

KEYNOTE VIGNETTE

Health inequalities across space: puzzles and questions

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There are marked geographical differences in mortality rates in the United States, even across states, and the dispersion widens as we go to smaller units, such as MSAs and counties. Although we know many facts, a coherent understanding is currently lacking. Consider the relationship between mortality on the one hand, and income and education on the other. According to estimates from the individual, non-aggregated data, for example from the *National Longitudinal Mortality Study*, both income and education are strongly and separately protective¹, and there are many reasonably satisfactory theoretical accounts of why this should be so. At constant level of income, education is associated with higher status and less stress, with better health-related behaviors, and helps people deal take better advantage of the healthcare system. At a constant level of education, income provides some of the same status-related benefits as does education, as well as providing a direct material advantage. If so, and if we average over the inhabitants of an MSA, for example, then average mortality should be lower in MSAs with higher average income and higher average levels of education. But that turns out not to be true: although MSAs with higher levels of education have lower mortality rates, average income is not protective conditional on education, and sometimes even appears to be hazardous, a result that echoes the finding that mortality moves cyclically with the business cycle, higher in booms and lower in recessions². In much of the

¹Elo, I and Preston, SH,1996 “Educational differences in mortality, 1979–85” *Social Science and Medicine*, 42(1), 47–57.

²Ruhm, C, 2000, “Are recessions good for your health?” *Quarterly Journal of Economics*, 115,(2), May, 617–50.

epidemiological literature, where socioeconomic status is treated as a primitive, equally well represented by income or education (or other markers), these questions are not asked, indeed they do not arise. Yet if we are to design policies to reduce health inequalities, a policies that operates through incomes—income taxes, Earned Income Tax Credits, minimum wages—would be quite different from a policy that works through education—improving schools in inner cities, school vouchers, testing, and the rest.

There are also puzzles about the role of race in spatial differences in mortality. People die younger in cities and states that have a higher fraction of African Americans in their populations, not only because blacks die younger than whites, but because *both* blacks and whites die younger in places where the population is more heavily black. Because white incomes are positively, and black income negatively, correlated with the fraction black, income inequality, especially its interracial component, is higher where the population is more heavily black. This pattern accounts for earlier findings of a spatial link between inequality and mortality because inequality has no effect once racial composition is controlled for³. But we are left with the puzzle of why the fraction black should increase the risk of dying. Perhaps race relations in America are so poisoned, and racism so rampant, that living together compromises the health, not only of those discriminated against, but also of those who do the discrimination. Perhaps there are third factors that are correlated with race and with mortality, but extensive examination of likely candidates does little to account for the effect. One promising line of enquiry is into differences in medical treatment. African Americans appear to receive inferior healthcare to whites⁴, and much of the

³Deaton, A and Lubotsky, D., 2002, “Mortality inequality, and race in American cities and states,” *Social Science and Medicine*, in press.

⁴Institute of Medicine, 2002, *Unequal Treatment, Confronting racial and ethnic disparities in health care*, Smedley, BD, Stith, AY, and Nelson AR, eds., National Academies Press.

difference is related to the fact that healthcare facilities are of lower quality where blacks live⁵. Over the country as a whole, within a given hospital, differences in treatment are much less marked. It also turns out that the sharpest effects of race on mortality are on mortality from heart disease⁶, an area where the quality of hospitals is enormously variable, and where recent technical progress has created a presumption that the quality of treatment exerts a substantial influence on the probability of surviving a heart attack. So one possible story is that hospitals in heavily black areas are less well-equipped to deal with heart attacks than are hospitals elsewhere, so that anyone, black or white, who has a heart attack near such a hospital has a reduced chance of survival. At this stage, such an explanation is little more than a hypothesis.

⁵Skinner, J., Staiger, D., Chandra, A., Lee, J., and McClellan, M, 2002, "Racial differences in hospital quality for the treatment of acute myocardial infarction: evidence from the Medicare population," Department of Economics, Dartmouth College, processed.

⁶Fuchs, VR, McClellan, M, and Skinner, J., 2001, "Area differences in utilization of medical care and mortality among US elderly, Cambridge, MA. National Bureau of Economic Research, Working Paper No 8628.