7. Conclusion

As the information base for profiling Indigenous health outcomes and proximate causes is progressively expanded, the indications of high absolute and relative morbidity and mortality remain unchanged, as do reported levels of exposure to risk factors that are strongly associated with a variety of chronic, preventable and non-communicable diseases. From a policy perspective, one element of the health complex that lends itself most directly to intervention is the level of expenditure (both public and private) on health and medical services. Previous analysis of the distribution of such expenditure noted that total health spending per capita was higher for Indigenous Australians compared with the rest of the population, although less so than might be expected, given the size of the gap in health outcomes. Because of the relatively low incomes of Indigenous people, this pattern of higher spending was seen as an indication of greater public expenditures on poor people rather than on rich, as notions of equity would suggest is appropriate.

While it has not been possible to distinguish public from private spending in the present study, it has been possible, using 1995 NHS data, to be more discriminating about the relationship between overall expenditure and income status. For the first time, total spending on Indigenous and non-Indigenous people in equivalent income groups is estimated. This reveals that no significant difference exists between total expenditure on Indigenous and non-Indigenous Australians in the respective income quintiles. However, if hospital expenditure is excluded, then Indigenous expenditure is significantly lower for respective income groups. That is, controlling for income, Indigenous expenditure (other than on hospitals) is much lower than for other Australians. Given the lack of any discernible change to the low health status of Indigenous Australians during the 1990s, this supports, and even strengthens, the thrust of the Deeble et al. (1998) argument that an inverse care law applies—to those most in need, the least is given.

Of additional interest is the finding that relatively well-off Indigenous Australians, with presumably adequate access to (personal) resources, do not perceive their health to be any better than do lower-income Indigenous people. The proportion reporting fair to poor health status in the NHS did not vary significantly across income quintiles; just as in the NATSIS, having a long-term condition was found to be independent of income. This pattern contrasts sharply with that observed for the non-Indigenous population, for whom self-reported health status clearly improves with equivalent income. Why should relatively well-off Indigenous people consider their health to be on a par with those who are relatively poor? Perhaps more to the point, why should Indigenous people differ so much from other Australians of equivalent income in their self-reported health status?

One possible factor underlying this is the fact that Indigenous people are significantly less likely to have utilised health services in the two weeks prior to the NHS, even after controlling for income. In other words, they are significantly less likely overall to utilise health services. While cultural factors may impinge on health service utilisation, the extent to which these may contribute to this result remains poorly understood.

The general thrust of social epidemiological research, however, is now focused on the socio-economic standing of individuals and groups within society as the key to understanding health outcomes (Berkman and Kawachi 2000: Marmot and Wilkinson 1999). In this context, and given the trajectory of Indigenous economic development since the 1960s, it is arguable that the present generation of Indigenous people in the upper income quintiles are far more likely than their non-Indigenous counterparts to have been exposed to the trifecta of low birthweight, poor nutrition and childhood disease that can reap such havoc in later life. As Eades (2000) puts it, from a life-course perspective a person's current physiological status can be seen as a marker of their past social position.

This idea that adult mortality and morbidity may be related to foetal and infant life is generally referred to as the Barker hypothesis, or the foetal–infant origins hypothesis (Barker 1994). In particular, it is proposed that diseases such as coronary heart, type 2 diabetes, central obesity and hypertension (all highly prevalent among Indigenous adults) originate through adaptations that the foetus makes to under-nutrition. While the longitudinal data required for testing this hypothesis are generally unavailable for Indigenous Australians, some research on Indigenous health is emerging which appears to lend weight to the hypothesis, although the role played by the range of other risk factors in determining health outcomes remains difficult to disentangle (Hoy et al. 1999).

It is certainly the case that the current generation of Indigenous adults experienced dramatic change in life circumstances over the second half of the twentieth century. Much of what was stressful in this process and likely to have engendered poor health outcomes is detailed in the findings of the *Royal Commission into Aboriginal Deaths in Custody and in the Report of the National Inquiry into the Separation of Aboriginal and Torres Strait Islander Children from their Families* (Commonwealth of Australia 1991; HREOC 1997). Elsewhere, Gray, Trompf and Houston (1991) have examined the health consequences of family dissolution. Such analyses provide the essential context for a life-course perspective on extant Indigenous health profiles, something that survey data capture only poorly at best. As Gray (1992: 113–16) points out, it is astonishing to note how little is known about the social precedents of Indigenous morbidity and mortality. This can only be achieved if survey approaches enable health-determining processes to be located in the context of the place of each individual within his or her family, household and community.

An alternative explanation to the Barker hypothesis is that current income is probably a poor proxy for socio-economic status among Indigenous people, and hence the usual relationship between income, health status and expenditure is unlikely to be strong. The underlying reason why income is a poor proxy for socio-economic status among Indigenous people is that they have been, and continue to be, socially excluded from mainstream society, irrespective of current income (Hunter 2000a, 2000b, 2001). Social exclusion, unlike income poverty, is an intrinsically dynamic concept, descriptive of a condition which develops over time after a prolonged social isolation and deprivation.[20] The ongoing social exclusion and racial discrimination in Australia means that having a high income might not reflect social status, which is intrinsically conditioned by historical factors and other people's perceptions. Such contentions are supported by the renowned Whitehall study of British civil servants, which demonstrated that relative deprivation

(defined in psychosocial terms) and the accumulation of socially patterned exposures over the life course are important explanations of the correlation between income and health status (Marmot & Smith 1997).[21]

While the Barker hypothesis implies a need to concentrate health expenditure on mothers and babies, the social exclusion hypothesis emphasises the need for ongoing support from both the community and governments across the entire life cycle. One possible implication of both of these hypotheses (albeit for different reasons) is that it will take a long time to address the health deficits among Indigenous Australians.

Ultimately, of course, the lack of any association between income and health status may simply reflect poor data quality, both in terms of income and self-assessed health status. The fact that poor-quality data restrict what can be said with confidence about the relationship between health expenditure, income and health status for the Indigenous population has been a consistent theme throughout this report. For example, we are unable to directly estimate the relationship between government health expenditure and income. We are also forced to exclude from the analysis the 20 per cent of the Indigenous population who live in sparsely settled areas of Australia. Most importantly, conventional income measures appear riddled with measurement error, with many Indigenous families moving up and down the distribution depending upon which measure is adopted. Measurement error is itself a major factor working against identifying a systematic relationship between income and health input and outputs; indeed, even if it were possible, it would be folly to believe that any causal relationship could be established, given uncertainty about the accuracy of Indigenous income status. Future research needs to clarify the role of measurement error in Indigenous income, and hence identify the extent to which income status can be usefully applied as an instrument for policy analysis.

As pointed out many times in the past, the collection of more reliable data is an essential prerequisite to improved analysis of equity issues in regard to health expenditure and health outcomes. From the analysis of NHS data it appears that improved reliability will depend on two developments—a larger augmented sample adequate to the task, and a reduction in non-sampling error in sparsely settled areas. While these improvements do not in themselves guarantee the quality of the data, they should increase the power of the analysis to discern whether the differences (and similarities) between Indigenous and other Australians in this paper are real or apparent.