What is the Connection Between Aboriginal Education and Aboriginal Health?

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This paper reviews some international research which examines the impact that various indicators of socio-economic status (SES), and especially education levels, appear to have on peoples’ health. In particular, it examines the work on ‘health transitions’, and its relevance to issues in Indigenous health in Australia. It then canvases some theoretical, methodological and ethical issues involved in undertaking similar research in relation to the connections between education levels and health status among Indigenous peoples in Australia. The paper concludes by outlining several options for pursuing research of this type within the CRCATH program.

Introduction

Most people concerned with the appalling state of health in Aboriginal Australia now acknowledge the importance of understanding the underlying social causes, or determinants of this situation (Devitt, Hall, & Tsey, 1999). When the Cooperative Research Centre for Aboriginal and Tropical Health (hereafter the CRCATH) was established in 1997, the preamble to its objectives argued that:

“the poor health of Aboriginal people is due to poverty, to educational and social disadvantage, to alienation, and to a health care system that has largely failed to address the needs of Aboriginal people” (CRCATH Agreement, 1997, p. 10).

Research which aims to improve Aboriginal health needs to increase our understanding of these social factors, and inform the actions taken to address them. The CRCATH’s Indigenous Health and Education Research Program focuses particularly on deepening our understanding of the role that education can play in improving Aboriginal health. In the first stage of this program, two research fellowships were created to review relevant published and unpublished literature, and engage in negotiations with the Aboriginal community and other stakeholders about the strategic direction to be taken in four sub-program areas, namely:

- Indigenous Education and Health
- Health Ethics
- Health Priorities and Communication of Health Information
- Cross-cultural Education for Non-Aboriginal People

This paper relates to the first of these. Its aim is firstly to review the findings of some international research literature on the connection between ill-health and various measures of socio-economic status (SES), particularly education; secondly, to canvass some of the theoretical, methodological and ethical issues involved in applying these international perspectives in Indigenous Australia; and thirdly, to discuss some options for pursuing similar research within the CRCATH program.
Researching Indigenous ‘Disadvantage’: Conceptual Issues

As obvious as Indigenous peoples’ disadvantage is on one level, several conceptual issues need clarifying at the outset. Firstly, ill-health is itself a form of disadvantage, along with poverty, isolation, lack of education, alienation, low-status, disability, and unemployment. All these ‘indices’ of disadvantage tend to cluster together, and are inter-related. People with less education usually have lower incomes, experience more unemployment and underemployment, and more social and physical isolation. In addition they are also more likely to suffer higher rates of physical and mental disability and ill-health, and much more likely to experience prejudice. Some of these factors are embraced by the concept of social class, which the classic studies of social determinants identify as a major predictor of health status (Wilkinson, 1996). Unravelling the relationships among all these different factors, especially the direction of causal effects, is a major theoretical and research problem. For example, if educational disadvantage is associated with ill-health, is this because less educated people become sick more readily, or because regular illness tends to interfere with one’s education? The view that illness interferes with education is a common explanation for the difficulties some Aboriginal children have in the school system, especially the effects of otitis media and hearing loss; but, even in the case of something as obvious as hearing loss, the effects of ill-health on educational attainment is quite complex, and mediated by many other factors (Lowell, 1994; Lowell, Budukulaway, Gurimangu, Maypilama, & Nyomba, 1995).

Secondly, Indigenous peoples are not the only people who experience disadvantage, and analyses which focus solely on comparing Indigenous peoples’ characteristics and experiences with those of non-indigenous populations run the risk of racialising the explanatory frameworks. In other words, peoples’ Aboriginality per se, rather than other factors, such as their class, where they live, their lack of access to schools or the racial prejudices of non-Aboriginal employers, becomes the explanation for their unequal status. Anti-racist education researchers internationally (e.g. Connolly & Troyna, 1998) argue that such frameworks produce a ‘blame the victim’ effect. They can also reinforce existing racial stereotypes, such as that all Aboriginal people are uneducated and/or have poor health. If Aboriginal peoples’ education status is compared with the population as a whole, on average they fare very poorly. But a different picture emerges when Aboriginal educational status is compared with other impoverished unemployed unskilled working class people who don’t speak English as their first language and live in remote localities. Aboriginality may well mediate and intensify the experience of other determinants of disadvantage, but we need to break down the various elements which go to make up the ‘global’ concept of ‘disadvantage’, before trying to explain it.3

Thirdly, it is equally problematic to treat Aboriginality4 as an homogenous category, some ‘essence’ which all aboriginal peoples have, separate from the social and historical processes by which particular groups of peoples in particular places came to identify as Aboriginal. Stephanie Bell, from the Aboriginal Medical Services Alliance of the Northern Territory (AMSANT) points out:
“Although we speak of ‘Aboriginal Australia’, this masks considerable local and regional differences amongst our people. This seems to be very difficult for non-Aboriginal people to grasp, and for much of the period of colonisation, we have been treated as if we were all the same. But all Aboriginal people are not the same. Aboriginal Australia is a network of interconnected Aboriginal nations, with their own languages and ways of life. … Although Aboriginal peoples have certain problems in common, different regions (and different communities within those regions) will have their own priorities and ideas about how to deal with those problems…” (Bell, 1995)

This requires us to ‘deconstruct’ our understanding of Aboriginal educational disadvantage, and acknowledge the enormous differences, in terms of needs and aspirations, and of programs required. For example, compare young Warlpiri women living in Yuendumu who have never had a job with, say, middle aged Ngunawal men living in Canberra who have been retrenched from the public service. Both groups may be educationally disadvantaged, but the nature of that disadvantage, its causes, its health effects and the programs required to overcome them may all be entirely different. Moreover, the social policies required to overcome their disadvantage are not necessarily different from the policies required to solve the problems of non-Aboriginal people who share similar circumstances, even though particular programs may need to be delivered differently. To focus on either group as having an ‘Aboriginal’ problem, rather than a ‘remote area’ problem, or a male or female problem, or a poverty problem or a vocational training problem may confuse the analysis. By the same token, not to include the specific Aboriginality of the group in question as a factor to be taken into account is also mistaken, because being ‘Warlpiri’ implies a different history, language and culture from being ‘Ngunawal’, imparting different meanings to the experiences which we call disadvantage.

