Commentary: Trends in indigenous inequalities in mortality in New Zealand

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Measuring and monitoring social differences in health is an important component of public health surveillance for at least two reasons. First, social group differences in health tell us something about the potential impacts of structural inequalities in society. Health is a crucial component of overall well-being, and differences in health between important social groups may indicate the degree to which major social institutions structure the resources and opportunities for healthy living. Secondly, continued monitoring of social differences in health provides an opportunity to reconcile temporal trends in health inequalities with aetiological hypotheses regarding the causes of health differences. Whether the social patterning of health reflects social differences in hazardous or protective exposures (including social conditions), health behaviours, proximal risk factors, medical care, or, more likely, some combination of such factors has important implications for designing interventions to address health inequalities.

Building on a strong foundation of previous research on health inequalities in New Zealand, in this issue Tobias and colleagues deliver a particularly good example of monitoring mortality inequalities between Māori and non-Māori populations. They measure inequalities on both the absolute and relative scale, consider the contributions of specific causes of death, and interpret their results in light of potential mechanisms and lag times between potential exposures and mortality. They find that the ethnic gap in mortality declined from the early 1950s until the mid-1980s, reversed course and increased from the mid-1980s to mid-1990s, and subsequently declined again. More importantly, they suggest that the recent patterning of widening and narrowing of inequalities is causally related to changes in socio-economic conditions resulting from the restructuring of New Zealand’s economy.

The analysis of Tobias and colleagues also highlights one of the resulting challenges of monitoring inequalities, which is attempting to understand the causal factors that may drive inequalities to widen or narrow over the time. Given the stark absolute differences in socio-economic conditions between Māori and non-Māori populations, one would be hard-pressed to disagree with their conclusion that the observed pattern of ethnic health inequalities over time are at least partially due to changes in economic circumstances. The tougher question is, of course, just how large this part may be, and whether future interventions aimed at reducing ethnic health differences in New Zealand should focus on attempting to equalize socio-economic conditions rather than addressing, say, more proximal risk factors or access to medical care.

Tobias and colleagues place considerable emphasis on the results of regression analyses of all-cause mortality among working age men, which indicate that the extent of socio-economic mediation (i.e. the percentage reduction in the rate ratio (RR) after adjustment for measures of socio-economic position) of the excess risk among the Māori population increased during the 1990s. It would be interesting to see whether this pattern was similar across specific causes of death, particularly those they suggest should respond quickly to changing economic conditions. A previous study of working-age mortality in the mid-1970s found considerable variation across causes of death in the extent to which social class (measured by occupation) mediated mortality differences between Māori and non-Māori males. They found greater mediation by social class for mental disorders, cerebrovascular diseases and accidents than for coronary heart disease and cancers.

Evaluating time trends in the extent of socio-economic mediation in cause-specific mortality could help to understand the pathways by which changes in socio-economic factors are affecting mortality.

One of Tobias et al.’s arguments for a causal interpretation is that the effect of changes in economic conditions on mortality can occur quite rapidly for certain causes of death, namely cardiovascular diseases and suicide. This has been well demonstrated by temporal trends in Russian mortality in response to drastic economic changes, particularly for the acute effects of alcohol consumption on poisoning deaths and certain subtypes of cardiovascular mortality.
among younger men. It is hard to know whether one could tell a similar story for New Zealand. Based on the supplementary data in Tobias et al.’s statistical annex, it appears that the large increase in the absolute ethnic mortality gap among men between 1986–89 and 1991–94 was being driven primarily by changes in cardiovascular mortality and cancer. One might presume that this contribution comes mainly from older males, hence it would be interesting to know whether this pattern was similar for the subtypes of cardiovascular disease that the authors mention which may be susceptible to rapid economic changes (thrombosis and embolism, etc.). On the other hand the continued increase in the gap between 1991–94 and 1996–99 appears largely driven by changes in suicide mortality in younger men. More detailed studies of the potential mechanisms through which economic restructuring could have affected cardiovascular mortality among older men and suicide among younger men would certainly be interesting.

Perhaps a thornier problem with the causal interpretation in this study is that ‘economic restructuring’ is hard to define as an exposure since it encompasses a great many potential sources of change (tax policy, labour market deregulation, etc.), as noted by the authors. A useful direction for future studies might be to determine the extent to which specific policies or exposures may be linked to mortality fluctuations. Tobias et al. focus primarily on labour market status (i.e. unemployment) as a major mechanism through which economic restructuring could affect mortality, which is interesting because in recent years a number of studies have found that economic downturns lead to reduced, rather than increased, overall mortality (with suicide mortality being a notable exception). This has been demonstrated for the USA, Germany, Spain, and a panel of OECD countries (including New Zealand), though other countries have shown more mixed effects. In some ways the results of Tobias et al. appear consistent with this research. In their figure 1, non-Māori life expectancy appears to increase relatively more quickly during the period coinciding with economic reforms, despite increases in poverty and unemployment. However, the opposing trend for the Māori population raises an interesting question for the larger body of research on macro-economic conditions and health, and that is whether the overall and cause-specific mortality reductions seen during economic downturns are similar for population groups that may be affected differentially by economic changes. To date, few of these studies have investigated the effects on population subgroups, and the evidence is mixed. The study by Tobias et al. at least suggests the possibility that overall decreases in mortality that may occur during periods of economic downturn could mask important countervailing effects on disadvantaged subpopulations. This is a topic that should receive additional attention in future studies.

**Conflict of interest:** None declared.

### References