

offer ways to build a social movement for change among sometimes conflicting and competing class, gender, and ethnic needs.

We believe that country experiences of health-system reform have great global relevance as policymakers struggle to adapt to profound development, demographic, and disease transitions. The purpose of this partnership between the Mexican Ministry of Health and *The Lancet* is to document some of these experiences, to distil more widely applicable lessons, and to propose interventions that could protect and advance the health of vulnerable peoples worldwide.

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## The epidemiology of colonialism

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Epidemiology has famously used studies of migrants, such as those of Japanese people in Hawaii and mainland USA<sup>1</sup> or of Italians in Australia,<sup>2</sup> to uncover potentially modifiable factors in the cause of major non-communicable diseases. However, exploration of the results of colonialism has been far slower. In Australia, for example, its indigenous peoples as citizens were not acknowledged until a national referendum in 1967.<sup>3</sup> Part of the explanation might lie in a wider neglect, and the difficulties faced by a young science in working with routinely compiled data that were systematically blind to individuals' ethnic status. More recently, indigenous militancy, born in part from long experience of having cultures and even individuals dismembered in the name of research,<sup>4</sup> has added a disincentive to engagement by otherwise sympathetic investigators in the public-health camp. As a discipline, we not only have to deal with our own shame, in the shape of an unenviable record of "helicopter epidemiology"—fly into a remote location containing "interesting individuals", collect descriptive data and biological specimens, fly out, process, and publish the information elsewhere—but we also find ourselves pinioned between distrust that easily boils over into charges of paternalism, and a continuing pattern of frequently insensitive and exploitative science.

It is refreshing, then, to see that the New Zealanders, among others, have grasped the thorn and are now

systematically examining their national data for epidemiological echoes of their colonial past. And, judging from the study by Tony Blakely and colleagues<sup>5</sup> in today's *Lancet*, it is better still that this investigation seeks to go beyond simple description of ethnic differences to search for modifiable factors that might hold the keys to closing persistent and embarrassing gaps in health status and mortality. Although holding a candle to these differences between the original and colonising populations can be uncomfortable, at the very least, it puts a nation on notice. Furthermore, because data trump opinion almost every time, simply quantifying levels and trends is an important contribution to an area of public life that is redolent of prejudice, now not uncommonly mutual (ie, residual prejudice by whites against blacks, and now prejudice by blacks against whites). This greater power of data over opinion or prejudice is the first of several lessons from the study for countries with substantial ethnic minorities, whether arising from acts of colonisation, as in the USA, Canada, Australia, and New Zealand, or as a legacy of offshore former empires, as has happened for the UK and France.

With careful use of well-established epidemiological methods, Blakely and colleagues show that smoking might contribute perhaps 10% of the difference in mortality rates between Māori and Pakeha (Europeans) in

New Zealand, and readily identifiable socioeconomic differences perhaps another third of the gap. The researchers remind us that this leaves almost all of the 8–9-year difference in life expectancy unaccounted for, and they point to issues surrounding access to, and operation of, health and social services as urgent matters for further inquiry.

Blakely and colleagues' study is also remarkable for two other reasons. First, their analyses are based on systematic linkage of census returns and mortality records. For what is likely to be a tiny marginal cost, bringing together these two long-established official collections has established an enormously rich resource covering an entire nation. Epidemiological examination of data from death certificates traces its origins back to John Graunt and his "Bills of mortality" in 17th century London.<sup>6</sup> But national census offices have traditionally been more jealous of their data, citing a perceived risk of undermining popular participation in their surveys (albeit participation mandated by legislation) if the public were to become aware that third parties, no matter what their scientific bona fides, had access to the data. The New Zealanders, apparently, have been able to devise mechanisms that allay the fears of all concerned, and the value of doing so is plain to see, especially as their census includes a question on smoking, the leading preventable cause of premature mortality and avoidable morbidity in developed countries.

This inclusion of the question of smoking in the census leads to the second point. Further to the important findings about levels and trends in mortality in sub-groups defined by sex and ethnic group, Blakely and colleagues' study contains fascinating information about the evolution of the tobacco epidemic<sup>7</sup> in New Zealand, another relic of colonisation. We see, for example, that in both Māori and European men, the proportion who reported never having smoked increased from around 30% in 1981 to close to 40% in 1996. In 1981, ex-smokers already outnumbered smokers in European men in New Zealand, and that trend accelerated sharply over the ensuing 15 years. In Māori men, the proportion of ever-smokers who had quit rose from 36% in 1981 to 47% in 1996, a welcome boost.