Finally, the concept of ‘disadvantage’ is always relative - a group of people are disadvantaged to the extent that another group of people are ‘advantaged’. Consequently, explanations of disadvantage need to account for the unequal relationships between both groups, and the characteristics and behaviour of each which sustain these relationships. Otherwise, ‘disadvantage’ appears as a ‘passive’ state, something which afflicts people, rather than something actually done to them. It therefore tends to obscure the role of human agency in producing the situation; unlike, for example, more politicised and historically-grounded terms such as ‘oppression’, ‘exploitation’ or ‘dispossession’, which draw attention more sharply to imbalances in the power relations in society (Moore, 1993).

These introductory observations suggest that the social and cultural determinants of health and ill-health interact with each other in complex ways, and our analyses are dependent on the clarity of the concepts - or theories - we bring to the discussion in the first place. We will not get far by thinking in terms of straight lines going from ‘objective’ social determinant ‘x’ to ‘objective’ ill-health state ‘y’, or building simple causal models susceptible to randomised control trials. The impact that education (or the lack of it) is having on Aboriginal peoples’ health will take some unravelling, no matter how obvious it appears at one level. It is therefore not surprising, as Underwood and Gray pointed out some time ago, that:
“Many broadminded medical scientists do not dismiss the social origins of disease, or the central role of society and culture to disease treatment and prevention, but (they) consider such areas unresearchable... (and) turn their faces from the muck and mystery of humankind to the safer and more easily controlled world of the microscope and the laboratory.” (cited Caldwell & Caldwell, 1991, p. 4)

This “muck and mystery of humankind” is the thing of which we must make sense, however, if we are to achieve any sustainable improvements in Indigenous health. One body of international research to which we can turn for help in this is the work on health transitions.
Health Transitions Research

The most significant and undisputed finding of so called “health transitions” research is that the education levels of parents, and particularly of mothers, appears to have a powerful effect on reducing infant and child mortality. Caldwell, whose studies in Nigeria first drew attention to this phenomenon, reports that:

“…. any kind of modern schooling reduces mortality levels and …. 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, p. 3; see also Caldwell, 1979; Caldwell, 1986; Caldwell, 1993).

Interestingly, these effects have been observed regardless of whether there are good health care facilities available, but have been found to be more pronounced in areas where there are. Moreover, the effect of schooling occurs to some extent independently of its effect on other social determinants of health, such as income and employment. There is also evidence that schooling has a positive effect not just on ones’ children’s health, but also on ones’ own. While the major focus has been on years of schooling, some studies suggest that adult literacy programs can substitute for school5 and produce similar effects. The 1993 World Development Report suggested that a 10% increase in literacy rates could lead to a 10% decrease in child mortality (cited Weeramanthri, 1995).

How have the 'health transition' researchers gone about establishing this connection between education levels and the health of people and their children? Without going into great detail, we can identify two distinct research strategies.

1. The basic paradigm

The first paradigm involves analysing existing data sets, such as national census collections, or international studies such as the World Fertility Survey, to establish that there is some positive association (‘correlation’) between rising education levels and improved health. For example, when the infant mortality levels of developing countries which spend similar amounts on health care are compared, those with higher levels of maternal education and literacy turn out to have lower infant mortality rates. A related strategy uses similar statistical measures to study different regions in the same country. These are all called cross-sectional studies. The health effects on education can also be examined through longitudinal studies, which measure changes over time in a particular country or group of countries in terms of the health and other status. Some studies in this vein have been historically-focused, going back to health and education records earlier this century to assess the impact that rising education levels may have had on recorded improvements in public health. Some studies combine cross-sectional and historical or longitudinal techniques. Since the fact that two things vary at the same time proves nothing, this type of study is done using complex statistical techniques, called regression analyses. These techniques control for other variables which might otherwise confound the results. Health transition researchers therefore also have to develop theories and hypotheses about all the other factors besides education which could be impacting on health status (e.g. employment, access to health services, income, level of medical knowledge) and find ways to measure the relative impact of them all.
2. The Study of Pathways

More sophisticated studies attempt to explain how and why education levels - and some of the other factors - have the effects they do. The various factors operating in these transitions are referred to as "pathways" - from improved social conditions in the general population to better health in individuals. Often, in the effort to understand these complex 'pathways', the research methodology moves from population level statistics down to more detailed survey data at the level of regions and localities, and from there to even more detailed micro-level, ethnographic, community and family case-studies. These more in-depth surveys and ethnographic-style investigations form the second general type of strategy employed in health transition research. Often the more in-depth surveys which rely on sampling specific populations are preceded by more general demographic analysis, in order to decide how to choose suitably representative samples to study in detail.

An example will help illustrate the basic paradigm or approach. Cleland et al (1992) used statistical techniques to analyse changes in child mortality between 1965-1985 in 12 developing countries for which there was comprehensive survey data from the World Fertility Survey and other sources. They discovered a median child mortality decline of 50% over all the countries, which translated to a reduction over the twenty years of 85 in the number of deaths per 1000 live births. To calculate the contribution that rising maternal education levels made to this decline, Cleland et al used the 1965 data to compute standardised mortality rates for children born to three groups - mothers with no schooling, those with primary schooling, and those with secondary or higher schooling. Then they worked out the hypothetical level of childhood mortality that would have prevailed in 1985, if there had been no change in education levels. The difference between the observed rate and the standardised rate, divided by the observed change between 1965 and 1985, gave them a percentage of that change attributable to the shift in composition of births over the period. Their results suggested that changes in maternal education levels accounted for between 4% and 36% of the decline over the period. In all but one of the Latin American countries studied, improvements in maternal education accounted for 20 - 35 % of the national decline. The median contribution over all countries was 10% (Cleland, Bicego, & Fegan, 1992).

An international journal, Health Transitions Review, was launched in April 1991 from the National Centre for Epidemiology and Population Health (NCEPH) at the Australian National University in Canberra, edited by Jack Caldwell and Gigi Santow. This followed publication of two volumes of papers from a 1989 Conference on this issue (Caldwell et al., 1990), and a book of readings including many of the major studies done up to this time (Caldwell & Santow, 1989). Since 1991, the journal has published many more studies, and similar research also appears in other international journals devoted to epidemiology, demography and health-related social science. There is now therefore an enormous body of literature, and a large research community working in the area, often supported by Foundations and other public and private agencies such as the World Health Organisation.

