Commentary: History in the search of policy

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The work of Thomas McKeown has spawned a decades-long controversy about the sources of the long-term reduction in mortality, beginning sometime in the 18th century, that, in his view, was undeniably the impetus for the modern rise of population. On one side of the debate, McKeown argues that a changing economic environment, specifically increases in food production resulting in better nutrition, was the most important factor in the downward shift in mortality levels, while medicine, focused on providing individual immunizations and treatments, had little on impact on the decline.1,2

McKeown’s argument is part of a long tradition linking economic conditions to the growth of population. It incorporates the Malthusian notion that an increase in food supplies increased the population dramatically through lowered mortality levels while birth rates remained high. However, implicit in McKeown’s model is the necessity of a decline in fertility to avoid a Malthusian trap, a growth in population outstripping the growth of food supplies and producing a rise in mortality to old higher levels. Although essential to his argument, birth control and the declining birth rates are background to the falling mortality rates; McKeown offers little in the way of explanation for the widespread adoption of deliberate fertility limitation. One can only assume that, like mortality rates, birth rates were affected by economic growth and the impinging of economic realities on family behaviour.1

McKeown’s work has become canonical—although controversial—among scholars examining the history of mortality. No self-respecting scholar would attempt an explanation of the mortality transition without at least a passing reference to McKeown, though not all agree with his conclusions. The opposing view links improvements in life expectancy to retrospectively rational increases in knowledge and accompanying changes in activities to lower mortality levels both through specific medical intervention and public health programs. The debate is being carried on largely within and between two groups of scholars: historical demographers and economic historians, both of which focus not on the earliest period of mortality decline in the 18th century when little data exist but on the second half of the 19th century when mortality rates dropped precipitously and the registration of deaths was relatively more advanced in many parts of the world.

In the article reprinted here, McKeown outlines the ‘historical methods and data’ that underlie his analysis of the mortality transition in England and Wales. The decline in mortality rates that had certainly begun by the middle of the 18th century in England and Wales was a break from prior demographic conditions and led to unprecedented increases in the population. However the data needed to examine the sources of the mortality change are not available until cause of death is recorded in 1838. Therefore, McKeown draws conclusions from 19th-century data and extrapolates backward to understand the 18th century. If, as he concludes, nutritional changes were the leading source of the mortality decline and medicine had little effect on mortality during the 19th century, then surely medicine could not have been more important and improvements in nutrition less important in the 18th century.3

McKeown treats the fall in cause-specific death rates from a number of infectious diseases as the proximate determinants of the overall mortality decline and links each cause of death to one of four potential broad underlying sources of its decline—improved diet as a result of rises in the standard of living, hygienic changes as reflected in improvements in water supplies and sewage disposal, a favourable change in organisms causing disease and/or in the relationship between the host and the pathogen, and improvement in the specific treatment and prevention of diseases in individuals. The list is in order of each factor’s contribution to decline in mortality in England and Wales during the second half of the 19th century. Specific prevention and treatment of disease in the individual made a very small contribution to the decline in the death rate through the effects of vaccination on the deaths from smallpox. The weight given to improved nutrition in McKeown’s analysis rests on his assertion, based on the elimination of other influences, that this single variable explains the decline in the tuberculosis death rate, which accounts for almost half the change in overall mortality.2 Uncertainties about the history of tuberculosis, however, have made the disease’s history a Rorschach test for scholars, who have presented plausible but often conflicting narratives regarding both the timing and causes of its decline.4,5 Researchers focusing on different time periods and locations have attributed the decline in tuberculosis deaths variously to rising standards of living,6 lower levels of early childhood morbidity,7 reductions in the size of susceptible populations,8 public health interventions,4,9 medical advances in its treatment and prevention,9,10 and the decline of other diseases that left their survivors more susceptible to tuberculosis.11 While McKeown’s explanation is parsimonious, economic historians and historical demographers are far from accepting it on the basis of his data and methods.

The debate continues also because, in statistical terms, the model is over-determined, with explicatory variables that move together and point in the same direction with regard to mortality levels. These independent variables may in fact have been causally related to each other, if, for example, rises in the standard of living increased the revenues available for large municipal sanitation projects. They may also have interacted with each other to reduce the levels of mortality. For example, improvements in sanitation and medical practices might well have had different effects in a well-nourished population than in one with poor nutrition. Disentangling these potential sources of mortality decline, ordering them in importance and indeed, a la McKeown, attributing proportions of the mortality decline to each are tasks fraught with problems.
McKeown’s contribution lies largely in his calling attention to the relevance of historical research to health care systems and policy today. He was an advocate for social medicine, and believed that his historical argument was—and is—relevant to current health policy because a misreading of the past has led to an emphasis in medicine today on the body as a machine whose freedom from disease depends on ‘internal intervention’ rather than on the effects of environment, broadly conceived, as the source of disease. The appropriate remedies would thus be individual rather than communal, focused on treatment rather than prevention, found in medical science rather than in social science, reductionist rather than holistic. Couching his argument for social medicine in numbers and graphs makes him a plausible critic of the medical system for economic historians, demographers, and epidemiologists for whom statistics is the language of choice. Their minor critiques of his numbers and methods make little difference to his more general argument. McKeown is an advocate for a different kind of medicine, one that pays more attention to the actual efficacy of treatments and one imbued with a more humane approach to clinical practice. But most importantly, he wants medical systems that are focused on eliminating the underlying environmental sources of disease, revealed by examining the trends and variations in disease patterns. Whether we are convinced by his methods and conclusions or not, it is hard to fault McKeown’s notion that many of our current medical problems will not be solved by clinically treating one patient at a time.

References

Commentary: The pitfalls of policy history.
Writing the past to change the present

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Dr Thomas McKeown was probably the most influential and most controversial health historian of his generation, at least in the English-speaking world.

His fame was the result of a radical simplification of health history that can be summarized as follows. For most of human history mortality was high and life expectancy low (between 20 and 30 years at birth) because most people were too poor, and therefore too poorly nourished, to resist the relentless onslaughts of disease, particularly infectious disease. In 18th century Western Europe, agricultural development increased the food supply and let ordinary people buy more and better food. Better nutrition increased their resistance to infectious disease, and reduced death rates, all without the assistance of medical care. It took another century (i.e. 1870) before public health and the decline of fertility made a complementary but still minor contribution to the continuing, nutrition-driven decline of mortality. Thus, if the goal of contemporary health policy is to further reduce mortality, society should invest its resources in the reduction of malnutrition, and more broadly, the eradication of poverty, not more and more sophisticated forms of medical care.

As a rule short summaries automatically oversimplify complex interpretations. But in McKeown’s case it was the bold simplicity of his arguments that made them so accessible to experts in different fields, and, as a consequence, so controversial.

For good or ill his interpretation of history profoundly affected research in medical history, mortality history, and economic history, as well as contemporary health policy debates. How a doctor who had no historical training could achieve such influence (most historians do not affect the course...