

## Chapter 3: Education as a Determinant of Indigenous Health

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### Introduction

For several decades, it has been universally accepted that the health of population improves with higher education levels, measured in terms of years of formal schooling or adult literacy rates. The most common health indicator used to demonstrate the link is the reduced rate of child mortality, and the effect persists even after controlling for the positive effects that education has on income and employment (Hobcraft 1993). Higher education levels, however, have a much more pronounced effect on child survival and health when accompanied by improved access to primary healthcare services, especially maternal and infant healthcare (Caldwell & Caldwell 1995). It is also well known that Aboriginal peoples and Torres Strait Islanders receive much less formal schooling and have much lower levels of literacy than non-Indigenous people (DEST 2005). Nevertheless, until the Cooperative Research Centre for Aboriginal and Tropical Health (CRCATH) embarked on its Health and Education Research Program in 1997, only one study (Gray 1988) had examined the education–health link hypothesis in relation to Indigenous peoples in Australia.

This paper begins with a brief review of international research, which demonstrates the link between education and health, followed by an account of the quantitative, qualitative and theoretical studies carried out by the CRCATH. We acknowledge at the outset that the interpretation of empirical data on education–health links is highly contested. Sometimes, as we show, the data itself is ambiguous, or incomplete, especially the Australian data. But it is more difficult to arrive at a *shared theoretical understanding* of the two major variables: health and education. This is not as straightforward as simply examining their empirical ‘markers’—such as child survival rates, years of schooling and literacy levels. Why? Because both *health* and *education* are cultural ‘artefacts’ or ‘constructs’, which mean different things to different people at different times. The confusion is magnified by the assumption of both health and education professionals that the paradigms of their own field transfer in a straightforward way to the other. The confusion becomes almost overwhelming when a cross-cultural dimension

is added, because both Indigenous and non-Indigenous peoples have such diverse experiences of education from which to draw an understanding of it.

The second part of this paper is a preliminary report into the progress we have made trying to achieve greater clarity about the meanings of the education–health link, and what action should flow from this in the specific context of Indigenous peoples' health. Our methodology was to undertake a series of semi-structured dialogues between two academically trained researchers—one an educationalist, the other a health professional—and a small number of Indigenous health leaders, including our co-author and project leader.<sup>1</sup> These dialogues helped us to clarify meaning, and also addressed a key finding of the social determinants literature, namely that power and control are at the heart of health inequalities.

The third part of the paper draws together these first two elements—the review of the research literature and the dialogue with the health leaders—to build some illustrative models of the way in which education can be better understood as *both* a determining factor in the reproduction of health inequalities, *and* as an active intervention into overcoming them. In the final section, we suggest some future directions for research and program development.

## The research evidence

### Health transition studies

Two Australian health researchers writing in 1991 summarised what was then known internationally about 'the cultural, social and behavioural determinants of health', which they, and others working with them, called the 'health transition':

*The most firmly established generalization... [is] that parental education, particularly maternal education, has a major impact on the survival of children even when controlled for income and other indices of material well-being... There [is] agreement that any kind of modern schooling reduces mortality levels and that the phenomenon occurs in all parts of the Third World.*

*Furthermore, the change is linear, with a reduction in child mortality of 7–9 per cent for each additional year of maternal education (Caldwell & Caldwell 1991:5).*

Several points must be made, however, before we rush to conclude that poor Indigenous health outcomes can be similarly explained. Firstly, the Caldwell studies were of Third World countries where schooling was generally not provided beyond basic primary or junior secondary level. Secondly, they were not studies of participation by minority cultures in mainstream education systems. Thirdly, most of the health data relates to infant and child survival, which while it is important, is not the main contributor to poor Indigenous health status that it once was. Fourthly, the main aim of this work was to find out how Third World countries might move more quickly through the 'transition' from high to low child mortality, in situations where resources were limited. In other words, they were addressing health inequalities on a global scale, between countries more than within countries.

Finally, the 'health transition' researchers were less clear and less unanimous when it came to explaining *why* education, measured either as years of formal schooling or as literacy, had the health enhancing effect it did. In the absence of such explanations, education can appear as a magic bullet, or a black box. We administer it, or put people into it, and they, or more usually their children, have healthier lives. But what are the pathways which explain this effect? Caldwell and his colleagues made many attempts to develop theoretical frameworks capable of some explanatory power (Caldwell 1994), but the work of testing these produced no clear conclusions.

Some things were, however, clarified. Firstly, the positive health effects of education are most often associated with a wider social movement or struggle for increased social and economic equality, especially movements that reinforce women's autonomy. The countries where this was said to have occurred include Sri Lanka, Costa Rica, Cuba and China, and the State of Kerala in India. One of the most striking studies, for example, examined the long-term effects of the 1980–1985 Sandinista popular education and literacy program in Nicaragua (Sandiford *et al.* 1995). This study is important, because it shows a mass adult literacy program achieving a similar health effect to several years of schooling. After controlling for other socio-economic factors, it found that

<sup>1</sup> The research team included Stephanie Bell, Donna Ah Chee, Clive Rosewarne, Ben Bartlett and Bob Boughton. Additional input was obtained from Pat Anderson and John Liddle.

the children of women who had participated in the program had significantly lower mortality and better health outcomes (measured by nutritional status), compared with the children of those who had not.

Secondly, the effects of education are more pronounced when associated with improved access to primary healthcare services, especially for women and infants. This works in two ways. Improved schooling and literacy works better to improve health when there is more primary healthcare; but improved access to primary healthcare was found to have less of an impact on maternal and child health where there was not a corresponding improvement in education, especially for young women (Cleland 1990).

Caldwell's third and most controversial claim follows on from this finding. He argues that the health effects of education are derived from the fact that it is a proxy measure for the adoption of more scientific and more 'modern' attitudes and practices, including an increased respect for modern medicine and public health, and less reliance on traditional explanations of death and disease; but also of changed practices in relation to personal and domestic hygiene and infant care. This led some Australian commentators (e.g. Christie 1998; Lowell, Maypilama & Biritjalaway 2003) to characterise this view as potentially assimilationist, and to associate it with the questionable Third World development paradigm known as the modernisation theory.

Putting this to one side, and without describing any of the rich contextual detail in the hundreds of studies where the link has been found,<sup>2</sup> the obvious health-enhancing effects of education that have been found internationally are, at least, *prima facie* evidence for asking whether such an effect occurs for Indigenous peoples in Australia.

## Social determinants and health transition

The huge international research effort that went into understanding the effects of education within the 'health transition' paradigm occurred quite independently of the more recent 'social determinants' literature (e.g. Marmot & Wilkinson 1999; Evans, Barer & Marmor 1994), which is now focusing Australian health researchers' attention on health inequalities.