As the research effort has grown, increasing attention has been paid to the possible 'pathways' by which education can impact on health. A review by Hobcraft of some of this work summarises the possible pathways whereby mothers' education might enhance child survival as:

"...a shift from ‘fatalistic’ acceptance of health outcomes towards implementation of simple health
knowledge; an increased capability to manipulate the modern world, including interaction with
medical personnel; and a shift in the familial power structures, permitting the educated woman to exert greater control over health choices for her children.” (Hobcraft, 1993, p.159)

Comparisons between countries suggest some other interesting factors were operating in those countries which had a more rapid ‘health transition’. These include greater female autonomy in the society as a whole, a religious or cultural orientation valuing education, a greater commitment to egalitarianism, and a radical political tradition (Caldwell, 1986; Caldwell, 1992; Caldwell & Caldwell, 1995).

Arun Joshi’s work in rural Nepal provides an example of the more detailed in-depth study, in which both qualitative and quantitative data were collected. Her research took place in a community with a population around 6,000 living in an area of about ten square miles, and was conducted in three parts. A village-wide survey of 1,144 households was done to obtain an overall socioeconomic picture of the community and to select samples of mothers according to the ages of their children. The sample population was divided into two groups: 156 mothers of children between five months and 36 months; and a sub-group of the first, of 74 families with children younger than 15 months, selected in order to conduct age-sensitive mother-child observations. Interviews were administered to the large sample about various aspects of their lives, particularly health and their use of medical services. Finally, the small sample was given literacy and language tests. They were also observed over one full year to collect time-allocation and mother-infant interaction data; and anthropometric measurements of their children were taken. In addition, ethnographic information about the villagers was collected in order to contextualize the findings of the quantitative analysis. The primary outcome variables (i.e. measures of child health) used were wasting (weight for height) and stunting (height for age). In terms of other variables besides education levels of the mothers, they collected data on maternal age, various socioeconomic variables, and parents’ education. The study found a strong correlation between mothers’ education and child health, which the more in-depth analysis suggested was because education gave people specific health knowledge, but also a different ‘identity’ as they called it, from that of the less-educated villagers:

“Schooling provides basic literacy and language skills which are then used in ‘modern’ health settings. These skills also help women acquire and absorb new information through the media. It is not difficult to see how a widening base of practical knowledge concerning medical situations would give mothers more confidence as well as fluency or competence when interacting with modern health institutions. The acquisition of such skills and knowledge also acts synergistically with a new identity to help create ‘psychologically modern’… individuals. Such women identify with the whole modern system, including health centres and recommended treatments…” (Joshi, 1994. p. 24).

Although more work, especially longitudinal studies, was needed to develop a better theory of the way education has its effects, Joshi saw immediate implications for health and educational policies in developing countries, including “the need for rapidly expanding access to schooling for girls as a means to reduce fertility and mortality.” “Even where the quality of schools is poor”, she claimed, “more subtle ‘structural’ skills and dispositions are quickly acquired by young girls. Nevertheless, both the level of schooling and its quality are critical for better mastery of skills in childhood and more adaptive health behaviour in adulthood” (Joshi, 1994, p.24).
Finally, while most research focuses on the effect of the education of women, some have challenged this, arguing that it is not the situation of women per se, but their role in the structure of the ‘family of reproduction’ which is important. For example, the results of a study in Istanbul in Turkey showed that fathers’ education levels were more important, leading the author to argue that “most of the factors related to high child mortality are household and cultural conditions encircling the mother, and … only a few of the factors are direct attributes of the mother herself” (Gürsoy-Tezcan, 1992, p.131). Caldwell himself has pointed out that “the relationship between parental education and child survival must be placed in the larger context of the nature of the society and the family…” cautioning that the difficulties demographers faced defining and measuring such things did not warrant the conclusion that they did not exist (Caldwell, 1996, p.331).
Indigenous Health Transitions Research?

One major aim in the review stage of the CRCATH’s Health and Education Research Program was to assess the relevance of research within this ‘health transitions’ paradigm to the health of Indigenous Australia. Jack and Pat Caldwell, whose work had a major influence on health policy for Third World countries, justify this type of research on several grounds. Firstly, they say there is the intrinsic value of the knowledge gained, such research contributes “to our understanding of the world and how we see ourselves and others.” Secondly, it can help policy makers decide on appropriate “governmental interventions that will change behaviour and society in such ways as benefit health.” Thirdly, it may make a direct contribution to health simply by informing people “that some kinds of behaviour endanger their health and that of their children to a greater extent than does other behaviour.” Their final reason is perhaps the most challenging and provocative in relation to indigenous health, and to the health of all so-called ‘traditional’ societies. Health transitions research, they say, forms “one input into the debate about what aspects of societies and cultures must be rejected, or modified, or employed in a different way, or enhanced” (Caldwell & Caldwell, 1991, p.15. My emphasis).

At a conference in Darwin in 1995, three papers introduced the concept of the health transition to the investigation of Aboriginal health (Caldwell & Caldwell, 1995; Gray & Smith, 1995; Tsey, 1997). The Caldwells reviewed similar evidence to that cited above, and suggested among other things, that maternal education was a “proxy for female autonomy.” Drawing on his own experience of independence movements among colonised peoples in Africa, Tsey argued that health and education are connected because good formal education is a necessary pre-condition to achieving genuine self-determination, in that people will find it difficult to exercise their right of self determination, or perhaps even struggle for it, if they are not educated. He also pointed to the direct correlations between education and health found in the international literature. Gray and Smith concluded from their review:

“There is clearly room here for a major research project, bringing the international perspective to bear on Aboriginal education and health, with the aim of improving our understanding of the contradictory evidence about the effectiveness of Aboriginal education programs, and of the way in which education programs could enhance Indigenous health” (Gray & Smith, 1995, p. 175).

All the above authors, along with Weeramanthri (1995) and Rowse (1996, pp 219-227), imply there are benefits to be gained by applying the health transitions paradigm in Indigenous health research in Australia. It may seem strange this has not been done, given that the major international centre of this research effort is located at the Australian National University in Canberra. Its many publications, however, make scant reference to Indigenous Australia, or to any other ‘Fourth World’ population.

