

## **EconoFact Chats: Places Matter -- Diverging Mortality Across States**

**Ellen Meara, T.H. Chan School of Public Health at Harvard University**

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Michael Klein:

I'm Michael Klein, executive editor of Econofact, a nonpartisan, web-based publication of the Fletcher School at Tufts University. At Econofact, we bring key facts and incisive analysis to the national debate on economic and social policies, publishing work from leading economists across the country. You can learn more about us and see our work at [www.econofact.org](http://www.econofact.org).

Michael Klein:

How healthy are Americans? Clearly the answer these days is pretty bleak, when today, more than 800,000 Americans have died of COVID. Life expectancy in the United States fell by one and a half years in 2020, the biggest single-year decline since World War II.

Michael Klein:

But there were concerning trends even before COVID. After a 50-year rise, life expectancy flattened out beginning in 2010, and even declined slightly after 2014. This may not surprise you if you've heard about the so-called deaths of despair coming from suicides and drug- and alcohol-related reasons. What you may not be aware of is that during the last 35 years, there's also been a widening disparity in life expectancy across states. The reasons for this are complex, but is discussed in the article, 'Rising Geographic Disparities in US Mortality,' just published by the American Economic Association in one of their flagship journals. There are lessons to be learned from differences across states.

Michael Klein:

One of the co-authors of that article is my guest today, Ellen Meara. Ellen is a professor of health economics and policy at the T.H. Chan School of Public Health at Harvard University. She's also an elected member of the National Board of Medicine. Ellen, welcome to a Econofact Chats.

Ellen Meara:

Thanks Michael.

Michael Klein:

Ellen, following up on the title of your article, how big are geographic disparities in US mortality?

Ellen Meara:

Thanks, Michael. Well, they certainly are big. Let me take a moment to remind people of what we did. So our focus is on midlife mortality. So deaths to those between the ages of 25 and 64. And we look differences across nearly all US states, and we present some numbers on how these disparities changed over time as well as some current state-by-state comparisons. And consistent with some emerging evidence from epidemiological studies, we confirmed that these gaps in mortality across US states have widened since around 1980, and they've widened a lot.

Ellen Meara:

So for example, by 2016 West Virginia's midlife mortality rate was twice that in Minnesota. It's kind of mind-boggling. And these differences are especially stark among people without a college degree. But even more surprising maybe to some who say, "I'm not surprised there's differences across states," these differences weren't always present. They weren't really there in 1980.

Michael Klein:

Are there any particular examples of states that might have changed their rankings or moved from better to worse?

Ellen Meara:

Yes, there are. In the quarter century between 1992 and 2016, for example, take the difference between California and Ohio. In 1992, the age-adjusted mortality rate for these two states was nearly identical. But while California experienced a really remarkable decline in mortality rates, Ohio's death rate hardly budged.

Michael Klein:

So you're not the first to notice rising disparity. I mentioned before the deaths of despair, the work of Angus Deaton, and Anne Case. What have other researchers looked at as the possible causes of this rise in mortality rates?

Ellen Meara:

You're right. And people have been looking at this. And in fact, given the recent evidence of rising disparities in mortality by education, explanations related to education are often put forth to explain these differences. So in fact, that California-Ohio comparison I mentioned, at first blush, it's consistent with such an explanation because mortality in a high education-state like California may have declined by more because of a national trend favoring more highly educated people. That is, we see mortality rates dropping more rapidly among college graduates than among other Americans.

Ellen Meara:

In our paper, we explicitly test how this 'non-college penalty,' as we refer to it, of higher mortality for those not graduating from college, contributed to the rising cross-state disparities in mortality. Related to this, if highly educated people migrate to a state like California more than to states like Ohio, this is another way education could contribute to rising cross-state disparities in mortality. But in fact, in the paper, we do an exercise to test this explanation. We ask how much would mortality gaps rise if there were no change in the share of college-educated people across states since 1992. And the answer is that wouldn't explain much of it.

Michael Klein:

So what's going on if it's not education? Is it just that education is correlated with lots of other things?

Ellen Meara:

Well, I think I'm glad you're asking because I think the other thing that people turn to immediately is 'isn't this income inequality?' And in fact, as we started this paper, we thought we would learn that long term income changes or wage changes were playing a role because mortality isn't the only thing that's becoming more equal over time across states. After decades of convergence in earnings across states around the same time in the 1980s, that convergence stalled and even reversed. But what we found in our

paper is that rising income inequality really didn't explain these differences, and we can talk about that more in a bit.

Michael Klein:

So it doesn't seem to be solely education. It doesn't seem to be solely income inequality. Well, what's left over then?

Ellen Meara:

So in the paper we talk about 'place-effects' as a third explanation.

Michael Klein:

And what does that mean?