For example, education is not one of the ten factors listed in *The Solid Facts* (Wilkinson & Marmot 2003), the World Health Organization publication aimed at popularising this research. The main reason appears to be that the social determinants/health inequalities research was primarily concerned with health in advanced capitalist countries, and not with the Third World. Nevertheless, both research communities were examining the same phenomena—the 'social, cultural and behavioural determinants', as Caldwell (1993) called it. Moreover, at least some social determinants researchers claim that education programs can be designed to counter the effects of health inequalities (Swan 1998).

Some health transition researchers, however, did examine modern Western countries, but they did it historically, going back to the nineteenth and early twentieth century to test the basic hypothesis that better health is associated with better education.<sup>3</sup> Why is this important? Firstly, the empirical data, while its inadequacies are acknowledged, suggest that in the First World the transition to low infant mortality and better population health was not so clearly mediated or influenced by education as it appears to have been in the Third World. Secondly, it serves to remind us that 'transition' is an historical concept describing change over time, and that, therefore, the conditions at a particular time are likely to have a health effect that reverberates through generations. Thirdly, it reminds us that the health of the First, Third and Fourth worlds are not independent of each other. The improved health of Western populations in the late nineteenth and early twentieth century was largely achieved by improvements in medical care, public health, housing and nutrition, which were financed in part by the wealth that these countries accumulated from colonisation. The health of populations has a history, and history itself is a determinant of health, both good and bad. As one US social epidemiologist puts it, history leaves its tracks in our bodies (Krieger 1999). Australians—who today enjoy the benefits of one, two and perhaps more generations of better healthcare *and* education—need to remember that one price that was paid for this achievement included the erosion of Aboriginal societies' pre-existing education and health 'systems' and practices, which were integrally bound up with land, its ownership, custodianship and utilisation for economic and cultural purposes.

<sup>2</sup> Readers are referred to the journal, *Health Transition Review*, in which much of this work was published, which is available on the archived pages of the National Centre for Epidemiology and Population Health website. See Boughton (2000) for a more detailed exploration of the relevance of this work to Indigenous health research.

<sup>3</sup> See the Forum pages of *Health Transition Review*, vol. 1, no. 2, 1991, pp. 221–43.

## The wider benefits of learning

In recent years, a new strand of education–health links research has appeared, emanating from the work of the Centre for the Wider Benefits of Learning at the University of London's Institute of Education.<sup>4</sup> This work was originally stimulated by United Kingdom studies of ageing populations, which showed far less subjective health problems and much greater emotional and social wellbeing among people who continued with or returned to education in their mature years (Hammond 2002). It has now grown into a major research program comparing different countries across Europe in terms of their education system outcomes and their population health indicators. In-country studies are pursuing similar comparisons between different regions, connecting with world-wide interest in social capital and social cohesion. These studies are asking: what role are education systems playing in the reproduction of social capital, that controversial attribute of communities, regions and even whole countries which is said to be protective of individual health and wellbeing? This is itself a huge field, not possible or usefully summarised in a paper as brief as this. Two points, however, can be made. Once again, and in a totally different context and research paradigm, education—this time re-configured as learning, as in 'lifelong learning'—has been found to be intimately implicated in health and health development, not just at an individual level but also at a population or collective level. The second point is more salutary. Inter-country comparisons suggest that national education systems *which produce highly unequal outcomes* play a role in worsening, not reducing, health inequalities. Education, in other words, works only for the people it works for. We return to this point below when we look at the Australian data.

### Indigenous health transition: a question of governance?

We discovered only one international study—Bjerregaard and Kue Young (1998)—that addresses the 'health transition' in Indigenous populations. In it, the authors examined the social determinants of changes in health status over time among Inuit people living in three different circumpolar regions: Greenland,

Canada and the old Soviet Union. After exhaustively describing aspects of physical and emotional health status and social history, which mirror many things familiar to people working in Indigenous health in Australia, they conclude:

***The improvement of health ultimately requires moving out of the health sector altogether...** Health systems need to move 'upstream', from individual based treatment (downstream), through primary prevention and screening (midstream), towards a social policy approach. Upstream interventions include efforts to change government policies, organizational practices and provider behaviours which affect the entire population and its social norms and macroeconomic structure... Thus, it is not so much fine-tuning public health policy, but developing a healthy public policy, which will have the most impact on health. The achievement of **a fair degree of self-determination, which is furthest along in Greenland followed by Nunavut**, will provide the preconditions for the effective implementation of more limited, disease specific interventions (Bjerregaard & Kue Young 1998:237, our emphasis).*

This is important, because it draws attention to the social policy dimension, whereas a lot of the work on education has focused, at a more micro-level, on schooling itself (DEST 2000). It does, however, echo the argument in Caldwell and Caldwell (1995) about the wider social change context of the health transition. Bjerregaard and Kue Young (1998) suggest that health benefits require change at an institutional or system level in the relationship between Indigenous and settler populations. This clearly speaks to the literature on regional agreements and treaties, and takes the education debate to quite a different level from simply trying to make schools more 'Aboriginal-friendly'. In Canada and in parts of the United States, education agreements are now becoming a component of regional negotiations.<sup>5</sup>

### Educational inequality

We turn now to the Australian data. Australian health professionals today are well aware of the indicators of Indigenous health inequality, but may be less familiar with the corresponding measures of educational inequality. These are canvassed annually by the Australian Parliament in the National Report on Indigenous Education, which is compiled

<sup>4</sup> An account of this work and some publications are available at [www.learningbenefits.net](http://www.learningbenefits.net).

<sup>5</sup> A guide to websites where descriptions of some of these can be found is in the report by the CAAC & Boughton (2001).

from exhaustive data collections by the Australian Bureau of Statistics, the Department of Education, Training and Youth Affairs and the National Centre for Vocational Education Research (DEST 2005; Saunders *et al.* 2003; Christie 1998). The data is assembled according to the four main education sectors: pre-school education; school education—broken down into primary, junior secondary and senior secondary; vocational education and training (VET); and higher education.<sup>6</sup> These reports show that educational participation by Indigenous students is increasing in every sector, but in all, apart from in the vocational area, it still remains well below the participation levels of non-Indigenous people. The inequalities are much more marked in junior and senior secondary schooling than in pre-school and primary schooling, and they are extreme in the higher education sector. There are also significant regional differences. For example, junior and senior secondary school retention rates—which measure the proportion of students entering secondary school who progress to years 10, 11 and 12—are much lower in rural and remote areas than in urban areas (Schwab 1999). On the other hand, participation levels in primary schooling, despite being some percentage points lower than non-Indigenous rates, are relatively high by comparison with the rates overseas where the majority of the previously cited education–health links research has been done.

Existing national and State-based policy settings in Indigenous education are not seen by most commentators to be a major problem. In each sector—higher education, VET, school education, and pre-school education—substantial policy development work has occurred over the past three decades. In policy terms, there is no lack of commitment to improving educational outcomes at every level, rather, the problems exist at the level of implementation (Boughton *et al.* 2003; Robinson & Bamblett 1998; Schwab 1995). This is evidenced by the adoption by all governments of the National Indigenous Education Policy in 1989, and the re-affirmation of this policy priority by the Ministerial Council on Education, Employment, Training and Youth Affairs in May 2005 (MCEETYA 2006).