The one exception is the work of Alan Gray, a researcher in Aboriginal demography who spent some time at the Health Transitions Centre and published some papers in the collections cited above (Gray, 1990; Gray, 1997; Gray, 1998). In 1988, Gray undertook a study of data on child survival from the 1986 Census and found a clear relationship between the level of education of Indigenous women and the survival of their children. Children of the least educated mothers had the highest mortality, but survival was also low for children of the most educated mothers as well,
which Gray speculated may have been an effect of the more educated women's better responses to the question. Changes to the census since 1986 have precluded any follow up study.

One reason no more detailed work has been done may be that studies like the Nepalese one cited above involve a high degree of intrusiveness into peoples' lives, and Australia's Indigenous organisations have in recent decades succeeded in imposing control over access and the design of research in their communities. But even if less intrusive ways of studying these things can be found, there are other limitations in the health transitions research paradigm which suggest some caution in applying it directly in Australia. One is that most of this research compares countries, or the same country over different historical periods, and studies large populations which are relatively homogenous. This makes more sense in Third World countries where the majority of the population suffers from health status comparable to Aboriginal health status in Australia, and where the inequalities between countries are the main thing of interest. Why, this research asks, have some countries achieved better health than others? However, this way of approaching the problem makes less of an issue of inequalities within countries and the effect the inequalities themselves might be having on health.

Indigenous communities in Australia and other first world countries are clearly in a very different situation, as a dispossessed minority peoples with extremely poor health relative to the dominant majority. Their health status can hardly be viewed in isolation from that of the society which surrounds them, because it is part and parcel of the unequal relationship they are in with non-Indigenous society. If health transitions research with Indigenous communities is to contribute meaningfully to debates about social change, it will need to recognise - as the Caldwells suggested - that such change will mean a change in this relationship, not just a change in the Indigenous community. To adapt an insight from Paulo Freire, the unhealthy (like the illiterate) are not outside society, marginal to it, as we often like to think; rather, they are an integral part of it:

“These men (sic) … are not marginal to the structure, but oppressed men within it. Alienated men, they cannot overcome their dependency by ‘incorporation’ into the very structure responsible for their dependency” (Freire, 1972a : 27-8).

Caldwell's reflections on his own research do not avoid these more complex issues. In a 1992 article, he expressed concern that not all the factors he had identified in his earlier studies of “routes to low mortality” had been followed up with the same attention by subsequent researchers. Most, he said, had concentrated on the more easily quantifiable determinants of parental, and especially maternal education. In this article he ascribed a major reason for the apparent effects of education to the fact that it produces a “Western scientific attitude that induces a successful collaboration” with modern medical technology (Caldwell, 1992) (See also Caldwell, 1990; Caldwell & Caldwell, 1991). He also spoke of a “communist route” to low mortality and better health, citing the experience of the USSR before WW2, of China after 1949, of Cuba from 30 years ago and of Vietnam over the last 20 years. Despite the obvious health successes of these communist governments, no one much, he commented, was these days interested in examining how this was achieved, possibly because the ‘fall of communism’ had made this less fashionable. He suggested that the emphasis of communist governments on health access for all was one reason for their success, and along with this he nominated “greater egalitarianism and freedom for women and children,” a ‘dinting’ of “patriarchal family structure”, “something of the spirit that goes along with these changes,” and an increasing
secularisation and modernisation in society's beliefs (Caldwell, 1992, p.207).

The emphasis on egalitarianism, especially women's rights, echoes other comments by Caldwell, both in this article, and in studies of Sri Lanka, of the importance to health of what he called “a radical democratic tradition” (Caldwell, 1986). For example, Nag (1990) reported a study which compared rural Kerala and West Bengal in India, and argued that attitudes towards fighting for one's rights, which were stronger in Kerala, were an important explanation for decisively lower mortality. Kerala was also ruled for much of its recent history by a communist government which was popularly elected.

So here we have an important theme, one which is much more complex than the simple proposition that health improves with increased access to schooling. In this more complex model, increased access to education (and to health care) now might either cause and/or be an effect of other social and historical factors which help to determine health status. This is already acknowledged by Caldwell even in the more straightforward case of the impact of mothers' education levels on their children's health, which he suggests is due to the increased power and confidence and increased willingness to cooperate actively with western-style medicine. This has immediate relevance to any discussion of the possible impacts of education and other social determinants on Indigenous health.
Education, Culture and Control

The relevance of this more complex model of the effects of education on health status to an Indigenous context is that education systems in Australia and elsewhere, historically-speaking, often aimed to reduce Indigenous peoples' power and authority over their children, and helped to lower the status of Aborigines in society. These systems often devalued Indigenous laws, languages and cultures, and most importantly, denied the basis on which people legitimated their ownership of the vital economic resources of land and sea. The education system has been, in other words, heavily implicated in the processes of dispossession and cultural genocide which were major causes of increasing ill-health. While no Australian studies exist which show a direct link between the assimilationist 'native' education system and people's subsequent poor health status, there is an international literature on the health effects of acculturation (Corin, 1994) which shows that it can have both positive and negative effects. For example, a study by Kunitz and Levy among Navaho men and women found that among the women hypertension was consistently associated with various indices of acculturation, including level of education, attendance at a boarding school off the reservation, and English language fluency, but similar experiences seemed to have had the opposite effect on the men (Kunitz & Levy, 1986).