Ellen Meara:

So these could be a variety of things after you take out income changes over time, and educational changes over time. So the overall health environment is a function of policies that affect the healthcare system in a state, the share of its population able to access healthcare, and the health of a population. So on the policy side, you could think everything from taxes on tobacco or sugary drinks or infrastructure that encourages physical activity, such as safe spaces to exercise. And you can certainly think about how a state approaches folks who may be uninsured and whether they try to expand access to health insurance. But we also know that health behaviours like smoking or other substance use can have a profound influence on health outcomes. Both the behaviour of people that affect health outcomes and the overall health environment affect those outcomes. Case and Deaton really focused on deaths of despair in response to things like local job loss, changes in social structure, and other economic consequences of those things. But long-run changes are also important. Changes in states' policies are health investments, that enhance health and longevity.

Michael Klein:

So if you're looking at the state-by-state effects, I guess one of the things that is important is that states can differ in their policies. And that's what you're focusing on to a large extent. And they can also differ in the way people behave, but state by state, the policies are sort of within the state borders. In the article, you talk about what you call 'health capital,' where capital here means something very specific to economists. Economists, we refer to physical capital like factories and equipment and human capital like education and training. So what do you mean by health capital?

Ellen Meara:

Of course. This concept, which was pioneered by Michael Grossman in the 1970s; and it's been considered by many others, including Case and Deaton... it's simply the notion that individuals invest in health capital through behaviors like exercise, diet, or medical care.

Michael Klein:

So are there two-state examples where states otherwise being similar would have sort of very different health capital?

Ellen Meara:

Sure. I think a great example of that is Victor Fuchs' classic observation about Utah versus Nevada. So Fuchs observed that Utah had much lower death rates than its neighboring state, Nevada, even though

those states have similar levels of income, education, and access to healthcare. He argued the gap could be explained by the differences in behavior across those states, noting big differences in smoking, drinking, and family structure, comparing Utah, where members of the Mormon Church are prominent, and Nevada, which of course is where we have Las Vegas or Sin City. So it isn't just behavior that builds health capital, but policies. And of course, many behaviors, we should say, are influenced by policies.

Michael Klein:

So you're taking a gamble if you live in Nevada, I suppose.

Ellen Meara:

Pun intended.

Michael Klein:

Yeah. Pun intended. So we know policies can help increase physical capital. For example, you can have depreciation allowances and taxes. So there's a greater return for investment in factories and equipment. And also in human capital, there are policies like provision of public education. What are some policies that can help foster greater health capital in the country?

Ellen Meara:

Sure. Well, there's good evidence that things like higher tobacco taxes, for example, greatly lowered use of tobacco. We also know that states that expanded Medicaid under the Affordable Care Act have been shown to have better trends in a number of health outcomes, including mortality, compared with those that did not. And a growing literature has documented causal effects of the implementation of Medicaid in the 1960s with long-lasting beneficial health and labor market effects decades later among the earliest Medicaid-enrolled infants. It turns out later expansions of Medicaid to low-income pregnant women also seem to improve the health not just of the women, but their children decades later.

Michael Klein:

So this variation in health capital across states, which you're linking very explicitly to policies like Medicaid expansion, is linked to differences in mortality rates, right?

Ellen Meara:

Well, yes, that's what we think. In the paper, we hypothesize that diverging midlife mortality and its tightening relationship between mortality and income reflect long-run effects of these behaviors and policies related to health capital. The data really suggests that policies and health investments in high-income states have evolved over time with long-run benefits to health and midlife mortality. And I would note, in contrast to lots of the literature that really focused on things like deaths of despair and saying kind of, "well, this must relate to economic outcomes," a lot of that literature is really focused on the short run. They're focused on things like business cycle changes and unemployment rates, and they didn't find much relationship between those deaths and short-term changes in business cycles. And I think one of the things that I hope people will take away in this paper, that what we're talking about are things that evolved slowly over decades. These did not happen in the span of a business cycle.

Michael Klein:

Well, I guess it takes a while to die if the source of death is cirrhosis of the liver or addiction to drugs, right? So you wouldn't expect it to be linked very closely to these more high-frequency events like business cycles.

Ellen Meara:

That's exactly right.

Michael Klein:

But then there is an erosion over time if the infrastructure is not there to provide people with health.

Ellen Meara:

Exactly.

Michael Klein:

So one of the striking things to me in your article was the way in which the correlation between state-level and mortality and state-level income changes over time. You found that there was pretty much a negligible relationship between the two in 1968, but then there was a strong relationship in 2019. And by then, lower mortality was strongly associated with higher state income. What do you think happened to cause this change over these decades?

Ellen Meara:

Thanks, Michael. We really want to stress that it isn't income per se that's driving these changes. If it was income, we would've expected to see the change in income associated with the change in mortality, but that's not what we found. Instead, what we saw was a lining up of mortality according to a state's income in the 1990s and after 2000. So income is correlated with these place effects. What we think, instead of income driving this, is that in the mid-20th century, social structures in low-income states actually may have provided safeguards against bad health outcomes, such as those brought on by a higher propensity to smoke or use alcohol.