One aspect to this is that education is every bit as complex a bureaucratic field as health, with States and the Commonwealth having overlapping responsibilities. But unlike the Indigenous health sector, Indigenous education has no

nationally coordinated effective joint planning mechanisms with independent Indigenous input. This undoubtedly relates to the fact that in education, there is nothing like the level of community-controlled provision that there is in health, and so there is no corresponding Indigenous leadership with an organisational base that has a degree of autonomy from the public or private systems. Most Indigenous education leaders work inside mainstream systems, and the single national organisation based on community-controlled providers—the Federation of Independent Aboriginal Education Providers—only operates in the adult and vocational education and training sector. In higher education, there is a national organisation that brings together Indigenous units on campuses around Australia—the National Indigenous Higher Education Association—but while some of these units now have faculty status, they remain subject to their parent institution. Most State education systems have historically had advisory bodies, the Aboriginal Education Consultative Groups (AECGs), which have tended to focus on schools. The vocational system had a national advisory body, the Australian Indigenous Training Advisory Council (AITAC), but it was abolished in June 2005. Similarly, in the 1970s and 1980s there was a national body, the National Aboriginal Education Council, but it no longer exists, and a more recent attempt by the AECGs to federate in the 1990s was relatively short-lived. The Aboriginal and Torres Strait Islander Commission (ATSIC) / Aboriginal and Torres Strait Islander Services (ATSIS)—note these are closely related agencies—had an education portfolio allocated to a commissioner, but almost no program responsibility or authority, and little experience and expertise. The lack of any autonomous, institutionalised Indigenous power-base within the education sector overall is considered by many to be a major barrier to the effective implementation of national policy, especially to its number one objective, that of increasing the participation by Indigenous people in educational decision making. In recent years, the Commonwealth has resisted attempts to form such a body, preferring to work with consultative agencies with members appointed by government. The most recent example of this policy approach is the National Indigenous Council, appointed after the demise of ATSIC in 2005.

<sup>6</sup> Note that this data is confined to formal education. There is much less systematic reporting at a national level on adult and community education (ACE) programs which are non-formal and non-accredited.

## Recent Australian research on education–health links

Until the CRCATH began its work in 1997, there had been no systematic attempt to investigate links between education and health among Indigenous people. Gray's exploratory study using the 1986 census data found a clear relationship between the level of education of Indigenous women and the survival of their children, but interpretation was confounded by an apparent tendency among better educated women to report to the census more accurately. Changes after 1986 to census questions prevented the investigation from continuing (Gray 1988).

The CRCATH Health and Education Research Program's more systematic study was reported in a number of monographs and reports. Of these, only two were quantitative studies, comparable in this respect to the health transition research work. The first, by Gray and Boughton (2001), was an analysis of the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS) data, in which the authors set out to examine whether parents with more schooling are also more likely to take 'health-related action' when their children are sick. The expected effect, going on the international literature, would be that more highly educated mothers would take on higher levels of health-related action. The NATSIS data shows that they do, but so do the least educated mothers. After controlling for a large number of possible contributing variables, an unusual and puzzling relationship was found: while those with the most education were more inclined to take action, so too were those with much less education.

The real problems appear to be that people who leave school in the 'middle years' are less likely to act than either their better or worse educated counterparts.

Discussions with Indigenous health and education leaders suggested a number of possible explanations for this anomaly. The most credible hypothesis was that the experience of being unable to succeed in junior high school was actually reducing young people's capacity in adulthood to take action on their own behalf. This tallied with anecdotal evidence provided by community leaders, about the young parents most at risk, but could not be proven one way or the other from the available data. Another possibility was that the least educated people were

actively being sought out by health service professionals because they were seen to be more at risk. The authors recommended that further study be undertaken utilising the methodologies that had been employed in the international literature, including a combination of national surveys, community censuses and more ethnographic investigation.

The second quantitative study by Ewald and Boughton (2002) was done at a community level using child health data obtained from a screening process undertaken as part of a larger study of environmental health in a central Australian community. This was a pilot study aimed at developing a more participatory methodology utilising an existing dataset. Community informants helped identify the 'carer-mothers' of the children whose health conditions had been measured in the screening. These women were surveyed and their school records checked to establish their schooling history. This was then correlated with the health outcomes. The engagement with the community helped the researchers understand how Indigenous teachers and health workers themselves thought about the education–health link. In the end, however, the data revealed no clear link. The only significant predictor of better health in children was the employment status of their carer-mothers, not their education or literacy levels. The unreliability of the education data, both the schools' own records and the self-reporting by participants, made the authors cautious about drawing any strong conclusions. They recommended, therefore, that a purpose-designed study be undertaken in a number of communities, combining quantitative and qualitative data collection techniques.

The remaining studies were qualitative, ethnographic and participatory investigations of perceptions within a number of Northern Territory communities about the nature of the education–health link, and what the CRCATH and its partner organisations should do about it. A study in two Northern Territory communities—one urban, one remote—found that:

*The importance of schooling (Western education) was widely acknowledged by the Yolgnu participants, particularly for its role in preparing people for employment although there is some disillusionment about this connection due to the limited employment opportunities in the community and there are concerns about current levels of educational achievement. **Western education, however, was not recognised as having a positive influence on health** (Lowell, Maypilama & Biritjalaway 2003, our emphasis).*

Malin, likewise, reported that many Aboriginal people expressed little interest in the question of whether 'Western schooling' improved health, and were more concerned with 'the effects of colonisation'. She concluded that the health transition hypothesis, of more schooling leading to better health, could not be applied here, because 'the domination of white Australia in the population and societal structures is also reflected in schools' (Malin 2003). This position echoed views of several other educational researchers who joined the debate, arguing that because schools undermine and challenge traditional knowledge and authority, schooling was potentially a source of individual and community stress and likely to produce worse, not better health outcomes (Christie 1998; Lowell, Maypilama & Biritjalaway 2003).

This 'culturalist' critique is a dominant theme within Indigenous education theory and practice in Australia. It has informed many excellent policy initiatives to increase the value placed on Indigenous languages, cultures and knowledge, for example, 'both ways' schooling and bilingual/bicultural programs. However, the implied contradiction between education (in fact, schooling) and culture is problematic because all societies require educational institutions to reproduce their cultures, and the way they do this favours some cultural practices and devalues others (McDermott & Varenne 1995). To suggest that education can be more or less culturally appropriate obscures the fact that Aboriginal culture depends for its continued existence on social practices, which are themselves educational. As Mick Dodson put it, we cannot assume, in the absence of institutional support, that culture will be reproduced 'somewhere else' so it can 'visit the mainstream institutions on its day off' (Dodson 1997).