The case study material reported in the Stolen Generations Inquiry (Australia, 1997) provides anecdotal evidence that many people removed as children from their families and communities believe strongly that their physical and emotional health in later life was worse, not better, than it would have been if they had been allowed to remain where they were. This is despite them receiving a 'better' education, in terms of the quantity and quality of their schooling. A recent analysis of the data from the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS) adds weight to this, revealing that both men and women who had been removed from their natural families as children were significantly more likely to report fair or poor health (as distinct from good health) than those not taken away, even after adjusting for age. However, the report did not correlate this with actual education levels (Cunningham, Sibthorpe, & Anderson, 1997). The historical experience of education as assimilation explains why issues of control have been such a constant theme in the positions many (but by no means all) Aboriginal people and their organisations have taken in relation to education. For over twenty years, the need to increase Indigenous control over education has been reiterated in every major inquiry and review, including the work of the National Aboriginal Education Committee (NAEC) in the 1980s, which paved the way to the current national Aboriginal Education Policy, adopted in 1989, and re-asserted in the most recent national Review of Aboriginal and Torres Strait Islander Education (Australia. Commonwealth, 1995; see also Schwab, 1995). Such views are also expressed in the education clauses of the UN Draft Declaration on the Rights of Indigenous Peoples. When the Royal Commission into Aboriginal Deaths in Custody was examining the contribution of education systems to the perpetuation of Aboriginal disadvantage and powerlessness, H.C. (Nuggett) Coombs drew on his research into Aboriginal education in Pitjantjatjara lands and the Kimberley to argue some caution about trying to 'mainstream' Aboriginal people into the existing education system. His concerns were echoed in submissions from Aboriginal-controlled education providers including the Institute for Aboriginal Development and Yipirinya School in Alice Springs.
A study the author helped undertake in 1997 analysed in more detail the complexity of the relationship between education and control, or between education and self-determination (Federation of Independent Aboriginal Education Providers, 1997b). This study showed that Indigenous staff and students saw the connection between education and control as a ‘pedagogical’ as well as a ‘political’ principle, believing that more effective learning occurred when issues of culture and control were acknowledged, a point now substantiated by a more recent quantitative study of educational outcomes in independent Indigenous colleges (Durnan & Boughton, 1999). Similar views are expressed in the international Indigenous education research literature, (e.g. Haig-Brown, 1995), and are consistent also with views of educational theorists from outside the Indigenous context, such as Paulo Freire, whose work among marginalised people of Brazil in the 1960s helped popularise concepts like ‘empowerment’ (Freire, 1972a; Freire, 1972b).10

The relevance of these debates within Indigenous education theory and policy to analyses of connections between education and health become obvious, once one considers the importance which the health research literature also places on notions of control.
Class, Health and Control

In the health transitions literature, Simons (1989) deploys a model from social psychology to argue that 'health-seeking' behaviours by mothers in relation to their children are partly dependent on a variable he calls "locus of control," ie. the degree to which individuals believe that their behaviour can actually influence events.

U.S. health funding foundations similarly seek to build community-capacity as a health promotion strategy, arguing that this includes a 'sense of efficacy' held not by individuals but by whole neighbourhoods (Easterling, Gallagher, Drisko, & Johnson, 1998).

Freire made a similar point in an educational context, and built his empowering literacy programs called 'culture circles', around helping people learn to distinguish between 'nature', which is to some extent beyond human control, and 'culture' which is the product of human activity. The advantage of Freire’s analysis over that of U.S. social psychology and community development theory was its recognition that the belief that one does not have control reflects real material circumstances and life histories, and is not just a ‘given’ of particular personalities or cultures, or their access to medical and scientific knowledge.

Another relevant body of research recently synthesised by Evans et al (1994) is currently attracting considerable attention in Australia (Dixon, 1999). Beginning with the well-documented differentials in health among different social classes, Evans et al argue, like Wilkinson (1996), that it is income differentials, i.e. relative inequality, rather than absolute impoverishment, that seems to be more important. They cite evidence such as the studies by Marmot of British public servants to argue that there is a stress factor related to lower status employment which induces greater susceptibility to disease. This stress response is once again related to a lack of control over the rhythm and pace of work (Marmot, Bosma, Hemingway, Brunner, & Stansfeld, 1997).

This point was well captured in an ABC radio interview in October 1998, in which Professor Leonard Syme discussed research going back several decades into the social determinants of health. “Lower social class” he told the interviewer, “is the most important risk factor for health for virtually every condition in all of the industrialised world.11 (But) we rarely have studied that, because it seems overwhelmingly difficult and it would sound like there is not much we can do about it ….” Syme went on to speak about Marmot’s work on morbidity and mortality among British public servants. “If you think about people in the lowest social class positions, we think about poverty and low education, poor diets and housing, all the things that we all know about, but how do you explain a rate at the job level that’s second from the top, professional and executives, doctors and lawyers? These people are not poor, they don’t have bad diets, bad housing and their rates are twice as high as those at the very top…. (The) only hypotheses that I could come up with was something called ‘control of destiny’, the ability of people to influence the events that impinge on their lives” (my emphasis) (Swan, 1998).

Control over the labour process, which Marmott identified as a major health determinant in the civil service, and which Syme also studied among San Francisco busdrivers, has long been a central concern of industrial sociology. Braverman’s work in the 1970s was particularly influential in illustrating with extensive evidence that issues of control were at the centre of most day-to-day conflict in the workplace, and were the central factor in the historical evolution of relationships...
between owners and managers on the one hand and workers on the other (Braverman, 1975). An Australian, Fred Emery, did extensive work in a similar vein at the Tavistock Institute in London and at the Australian National University in the 1970s and 1980s (e.g. Emery & Emery, 1975). Putting this work in industrial sociology together with the health studies of Marmot, Syme and others, we might re-phrase their findings to say that illness is an effect, not so much of class, but of the unequal power relationships between classes, in which people of one class have greater control, i.e. power over the lives (and work) of people of another class. Peoples’ health status, in this model will in part be determined by the degree of ‘class power’ they bring to the relationship; the extent to which they can, as a class, exert their own power; and the ability to which they are able to control their lives in opposition to those from other classes who would control it for them.

In this alternative model, the more objectified static concept of class deployed in social scientists’ studies of stratification by income and occupation - where ‘class’ is a set of measurable characteristics of individuals, fixed in time - is replaced with the more dynamic concept of class used by historians, where it describes historically-specific, unstable and changing relationships between large groups of people. These class relationships form primarily through the processes by which societies organise their economic activity. Individual income in this model, is not a thing-in-itself, but one’s relative share in a larger whole which everyone has a hand in producing, the product of society’s collective labour. Once things are described in this way, it becomes clear that the size of the share which any one individual receives is determined more by the power of the class of which he or she is a member, than by any characteristics of that individual. In other words, class determines income and status, rather than the other way around.
Race, Class and Indigenous Health: Historical Perspectives

Though most research on Indigenous health these days acknowledges the effects of colonisation and dispossession, hardly any theorise these processes from within this paradigm of class conflict or class struggle. Yet colonisation was - and still is - integrally interconnected with the international conflict between capital and labour, and between competing capitals. It has been part of the way these struggles have been fought since the age of imperialism, when different national capitals in the northern hemisphere sought new resources and new markets in ‘the south’; while at the same time seeking new lands in which to settle their own country’s ‘surplus’ populations (Hobsbawm, 1987).