In keeping with international experience about smoking, New Zealand women, both indigenous and European, have been slower to stop starting and to start stopping. The proportions of never-smokers were

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Aboriginal performer plays didgeridoo

virtually static over the same period in both groups, although 20% higher, in absolute terms, in European women. That group crossed the threshold of more ex-smokers than current smokers somewhere between 1981 and 1996, whereas the "quit fraction" rose from 29% to 38% in Māori women during the same period. These trends show that comprehensive national tobacco-control strategies reach all sectors of the population,<sup>8</sup> as non-smoking is re-established as the norm.

With there likely being intricate patterns of inter-connection between smoking and other aspects of lifestyle, socioeconomic standing, and use and experience of services, identifying the best point or points for intervention to reduce ethnic and other inequalities in health will be challenging. But until we begin to look, and to look systematically, we cannot hope to initiate change. At the same time, simply describing patterns, even those obscured by stones that society at large would prefer not lifted up, cannot be the end in itself. After all, the second part of the accepted definition of epidemiology says: "and the application of the findings to the control of health problems."<sup>9</sup>

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I declare that I have no conflict of interest.

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## Evolution of hypertensive disease: a revolution in guidelines

High blood pressure is among the most important preventable causes of death worldwide and the treatment of hypertension is a key strategy for primary prevention of cardiovascular disease.<sup>1,2</sup> Thus there will be much interest in the updated recommendations for the drug treatment of hypertension issued by the UK's National Institute for Health and Clinical Excellence (NICE), working in collaboration with the British Hypertension Society (BHS).<sup>3</sup> There are three important developments in this guideline: a re-appraisal of the role of  $\beta$  blockers; the first formal cost-effectiveness analysis to lend support to clinical recommendations for hypertension treatment (an analysis that showed hypertension treatment to be one of the most cost-effective interventions evaluated in health care); and the stratification of the initial selection of drug treatment according to age.

Most focus will be on the bold and appropriate decision to relegate  $\beta$  blockers as a less suitable initial therapy for the routine treatment of hypertension because they are less effective than other drug choices at preventing major cardiovascular events, especially stroke.<sup>3–6</sup>  $\beta$  blockers are also more likely to induce the development of diabetes and have an unfavourable effect on the metabolic profile, especially in combination with diuretics.<sup>7</sup> Thus  $\beta$  blockers were the least cost-effective treatment option for most people with hypertension.<sup>3</sup> Whether this conclusion applies to all  $\beta$  blockers, or only those used in clinical trials of hypertension (mainly atenolol) is unknown, but this point requires proponents of alternative forms of  $\beta$  blockade to formally confirm effectiveness.

An equally important and perhaps more far-reaching decision by the guideline developers was to formally

acknowledge that the evidence base for treating hypertension was mainly focused on older people ( $\geq 55$  years) with established vascular disease. In so doing, the guideline highlighted an alarming absence of data about the best treatment of hypertension in younger people ( $< 55$  years). The guideline recognised that, in older people, lowering blood pressure efficacy is pre-eminent in driving treatment benefits and that in general the two most clinically-effective and cost-effective drug classes for initial lowering of blood pressure, in this age group, are calcium-channel blockers or a thiazide-type diuretic. Because blood pressure in older people is more resistant to therapy as a result of attendant vascular and target organ damage, the need for two or more drugs in most people was acknowledged with the recommendation at step 2 to combine calcium-channel blockers or thiazide-type diuretic with an angiotensin-converting-enzyme inhibitor (or angiotensin-receptor blocker if the angiotensin-converting-enzyme inhibitor is not tolerated). At step 3, the combination of angiotensin-converting-enzyme inhibitor+calcium-channel blockers+thiazide-type diuretic was recommended. These logical drug combinations were presented in a simple algorithm that is pragmatic but not dogmatic, and has the potential to be adopted internationally—there would need to be good reason to do something different.

So what to do about younger people with hypertension? Much has been learned about the “early hypertensive phenotype” in recent years and it is clear that hypertension is not simply a disease of the left arm. Hypertensive injury evolves over decades (figure). The early stages of hypertension are characterised by