## Indigenous health leadership views

Without Indigenous leadership in both the education and the health sector, it has become an article of faith, in theory if not always in practice, that no real long-term strategies can expect to succeed. Increasingly, this view is also being applied to research programs and projects undertaken in these fields. The problem we all face, while we may assert this position in principle, is that the leadership and conduct of research has historically been dominated by highly educated people at the apex of the education system. The new Cooperative Research Centre for Aboriginal Health (CRAH) that developed after the wind up of the CRCATH,

as an institution is itself caught up in this contradiction. It sits at the 'crossroads' of education, health and research. It is not surprising, therefore, that attempts to understand and overcome the difficulties of achieving Indigenous leadership over the research program are a major theme of the CRAH's own research, publication and education programs.

In this project, we initiated a series of dialogues about the education–health link with Indigenous health leaders who have sat on the CRAH Board and taken part in its work. Our objective was to explore the extent to which the research effort was informing, and informed by, these leaders' understanding and practice, including their understanding of education and other social determinants. As a group, we have a long history of working together in Aboriginal community-controlled organisations, in both the health and education sectors. This experience has taught us that change comes from collective action by Aboriginal and non-Aboriginal people working in partnerships that are characterised by solidarity, critical support and an acceptance of Aboriginal leadership. It has also taught us that the Indigenous 'health transition' involves human agency, and that collective action to overcome racism and discrimination in health systems and in education systems is itself a form of education.

The popular United States educator Myles Horton, who was instrumental in the civil rights movement, used to say that 'we only learn from the experiences we learn from' (Horton & Freire 1990). This apparent piece of 'down-home' wisdom echoes the insights of more sophisticated theories in adult education (e.g. Mezirow 1991), which argue that learning results from the incorporation of new experiences and inputs within our pre-existing systems of meaning. These, in turn, come from previous educational experiences and, at a deeper level, from our culture (e.g. education, in other words, is not a process of 'knowledge transfer', from one 'head' to another). This is what another famous popular educator, the Brazilian Paulo Freire (1970), rejected as 'banking education': education that pretends to make 'deposits' into the heads of others. No—education is an active process of engagement.

The 'bottom line', therefore, is that the only understanding of the education–health link, which will ultimately make a difference, is the understanding that the Indigenous health leadership takes out of this research process. Research and education, in this model, are not two separate things. Research is education and the researchers, if they are not Aboriginal health leaders themselves, must also be educators. By the same token, the educators have to be educated, because the Indigenous health leadership has to

be able to apply the research findings and convert them into better informed collective action. This requires research to be a 'two-way' educational process, not a transfer of research knowledge from researchers to consumers.

The Indigenous health leadership operates at several levels. In every community, there are health leaders—people who provide leadership to their families and neighbours and kinfolk. They work as health workers, sit on health boards, teach in schools, go on committees, speak up when representatives from government departments visit, provide counselling and support, and maintain social cohesion. On a daily basis, these people address the social determinants of health—regardless of whether or not they have ever heard of the term. Most of them have little formal education because they are typical of their community, with the vast majority having left school before year 10. They have primary school or junior secondary level literacy and numeracy, and any post-school qualifications they have will be lower level vocational ones. The exceptions only serve to prove the rule. The past failure of the education system to provide education to Indigenous peoples to the same level as to non-Indigenous people ensures this situation will continue for the foreseeable future, even if these failures were to be overcome within the life time of the current generation.

However, there is another level of leadership, usually emanating from the community, but operating at the highest levels of health system service management, policy formulation and political advocacy. Leaders at this level are managing multi-million dollar organisations and programs, contributing to regional, State and national policy and planning forums, and helping to set research agendas. They, too, are daily addressing the social determinants of Indigenous health, and have been doing so long before the concept was mentioned in any research report, policy document or other publication relating to Indigenous health.

Research programs that do not enter into dialogue with both these audiences and do not assist with the education of both leaders and researchers simply reproduce the educational inequality that we have identified as the fundamental problem. This is the contradiction at the heart of any attempt to make education work for empowerment, a challenge that can only be addressed by a research

program built around a different kind of education–research model, one in which Indigenous health leaders are actively engaged in making meaning. So, what meaning have some of the Indigenous health leaders who have participated in the CRCIAH process made of the education–health link and the CRCIAH's efforts to understand it? There was wide agreement among the health leadership who took part in this dialogue that there was an education–health link. This contrasts with other findings reported above, for example, by Lowell, Maypilama and Biritjalaway (2003). Their ideas—collected by the authors during the dialogue—about how this link worked included that education gave people the 'skills & tools to make choices'; and that it '*empowers people*' and teaches them '*how to think better (and) understand things*'. Better educated people, it was thought, are '*more likely to take responsibility for their actions*' and to have a '*consciousness about finding ways of doing things for themselves*'. Education helps people to '*advance themselves or their families... (because you) can't compete in the world without education*'. Education '*promotes the concept of work*' and helps people '*get to know how others live*'. It provides the community and the individual with role models, and it enhances social networks. In health services and the community, the lack of education is seen as a major workforce issue.

The problem was seen as critical because of the rapid growth in the numbers of young people finishing school too early. Young people who dropped out of education were seen as more likely to fall into a culture of violence and despair than those who continued. In many communities, it was said, there was little value placed on education, even by some leaders. There were concerns, too, that young people did not want to go to school and parents were reluctant to force them. This may well have been because parents themselves had negative experiences of education. It was difficult for people to see a value in education when there were few jobs—or only Community Development and Employment Program positions—and being unemployed had become part of the culture. Sometimes 'Aboriginal culture' is used as an excuse for not valuing education, or as a substitute for education, but this was seen as incorrect. In the experience of the people we were speaking to, education does not require people '*to give up law and culture*'.

In these dialogues, a major focus was on the responsibility of the community itself to address the lack of education, especially among young people. This emphasis on the need for Indigenous agency and responsibility is understandable as health leaders have long believed that solutions have to come from Indigenous people themselves. At the same

time, however, the education system was subjected to severe criticism for its failure to implement the policy and programs that the community had argued for. This failure was considered to be something requiring research—why had the responsible departments not implemented their own policies and recommendations of all the reports? It was said that there seemed to be *'little questioning of teaching methods'*, and that the education system itself *'makes Aboriginal people powerless'* and is not giving people the idea that they are learning. There is racism in schools, but this is not the primary reason for not going to school, because *'racism is everywhere'*.

One of the strongest themes to emerge was the role of education in reproducing Aboriginal leadership, not just in health but across all those areas that affected health. This raised the role of the CRCATH itself. There was considerable dissatisfaction with the extent to which the previous CRCATH supported the initiatives of Indigenous health and education leaders and to build that leadership's power to take more control of the research and policy agenda. The CRCATH had *'not understood'* the education–health link, especially its own role in it. It saw its education responsibilities chiefly in terms of scholarships and cadetships, not in the education of the research community or the Indigenous leadership.