In the Indigenous lands which eventually became Australia, an entire ‘traditional’ mode of production was destroyed in the process of invasion and colonisation. Both the physical and human resources that had been mobilised in this ‘traditional mode’ were slowly and inexorably swallowed into the new mode brought here by the colonists. For example, in North Australia in the first half of this century, people recovered from the onslaught of a murderous invasion to find themselves virtual slaves as stockworkers and domestics in the native labour regimes maintained on cattle stations, missions and settlements. In the space of a generation or two, Aboriginal people thus went from a situation of complete autonomy (as peoples, or bands, if not as individuals) in one mode of production, to almost absolute dependence on another. The historical data provides ample evidence that this ‘transition’ was clearly associated with rising incidences of disease and increased mortality (Berndt & Berndt, 1987; Kimber, 1991).

However, Aboriginal people demonstrated an extraordinary capacity to maintain and defend their own ‘agency’ in this process, and were never simply passive ‘victims’. One more recent aspect of this was the use of ‘traditional’ forms of European working class organisation (trade unions and political parties) to win back better material renumeration and more freedom and control over their lives. It is no accident that the equal wage struggles of the 1940s /50s (Pilbara and Darwin), and the 1960s (Central Australia - Wave Hill and Victoria River Downs) quickly became land rights struggles, seeking the return of some of the stolen Aboriginal lands which had previously been the basis for economic and political self-sufficiency and autonomy. The claims by Aboriginal people and organisations that land rights are an essential pre-requisite for achieving improved health are reflected in the most recent health transitions research. Land is potentially a basis for reasserting autonomy and control, and not being dependent on the arbitrary and unpredictable behaviour of non-Indigenous others. Nor should it be forgotten that the relationship between the Aboriginal rights movement and the trade union movement in North Australia in the 1950s and 1960s included many struggles around issues directly related to health, such as the payment of tuberculosis benefits, improvements of conditions on settlements, and even the campaign for a proper leprosarium (Boughton, 1999a; Norris, n.d. circa 1982; Taffe, 1999).

One might therefore hypothesise that the rapid decline in child mortality which occurred in Central Australia from the mid-1960’s - a significant indicator of a ‘health transition’ - may have had some connection to the growing political power and rising political consciousness among Indigenous people, not simply to the expansion of health services. This political power grew in part from political alliances between Aboriginal leaders and the national working class movement. This power was
real, and was represented in the level of organisation and national support achieved in the strikes and walk-offs on the pastoral stations in the period 1966-1968; in the symbolic and practical gains from the 1967 Referendum; and in the emergence of national and local Indigenous rights organisations led largely, and for the first time by Indigenous people. We might further hypothesise that the levelling-off of the decline in Indigenous mortality rates in the last decade (Graph 1) may be related to the failure of land rights and self-determination movement to maintain its momentum in the face of the well-organised conservative reaction from the mining and pastoral industries in the 1980s and 1990s.

While such hypotheses are not amenable to testing by simple statistical analyses, they could be examined through a combination of historical research and the collection of qualitative and quantitative data. This approach has the added advantage of contextualising the changes which occurred in health status over time in terms of the specific experiences of different generations, in whom this history was literally ‘embodied’.16

Graph 1. Aboriginal Infant Mortality, NT, 1965-1995

Sources: (Aboriginal Medical Services Alliance Northern Territory (AMSANT), In Press; d’Espaignet, Woods, & Measey, 1997; Plant, Condon, & Durling, 1995; Smith, 1980)
Health, Control, Choice and Empowerment

Leonard Syme concluded his ABC interview previously quoted with these words:

“…the question of choices and alternatives in living is really what it is about. It is not so much poverty, or any of the other things we think about, and this is an issue we can intervene on. So we actually have developed a whole series of projects now that try to enhance people’s empowerment, their control over their lives, choices and alternatives, and resources to help” (Swan, 1998).

He overstated his point a little, in that the international evidence is overwhelming that poverty is a very significant factor in determining health independently of the issue of empowerment and choice. The obvious case is those countries where extreme poverty leads to widespread malnutrition, but it extends to Aboriginal communities dependent on below-poverty line social security payments for the majority of family income (Kutjara Consultants, 1999). However, it is true that whether or not there is poverty in this absolute sense, issues of choice and power and control are central to health. These views are neither unusual, nor revolutionary, nor even particularly new. In fact, the Ottawa Charter adopted more than a decade ago at the First International Conference on Health Promotion, co-sponsored by W.H.O, made similar points:

“People cannot achieve their fullest health potential unless they are able to take control of those things which determine their health…”

Health is created by caring for oneself and others, by being able to take decisions and have control over one’s life circumstances…” (my emphasis)

W.H.O’s Global School Health Initiative more recently linked these views directly to the education system, with its

“call for schools to enable individuals to: care for themselves and others, make decisions and have control over their life circumstances and create conditions that are conducive to health.”17

These developments internationally grew in turn out of the 1978 Alma Ata declaration which focused attention on the key role of primary health care, which, it said, was characterised by “maximum community and individual self-reliance and participation in (its) planning, organisation, operation, and control …; and to this end develops through appropriate education the ability of communities to participate.” (World Health Organisation, 1978)

Twenty one years since Alma Ata, why did these same propositions need to be re-cycled and re-formulated in Marmott, Syme and others’ ‘new’ discourse of health reform? The reason may be that it is one thing to assert that power and control are central to health, and even that education is a key to people achieving it, but this does not tell us how people actually achieve that control, and what kinds of education will most successfully help them to do so. The CRCA TH, whilst having embraced the centrality of ‘the control factor’ in its analysis of Aboriginal health, needs also to take heed of David Werner’s warnings of the dangers of co-option of the rhetoric of primary health by the World Bank and the other national and international agents of globalisation (Werner, 1999). Moreover, we must also make clear the important practical as well as theoretical differences between:
• one’s individual capacity to exercise autonomy and control over working environment and “life circumstances”;

• community control of health care services and of other health-related programs and infrastructure; and

• control over major social determinants of health which operate not so much at an individual, family or community level, but at a national, regional, or even global level, for example, the distribution of wealth and income.18

While a woman who has had more years of schooling may be able, as Caldwell describes, to ensure that her husband and mother-in-law allocate more resources to the health of her children, actually having a health service to go to depends not so much on the education of the individual mother, as on the political power of the community, or of the nation of which it is a part, to enforce a distribution of health care resources in its favour. By the same token, while her own education may be a factor in how well she is listened to at the health centre - another finding from the health transition school - the degree of community involvement and participation in the centre’s staffing and/or management may also be a contributing factor; and this in turn may be an effect of the education level not of the individual mother but of her community.19
Self-Determination, Community Control and Governance

The industrial and political struggles that Indigenous peoples and their supporters fought from the 1940s to the 1960s, helped to dismantle Northern Australia's slave labour regime and overturned the native administration's worst excesses in terms of the denial of basic civil and political rights. Over time these struggles paved the way towards the return of some of the stolen lands.