Michael Klein:

What are some of those social structures?

Ellen Meara:

Well, for example, they can just be norms in an area. So for example, there's some research that shows that African Americans migrating from the Deep South during the Great Migration experienced higher levels of mortality than those who stayed home. So the beneficial health effects of economic and social improvement were apparently swamped by other forces like health behaviors, smoking, drinking, other things more common in Northern cities.

Michael Klein:

So there's a famous work by Robert Putnam, 'Bowling Alone,' about the sort of breakdown of social structures. And I guess what you're saying is that there were health consequences of this as well because of this breakdown of social structures. Is that accurate?

Ellen Meara:

I'd say at this point it's a hypothesis, but that absolutely seems plausible, that as these social structures change, so do the health effects that are related to them.

Michael Klein:

Well, we've talked a bit about the so-called deaths of despair that were identified by Angus Deaton and Anne Case. Is this a possible source of differences across states? Do they happen more in lower-income states? Is that something that's going on or does that just fold in with all of the place effects that you've been identifying?

Ellen Meara:

Yeah. So this is naturally a question that we had as we entered this work. There's been so much attention to deaths of despair, and they're particularly important for this age group we're focused on, those 25 to 64. But even among that group, deaths of despair are about 16% of deaths. And so what we're saying is that other causes actually are a bigger factor.

Ellen Meara:

Now, what we showed in the paper is that different causes of death were becoming more correlated with income over time. So that is, states with higher income were having relatively lower rates of mortality. And that was true for the leading causes of death: cancer, cardiovascular disease, lung disease, all these other things. For deaths of despair, that pattern was true until about 2008, and then it actually reversed. So it's just not lining up with income the same way that these other causes of death are. So to answer your question more briefly, deaths of despair doesn't explain what we're seeing today across states.

Michael Klein:

So they're there, but it's not big enough, right?

Ellen Meara:

That's right.

Michael Klein:

My first job out of college actually was in a health economics consulting firm. And I remember being struck by all the analyses I saw included smoking as a determinant of health outcomes for every kind of disease, not just lung diseases. In your article, you call smoking a [inaudible] measure of midlife mortality. Can you explain what you mean by that?

Ellen Meara:

Sure. We just mean that the extent of smoking in a state reflects a range of public health measures and also behaviors and culture in a state. This is why when we analyze how health is affected by smoking, we find really big effects. In fact, it turns out if you estimate mortality as a function of smoking at different points in time, that coefficient on smoking, that effect of smoking on mortality, increases over time. Now we don't think the biology of smoking has changed over time. Instead, we think that smoking is associated with other behaviors and policies that may not be included in the analysis. So the smoking variable really stands in for those.

Michael Klein:

So when you have a cigarette, you also have a scotch and maybe a hamburger, and you do other unhealthy things, perhaps.

Ellen Meara:

Perhaps, but I wouldn't assume it's all behavior-based. It may be that people who are smoking in 2021 when smoking rates have dropped precipitously, they have a lot of things in their lives that are actually going against having good health. They may live in areas of high crime or more pollution, or they have stressful jobs. They have jobs where they work hard, physical labor, and they're literally being sort of broken down by work over time. So there's a lot of things that it can stand in for.

Michael Klein:

So you can put a new warning label on cigarette packages that smoking may be correlated with lots of other bad stuff.

Ellen Meara:

Yes. Exactly.

Michael Klein:

So to conclude, Ellen, I'd like to talk about policy. And we touched upon this a little bit earlier, the way in which state-by-state policies differ. Your research article discusses geographic disparities, but they're not immutable. They're associated with places and they're correlated with policies, and policies could improve health outcomes in places where they're currently not very good. Would you say that's a correct reading of your work?

Ellen Meara:

Yes, absolutely. And thank you for reading our paper and interpreting it as we do, on a rather optimistic note in a paper that's about the unhappy topic of death. We conclude that West Virginia and Ohio are not at all doomed to have higher mortality than California and Minnesota. And we're watching this play out in real-time as the COVID pandemic and its many surges demonstrate that policies and behaviors that promote access to life-saving vaccines can moderate the deadly effect of a disease like COVID. So while we do not come away with a single smoking gun policy in the paper, we're really optimistic that there's a lot to learn from changes in mortality over time and across geographic areas. So yes, surprisingly, we come away as optimists from this paper.

Michael Klein:

So you don't have a smoking gun, but you do have smoking.

Ellen Meara:

Yes. A lot of it.

Michael Klein:

Well, Ellen, thanks a lot for speaking with me today about this, an issue that has obvious importance, but is even more highlighted during this era of the pandemic. I appreciate the work that you and your co-authors have done and helped illuminate this very important topic.

Ellen Meara:

Well, thank you so much for giving me the opportunity today and you're very, very welcome.

Michael Klein:

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