However, the CRCATH, it was said, should have *'no role'* in choosing leaders; this *'must be left to the community'* and *'any role they play must be under the control of the Aboriginal leadership'*. Some ways in which the CRCATH might support that leadership include:

- allocating resources to produce well-informed position papers quickly, which could support Aboriginal leaders in the lobbying of politicians and the bureaucracy;
- explaining the health determinants more clearly, so that health administrators and others working in communities can talk with community members and other community organisations about it;
- educating researchers to be 'less sensitive about straight talking';
- organising more inter-disciplinary collaboration to help strategise difficult community problems;
- examining where and why recommended solutions had not been implemented, thereby demonstrating government inaction;

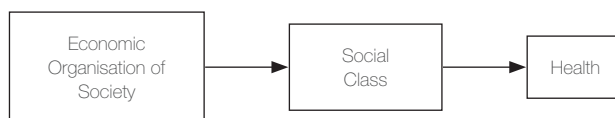
- assisting community organisations to be involved in the social determinants debate on a more equal level;
- helping to promote a round-table discussion on education—what is happening, what is wrong, how to fix it;
- helping to clarify 'where the (education) money goes'; and
- running all-of-community education program pilots that give community leaders ownership of the education process.

We have reproduced these ideas in the form and wording in which they were raised in the dialogues to give some flavour of the discussions. The final section moves beyond these individual suggestions to a more integrated research program.

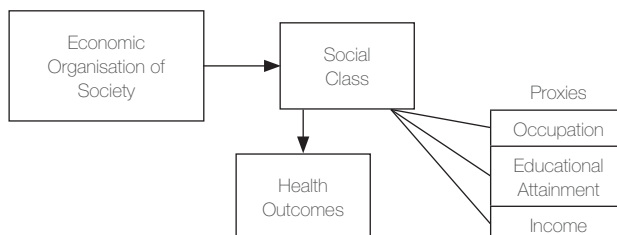
## Towards a model of the education–health relationship

How do we make sense of the education–health link in the context of the more recent work on health determinants? As we saw above, social determinants researchers such as Marmot and Wilkinson (1999) and Evans, Barer and Marmor (1994) paid scant attention to education as a determinant, the factor that the health transition literature saw as central. In this section, we try to bring these two literatures together, while drawing on the Indigenous leadership dialogue reported above.

To begin with, few would question that *social class* is related to health status and that the way societies are organised economically is the major determinant of class structure.

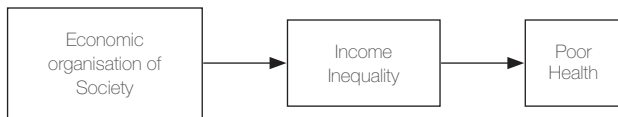


Education has tended to be used in many studies as a proxy for social class, along with income and occupation. This is an implicit acknowledgment that education is a factor in class-determined health inequalities.

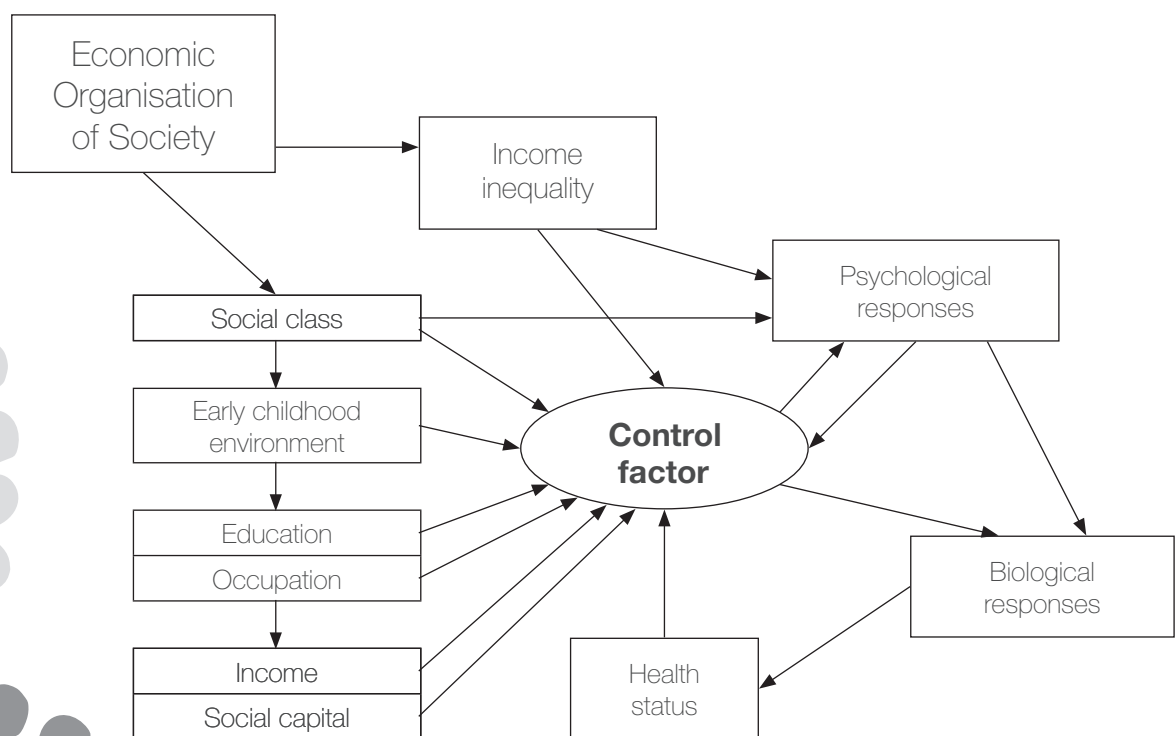


However, the social determinants studies have shown that it is not just the people at the bottom of the social hierarchy who have poor health outcomes. In the Whitehall studies (Marmot *et al.* 1984; 1991), people second from the top had two to three times the mortality of those at the top of the civil service hierarchy. So, while poverty is a factor in its own right, it is not the whole story. There is a gradient of health outcomes from the top to the bottom of the social hierarchy. This study showed that after controlling for all known risk factors—for example, hypertension, cholesterol levels, smoking behaviours—the gradient of health inequality persisted. This appears to be related to what has been called the ‘control factor’, that is, the more control a person has over their work, the better their health outcomes (Marmot *et al.* 1997).

There is also evidence that income inequality (as distinct from income level) is itself a determinant. Where a society has a narrow gap between the richest and the poorest, the health of all is better than in societies where there is a wide gap between the rich and the poor (Wilkinson 1996).