But this did not amount to the re-establishment of genuine Aboriginal power or autonomy in any sense comparable to the degree of power and autonomy that people enjoyed prior to colonisation. With the material base of the old mode of production largely destroyed by the expansion of the cattle industry and the growth of towns, traditional forms of law and power have only been able to survive alongside and in an unstable and conflict-ridden accommodation with the new mode of production introduced by the settlers, including 'their' political and administrative superstructure. The contradictions inherent in this situation are now mediated by new Indigenous forms of organisation, themselves a product of developments in the non-Aboriginal response to the problem of so-called Aboriginal disadvantage.

Most importantly, in the context of the issues this paper raises, the development of community-controlled Aboriginal organisations since the 1970s moved the conflict over power and resources to a different level, beyond campaigns around workers' rights or even land rights, to the whole question of self-determination and governance. This is because the community-controlled organisations took on service provision roles which had previously been the preserve of government, leading to competition and conflict with 'mainstream' government agencies over resource allocation and the policies which determined this (Boughton, 1998; Scrimgeour, 1997).

The central issue here is self-determination which is a concept in international law expressed for example, in the United Nations Charter, and more recently in Article Three of the Draft Declaration of the Rights of Indigenous Peoples:

"Indigenous peoples have the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development." (The United Nations Human Rights Commission, 1994).

This right of choice, to "freely determine," is a right of peoples. It is a collective right, not an individual right. It differs from an individual's right of choice, which is exercised within a legal framework already established by the collectivity - 'the people' - who have the right to self-determine.

It also differs from 'self-management', which usually means that individuals from an affected minority group have a right to participate in decision-making and administration of services they receive, but within a pre-existing administrative and legal framework which they have not necessarily chosen, as a people, for themselves. Debate within Australia over Indigenous Affairs policy and programs often fails to distinguish among these different levels of power and choice. Government officials, for example, regularly conflate self-management with self-determination, when they claim that the latter is achieved through the appointment of Aboriginal people to management positions in government departments.
A recent article in *Recent Advances in Microbiology* by the CRCATH’s Founding Director reproduced this confusion, specifically in relation to education:

“Influential Aboriginal leaders also believe that the important principle of Aboriginal self-determination has had an unintended consequence of hindering the education of generations of their young people” (Mathews 1997: 307).

This statement contradicts the findings of both the Royal Commission into Aboriginal Deaths in Custody and the more recent Commonwealth Review of Aboriginal and Torres Strait Islander Education. The Royal Commission concluded from the evidence it heard on education that if the aims of national Aboriginal education policy were “not only to achieve equity in education for Aboriginal people but also to achieve a strengthening of Aboriginal identity, decision making and self-determination”, then it was “unlikely that either of these aims can be achieved without the achieving of the other” (Royal Commission Into Aboriginal Deaths In Custody, 1991, Rec. 299). The Review, chaired by Mandawuy Yunupingu, concluded that self-determination was fundamental to the achievement of educational equity, and named “self-determination in education” as one of the five basic principles which should inform education policy and provision (Commonwealth of Australia 1995: Recommendation 2, p.27). While those findings do not alter the fact that some Aboriginal leaders may believe that the self-determination policy has undermined educational effectiveness, their views should at least be qualified by reference to the considerable evidence around which suggests that the opposite is in fact the case. But there is more at stake here than competing views about the value of self-determination. What this article illustrates is the confusion and contestation which persists about what self-determination actually means.

Elsewhere in the article, it becomes clear that both Mathews and the Aboriginal leaders he quotes are complaining about the fact that Aboriginal people are not sending their children to school, and that the law in relation to compulsory school attendance is not being enforced. However, it is quite wrong to consider this as an example of self-determination.

Self-determination is about choice, but not about choices made by individual children or their families. On the contrary, it may well be the absence of self-determination in its politico-legal sense, that is an absence of Indigenous political power in relationship to the education system as it is currently structured. The result of this is a sense, at the level of the family and individual, of basic powerlessness which leads people to make such ‘choices’, if choice is in fact the appropriate term. An education system prefaced on a recognition of Indigenous rights of self-determination, one which prepared children and young people to ‘take power’ within their own communities, within political structures decided by themselves would, according to many commentators engender greater participation (e.g. Nicholls, 1998b). On this account, the problem may not be *too much* self-determination, but *too little*.
Education for What?

This brings to the centre of the discussion educational philosophy’s most fundamental question: Education for what?

Education and health are both key aspects of governance, but education is related to governance in more complex ways, because it is one of the major institutions by which societies reproduce in each new generation their basic understandings of their social and political roles and obligations, including their understandings of how power should be distributed and exercised. The history of the extension of public education to the (non-Indigenous) working class from the 1870s onwards in Britain and its colonies can, in part, be read as a response to the successful struggle by that class for an increased share of political power. Likewise, the extension of mainstream education to the majority of Aboriginal people who had previously been excluded from it - a development which dates only from the 1950s in the NT and in many other parts of Australia - has been part of socialising them into their role of citizens, i.e. subjects, those who are governed. This is one aspect of the way in which education forms us as subjects in a wider sense, helping us to construct our identity which includes the cognitive frameworks with which we make meaning out of our lives.21

What happens, however, when education is a process of induction into an alien language and culture, one which uses quite different ‘tools’ with which to make meaning? What happens in these circumstances to one’s identity, not just as an individual, but as part of a people? And what impact does this have on health and well-being? From another direction, what is the effect of an education which forms people as subjects/citizens with no reference to their own family’s or community’s pre-existing notions of law, rights and governance, to their ‘Indigenous citizenship’? In this context, it is worth recalling the continuing high number of Aboriginal deaths in custody, now being matched by an increasing incidence of youth suicide outside of prison, as well as the ‘slow suicide’ of alcohol, drug and other substance abuse among young Aboriginal people. Suicide, Durkheim’s classic study showed, is an expression of anomie, of extreme loss of meaning (Durkheim, 1951). It might also be described as a most extreme expression of powerlessness, or loss of control.22 Is this, as the Royal Commission suggested, partly a consequence of an education system which has been unable to assist people successfully to negotiate between two contradictory systems of meaning, and therefore left people with neither?23

