lost labor income — cause some people to file for bankruptcy. However, the magnitude of the bankruptcy effect is much smaller than previously thought: we estimate that hospitalizations cause only 4% of personal bankruptcies among nonelderly U.S. adults, which is an order of magnitude smaller than the previous estimates described above.

We calculated this estimate as follows: the graph shows that, on average, a hospitalization increases the annual probability of going bankrupt in the following 4 years by 0.004. Multiplying this figure by the annual hospitalization rate of 7.8% for our population (which we calculated using the 1999–2010 Medical Expenditure Panel Survey) reveals that 0.031% (0.004×0.078) of the population goes bankrupt each year as the result of a hospitalization. Given that the annual household bankruptcy rate is 0.8% among the nonelderly,[4] hospitalizations cause about 4% (0.031÷0.8) of bankruptcies among nonelderly adults. A similar calculation for a subsample of uninsured adults reveals that even in that population, hospitalizations are responsible for only 6% of bankruptcies[4]; for this population, the effect of a hospitalization on the likelihood of bankruptcy is (not surprisingly) larger, but the hospitalization rate is lower than in the overall nonelderly population.



The Effect of Hospitalization on the Likelihood of Filing for Bankruptcy.

The x axis shows time relative to the index hospital admission. Each data point represents the proportion of people who filed for personal bankruptcy between the year before the start of our credit-report data and the indicated date, after adjustment for any patterns in bankruptcy rates by calendar year. The dashed line shows the estimates from fitting a flexible, nonlinear function quantifying the relationship between the timing of hospital admission and the bankruptcy rate, again with adjustment for calendar-year trends. (More detail on the sample and estimators can be found in Dobkin et al.[4])

Of course, these results do not cover all potential medical bankruptcies. They do not consider hospitalizations for children or for the elderly — although in other work we found that hospitalizations have no effect on bankruptcy rates among the elderly.[4] Our results are also specific to our population — people in California hospitalized for non–childbirth-related conditions who have not had a hospital admission in the previous 3 years (although they may, and often do, have additional admissions over the subsequent years). However, as we have described elsewhere, recent related research using different sample populations (but also using large administrative data sets and a similar research design) also revealed a limited effect of health shocks on bankruptcy rates.[4]

Perhaps most obviously, our analysis excludes illness and injuries that do not result in a hospital admission. However, our sample of hospitalized people is likely to include most people with large medical expenses: in the Medical Expenditure Panel Survey, we estimated that about 63% of people in the top 5% of annual medical spending (at least $8,433) had had a hospitalization in that year. This finding suggests that focusing on hospitalized people probably does not lead to vast underestimation of the effect of all illness and injury on bankruptcy rates.

Our results also do not speak to the financial costs of hospital admissions outside the bankruptcy-filing decision. We have found that hospitalizations cause increased out-of-pocket spending on medical care, increased medical debt, and decreased employment and income.[4] These costs may have considerable adverse consequences, and evidence from the Oregon Health Insurance Experiment indicates that they can be partially ameliorated by health insurance.[5] But our findings suggest that medical factors play a much smaller role in causing U.S. bankruptcies than has previously been claimed. Overemphasizing "medical bankruptcies" may distract from an understanding of the true nature of economic hardship arising from high-cost health problems.

Disclosure forms provided by the authors are available at NEJM.org.

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Broken Hearts and Opened Eyes

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On Valentine's Day, a lone gunman pulled a fire alarm in a high school in Parkland, Florida. As students streamed outside, they were met with gunfire from a semiautomatic weapon. Seventeen people were killed, and several more victims were hospitalized. The gunman, a former student at the high school, eventually stopped of his own accord, laid down his weapons, and attempted to blend into the crowd before fleeing the scene.

In the immediate aftermath, public attention to the Parkland community has been intense, as a nation rallies behind the victims, their families, and their community. Funerals are attended by thousands. The President and other dignitaries rush to the scene. Resources from federal, state, and local authorities are made available. This focus is understandable, given the magnitude of the event. It also feels sadly familiar and predictable, from the sequence of events in the news cycle, to the sparring over whether it is "too soon" to debate gun control, to the exhortations for more mental health resources.

Lost in these now-standard rituals, however, is the fact that more people died from gunshots elsewhere in the United States on the same day as the Parkland shooting: we already know that 28 additional gun-violence deaths occurred on February 14, 2018, and because roughly 60% of U.S. gunshot deaths are suicides, it is virtually certain that even more will be discovered in the days and weeks to come. The other people who died form a more heterogeneous group than the Parkland victims, with varied ages, hometowns, families, and socioeconomic backgrounds. Their firearm-related deaths also better reflect the daily reality of gun violence in America: it is a diffuse and multifaceted problem. Because the person who pulled the trigger is not the common link among them, it is easier for us to miss the shared thread that weaves through these stories of firearm violence.

A 36-year-old man was shot and killed after an argument in Las Vegas.

A man was shot and killed by police in Fort Worth, Texas, after brandishing a gun to threaten his ex-girlfriend.

In Westlake, Louisiana, two young boys were playing with a gun in a home, and one accidentally shot and killed the other.