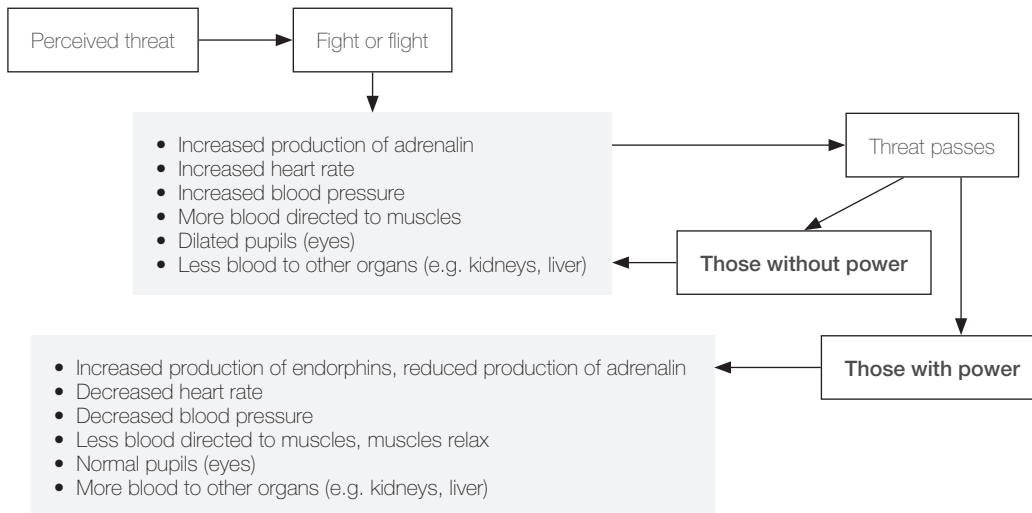
**DIAGRAM 1: Control factor—The missing link?**



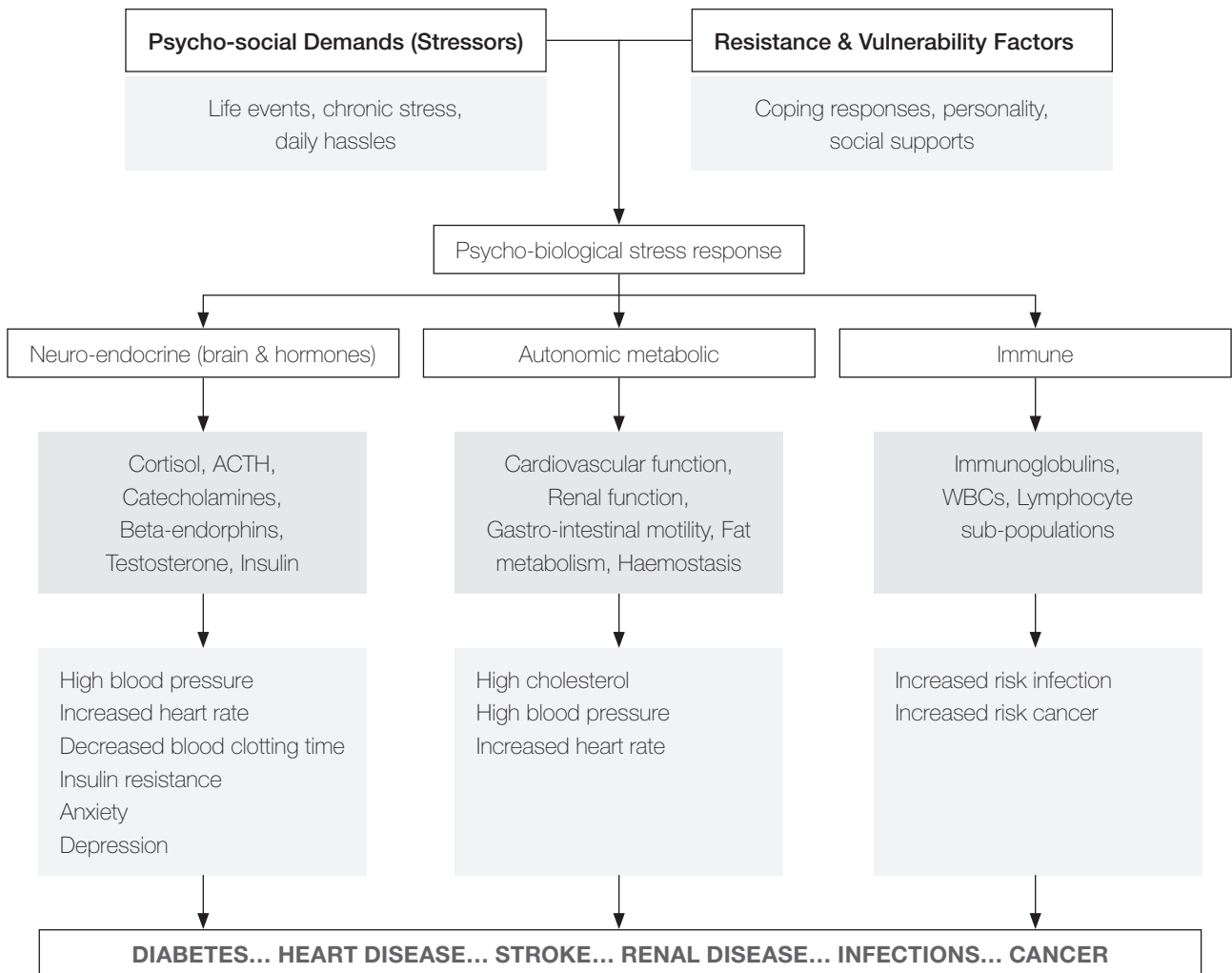
We postulate that the ‘control factor’ is the common link between the social and environmental factors (i.e. external factors) and the biological responses that create either good or poor health. These responses are modified individually by genetic predispositions, although these, too, are products of environmental conditions over time (Evans & Stoddart 1994).

Other factors identified as contributing to poor health include low self-esteem and social isolation. People who sit towards the bottom of the social hierarchy are usually well aware that society views them, in today’s parlance, as ‘losers’, which affects their confidence and self-esteem. In this situation, people experience both objective disadvantage in controlling their lives (low income, poor education, poor environmental living conditions, boring job or no job) and subjective disadvantage (low self-esteem, uncontrolled anger or frustration, low confidence). Health status itself will also impact upon the ‘control factor’, since poor health undermines the ability to take control. Moreover, self-esteem and educational success are closely interrelated, each helping to reproduce the other. All this can be modelled in terms of biological responses that are the pathways to disease, as shown in Diagrams 2 and 3 adapted from Brunner and Marmot (1999).

**DIAGRAM 2: The biology of power**



**DIAGRAM 3: Biological pathways**



## The historical/time dimension

The histories of colonisation and Aboriginal societal responses are an integral part of understanding the changed status of Aboriginal health. In the table below, we have tried to present this schematically, to show a series of transitions from one health–education situation to another. It is important to include this time dimension into the model, because both

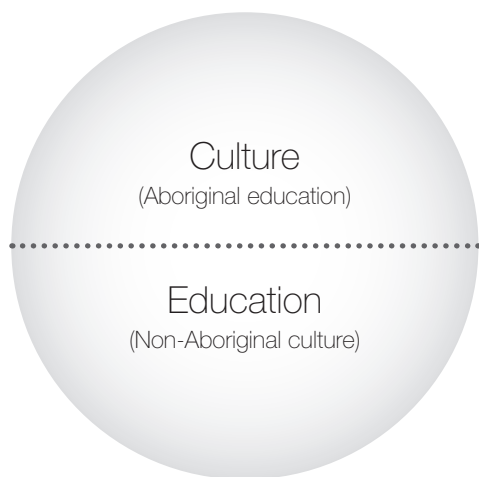
health status and educational experiences, and the interaction between them, have effects that reverberate throughout an individual's life-course and on to subsequent generations. For example, the falling infant mortality rate in the 1970s translates in subsequent decades to an increased demand on the education and health systems; but, at the same time, the high infant mortality rate from previous decades has reduced the number of traditional education and health leaders available to deal with this.

**TABLE 1: History, health and education**

Period	Health	Education
Pre-Colonisation	High infant mortality Otherwise fit and healthy people Some violence	Aboriginal law and culture—Indigenous education system
Early Colonisation	High mortality from infectious disease, violent conflict over land/resources	Aboriginal education persists, but under stress
Forced Settlements	Decline in economic activity—poor nutrition, decline in activity Overcrowding, high infant mortality	Mainstream education challenges Aboriginal system; mainstream system fails to offer effective alternative to traditional system all but destroyed.
Referendum: 1967–1970s	Decline in infant mortality Early stage of chronic disease epidemic	Resurgence of Aboriginal activism, focus on services, rights, education access limited
1980s	Chronic disease epidemic, rising adult mortality, high fertility	Community controlled organisations, education outcomes remain poor for most Resurgence of Aboriginal law and culture
1990s	High young adult mortality, 60 per cent population under 25 years of age, chronic disease in adults	Education effort nationally, improved access, but poor outcomes Resurgence of Aboriginal law and culture
2000s	Major problem of youth alienation, social dislocation	Slowing in improvements, some reversals (e.g. in higher education)

Note that in the above table, we have introduced the idea of an Aboriginal education system maintained through cultural practices to counter the mistaken view that education and traditional culture are two separate things. This view, according to our informants, is itself a barrier to improving educational outcomes. When 'education' is seen as limited to that which is promoted by the dominant non-Aboriginal education system, some young people reject it as becoming 'like whitefellas'. The diagram below tries to illustrate this problem:

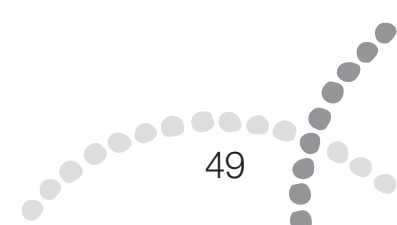
**DIAGRAM 4: Education and culture**



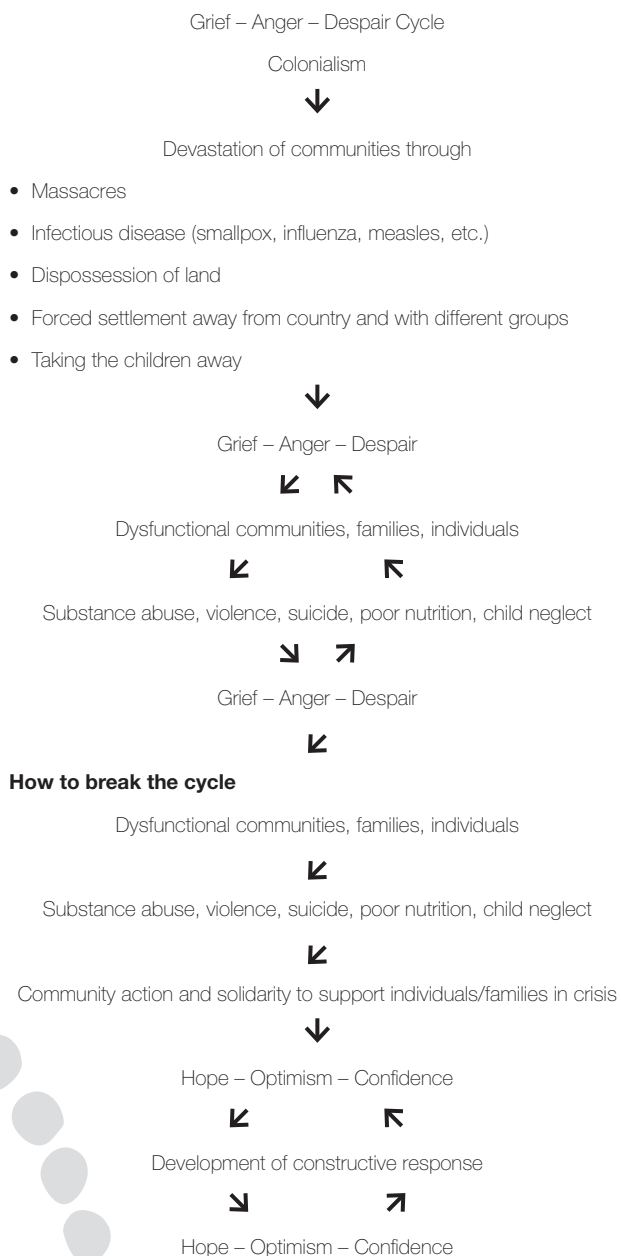
Our view is that education is the means by which culture is replicated. For Aboriginal communities overwhelmed by the dominant settler society, resistance to mainstream education in order to preserve Aboriginal culture may be part of an explanation of poor attendance and lack of commitment by some to schools. For many Aboriginal people, allowing young people to leave their community at twelve or thirteen years of age to go to secondary school means that they will not be around much of the time to participate in Aboriginal ceremonies (shown above as the Aboriginal education system). Further, boys who have been initiated and become men will not go to school and sit with boys who are still boys (i.e. uninitiated), not due to any prohibition, but their choice.

If we accept that education is an important factor in improving health, then these challenges require a strengthened Aboriginal educational leadership at both a system and a local level to ensure that the education system contributes to cultural reproduction in ways that are not only supported by the community, but are also under the control of community leadership. Given the demographic transition that Aboriginal society is now experiencing, which is producing a significant shortfall in the numbers of available adults in proportion to youth, it is unrealistic to expect that an Aboriginal leadership will be able to achieve this alone. Partnerships are required, but ones that are premised on acceptance of Aboriginal leadership. Partnerships may be with others apart from non-Indigenous educationalists.

Finally, a new education strategy must take into account and help communities respond to the main contributors to the current high levels of Aboriginal mortality and morbidity, and the community grief, sorrow and anger that this causes. The following set of diagrams adapted from Bartlett (1999) attempts to illustrate the dynamics in Aboriginal society that link the histories that are so dominant in Aboriginal understandings with the current patterns of Aboriginal morbidity and mortality.



**DIAGRAM 5: The cycle of despair and how it is broken**



When seen from this angle, it is possible to think of education as an *intervention strategy* supporting community action, as well as it being a determinant in its own right. How such an intervention is conceived and implemented may be critical in determining its effectiveness. It must interface clearly with communities' own understanding and their development of constructive responses. The education process should facilitate this.

These models and visual representations have been developed to help illustrate what we have learned about the social determinants of health, in particular education, in ways that facilitate informed discussion with Indigenous leaders working in health service and health development. While they remain a work-in-progress, they have proven to be useful and effective aids in our discussion of the issue of what action—in terms of research and program development—might flow from these understandings.

## Research and development priorities

A major aim of the CRCAH's social determinants research is said to be the development of 'effective interventions in policy, planning and service delivery' (CRCALH 2004). In this last section of the paper, we outline three project ideas that fit within this objective. The first is a study of education resource allocation, the second a pilot study of a 'whole-of-community' education for health development program, and the third a professional development program for senior Indigenous health leaders within the CRCALH to enable them to increase their control over the social determinants research agenda and to support community-level health leaders in their work.

### Educational resource allocation study

The Education and Health Research Program of the CRCALH's previous incarnation, the CRCATH, identified a number of potential projects. Recommendations for action on these were tabled in a report to the CRCALH Board (Boughton 1999). Subsequent to this, more detailed proposals went forward for some other projects but were not adopted, in part because by that time the funding round was coming to an end. One, which was sponsored by the Central Australian Aboriginal Congress (CAAC) and had wide support including from the Commonwealth and Northern Territory Education Departments, was a study of educational resource allocation. The underlying rationale for this study was that there has

**TABLE 2: A simplified model of inequality in educational investment**

Sector		Primary	Jnr 2ndary	Snr 2ndary	Tertiary	Total
Years of education		7	3	2	3	
Per capita exp.		8000	10,000	15,000	20,000	
Indigenous	Participn %	100%	50%	5%	5%	
	Expenditure	56,000	15,000	1500	3000	75,500
Non-Indig.	Participn %	100%	90%	70%	30%	
	Expenditure	56,000	27,000	21,000	18,000	122,000
Per capita shortfall						<b>46,500</b>

been a systematic 'under-investment' in education within Indigenous communities over several decades, because Indigenous people historically have not participated in formal education at anything like the rate of non-Indigenous people. A study by the CAAC suggested that, if the Indigenous community had a high school retention rate equal to the non-Indigenous rate of 60 per cent, its young people would be the beneficiaries of an additional \$45 million in education investment over a five-year period (CAAC & Boughton 2001). The CAAC continues to argue that quantifying that under-investment more rigorously is the first step towards negotiating a different approach to the problem of non-Indigenous participation in education.

More recent work shows that the combined net public expenditure on someone who graduates from medicine (i.e. for thirteen years of schooling plus a medical degree) is more than \$170,000. By comparison, a student who leaves school at year 9 and does no further education has had only around \$75,000 of public money spent on his or her education (Burke & Long 2003). The table below, developed by one of the authors of that study, illustrates the results of applying a simple model to calculate the shortfall in per capita investment, at today's prices, of a mythical average Indigenous person's education level relative to a mythical average non-Indigenous person's education level.

This figure, of course, does not make sense in relation to individuals, but does when multiplied out to a community or population level. An average community would have this shortfall in the level of investment in its education hundreds of times over. Moreover, the table is based on the upper end of education participation by Indigenous people; in rural and remote communities the inequality would be significantly higher. The quantum of this under-investment, we suggest, can be linked directly to 'over-investment' required by

'downstream' services that are forced to 'pick up the pieces', including in the health system, the justice system and the welfare system. More importantly, it translates into much higher costs for the community in terms of the burden of illness, mortality, grief and socio-economic disadvantage.

To date, efforts to overcome educational inequality have revolved around spending more money 'inside' the education system to try and attract more people. It is no less logical to consider moving some of the investment *out of the mainstream education system*, for example, into Aboriginal community-controlled programs more suited to the needs of the 'non-participants' and their communities. The first stage, however, is to get some indication of the relative inequity in educational expenditure between Indigenous and non-Indigenous populations. The proposal to the CRCATH was to do this for the Northern Territory only, but such a study could include other jurisdictions. The value of such a study is that it locates the problem of Indigenous educational disadvantage not with the non-participating individuals and families, but with the system of educational resource allocation that fails to invest in education programs appropriate to its Indigenous citizens' needs.

### Community health development leadership education program

The question was raised above about the relationship between research, education and Indigenous leadership. The existing national Indigenous health leadership grew from a 1970s grassroots primary healthcare movement, which mobilised in its own communities to advocate for improved health services to be developed under community control. It was this experience that taught the health leadership how to interact with the mainstream health system. In the absence of a similar mobilisation, it is unlikely that a new generation of

health leaders will come forward. The project proposed here is to pilot a method of developing local grassroots leadership mobilisation in communities with relatively low levels of literacy and formal education, while simultaneously adapting a methodology utilised by development agencies working in Third World countries. This methodology, known generally as popular education, works with adults to identify both the issues and problems within their communities as well as the local resources they have at their disposal to address them. One of its most successful forms, known as the REFLECT program, combines the insights of Paulo Freire's literacy programs in both Brazil and Guinea-Bissau with the methods of Participatory Rural Appraisal (PRA)<sup>7</sup>. Its success overseas in developing a grassroots leadership, including in primary healthcare, has been widely documented, but as yet it has not been used in an Australian context. We propose that the CRCAH run this program as an experiment in one or more communities, and evaluate the contribution it makes to the emergence of a more effective leadership for health development. If it is as successful as it has proved overseas, it might then be the kind of intervention that the government could take up more systematically.

## National leadership program

The experience of this small project has taught us that one of the major obstacles to addressing the social determinants of health is that the existing Indigenous health leadership, which operates at the higher levels of policy, planning, and service management and development, is itself significantly under-resourced. Participants in the dialogue of this project had initially seen the CRCATH, and later the CRCAH, as the means to overcome this problem, but things have not, in general, turned out that way. The leaders who took part in this dialogue feel they have not as yet gained any real control over the research agenda, nor has the research played any significant role in terms of informing their own practice. We have identified a number of reasons for this, including the pressures that both health service management and

policy development exert: pressures that divert scarce intellectual capacity away from health development towards the immediately pressing needs of service development. The danger is that while leaders are tied up resourcing the development of health services and systems, they will not be able to build their capacity to resource wider health development strategies.

The current CRCAH could help to rectify this imbalance by building into the social determinants of health research program a systematic and structured program of release time and professional development for the Indigenous health service leadership. This should include funding to enable that leadership to employ their own chosen researchers on an as-needs basis to assist them to find out what it is they need to know.

However, health leaders cannot be expected to turn around the education system. One proposal suggested by the Indigenous health leaders who took part in this project is for a national education summit, a dialogue with Indigenous education leaders. Whether this is an appropriate intervention for the CRCAH to sponsor will be a matter of debate. However, given the involvement of a significant number of universities, and of the Australian Institute of Aboriginal and Torres Strait Islander Studies which has its own education research program, it may be worth pursuing.

<sup>7</sup> Participatory rural appraisal (PRA) is a label given to a growing family of participatory approaches and methods that emphasize local knowledge and enable local people to make their own appraisal, analysis, and plans. See <http://www.worldbank.org/wbi/sourcebook/sba104.htm>.

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