This brings us back to a question unanswered by the health transitions research. While some of its findings suggest that it is years of schooling rather than content or quality of schooling that is the principle ‘proxy’ for the education effect, this is a ‘black box’ theory. It does not solve the mystery of how schooling has the health effects which the data record. If schools inculcate certain values, as Caldwell has suggested, then what are those values, and why are they health promoting? Is it possible to have forms of education or schooling which are promoting anti-health values? If egalitarianism in society is one factor that also correlates with better health, what of schools that inscribe anti-egalitarian values (such as racism) in their practices? If having greater control over one’s destiny is health-promoting, what of schools which teach the subordination of one’s will to God, or to the colonial state? If belief in modern science is health promoting, what of mission schools which teach
fundamentalist religious beliefs? Finally, if it is the imparting of values that makes the difference, then why focus simply on schools? As Lawrence Cremin’s classic history of education in the United States demonstrated, school is just one of a plethora of educative institutions within society, alongside families, workplaces, museums, political parties, trade unions, the media, churches, and so on. The values of a society are a complex mix of the products of all these influences, many of them ‘educating’ people in contradictory directions.
Conclusion: Towards a More Systematic CRCATH Education and Health Research Program

The questions above highlight the fundamental issues to be addressed by a research program aiming to find out how education can impact more positively on Aboriginal health. How then does this question translate into specific research projects? We have now completed a systematic review of published and unpublished research, of which this Occasional Paper is one outcome.25

Since the review began, the CRCATH Board has also approved a participatory action research project in the NT’s Top End to explore the inter-connections between education and health through consultation and dialogue in two communities, one remote and one urban. In February 1999, a second project began in Central Australia which engages specific communities in active dialogue about the nature of the connections between education and health, including the nature of the pathways through which the health effects of education are experienced by people themselves (Maidment, White, Wright, & Lochowiak, 1999). Both studies involve Aboriginal researchers working in their own communities to draw on local knowledge and understandings, and both take into account the concerns raised in this paper and elsewhere (e.g. Christie, 1998) about the impacts of ‘western’ education on local cultures and languages. The Program Reference Group has recommended that some quantitative studies be undertaken which would link with these qualitative projects, so that findings from both types of work could input to the debate within the communities themselves about the nature of the education - health connection (Boughton, 1999d).

As we have seen, the central health transitions hypothesis, that education impacts positively on health, has not systematically been tested in relation to Indigenous peoples either in Australia or in any other first world country. Consequently, for the CRCATH to go down this path of investigating Indigenous health transitions will undoubtedly attract international interest.26 More importantly, a research project of this type may provide insights into the determinants of Indigenous ill-health and hence some better idea about what can be done to remedy it. For example, the well-documented low levels of Aboriginal education outcomes relative to the non-indigenous population, are to some extent, and especially in remote areas in northern and central Australia, associated with low levels of resourcing of educational provision.27 If the CRCATH’s research established that one of the consequences is poorer health, this may help convince both communities and government that increased resources are needed. On the other hand, some people have said that we already know enough about this connection, not just from the international research but also from the experiences of Aboriginal people themselves, many of whom strongly oppose being made objects of academic research which serves only to tell them what they already know. This suggests that two types of research strategy need to be followed. In the first instance, there is a need to be more in-depth studies, both quantitative and qualitative, of the links between education and health. Secondly, there is also a need for research specifically aimed at identifying and removing obstacles to the achievement of better educational, and therefore also health, outcomes.
As the CRCATH grapples with these issues, it may be useful to consider them more concretely in terms of available or potential research project designs. Much of the overseas work has focused on the impact of education, and especially mothers’ education, on infant mortality, partly because of data availability, partly because this is a common measure of a country’s health status, and partly because measures of health and ill-health can be highly problematic. In most states and territories of Australia however, the range of available data is of much better quality than can often be found in Third World countries, and infant and child mortality is only one of many measures that could be chosen to assess community health. For example, Hall (1985) studied a sample (194) of the 1554 survivors of the neonatal period, born 1978-1982 in Alice Springs and Barkly region, investigating their mortality and morbidity experiences up to September 1983, their utilisation of health services (preventive, primary and hospital based), compared these children’s experiences with those of other children based on accounts in published work. Hall used medical records to determine patterns of mortality, morbidity, utilisation of health services and nutritional and immunisation status. This suggests it might a relatively simple matter to use existing medical records to conduct a similar study, one which included an investigation of some index of parental education levels.

Given the rapidly declining level of infant mortality, without a corresponding improvement in overall mortality, research should also look at the impact of education - and other cultural and social determinants - on the survival of teenagers and young people, or on adults generally. It should also be noted that at least some health transition studies have found that the impact of maternal education on child mortality is strongest in the years 2-5, which Cleland hypothesised was a time when the child’s chances of dying are more susceptible to differences in mother’s behaviour than the time closer to birth (Cleland, 1990). On the other hand, as a recent paper by AMSANT points out, the rapid decline in Aboriginal infant mortality in the 1970s has plateaued, and the rate is still three times the national average, with much higher rates in some communities (Aboriginal Medical Services Alliance Northern Territory (AMSANT, In Press). One possible research question then, is whether education is a factor contributing to this continuing disparity, both between specific communities, and between Indigenous and non-Indigenous people as a whole.

An overall research strategy, therefore, might follow sequentially the multi-stage model described in this paper. The strategy would begin with one or more broad-level examinations of data available already from the censuses, NATSIS, state mortality and morbidity collections and the educational participation data provided regularly to ABS by education systems (Appendix 1 presents a listing of some of the available data sets identified during the course of this review, see also (Australia, 1998)). At this level of analysis, statistical techniques can identify correlations between various measures of education and various measures of health status within the Aboriginal population, for example, between different states/territories, between urban and rural areas, and between different regions, along with the impact of other known variables. A preliminary study conducted during the review using NATSIS data which is reported in detail elsewhere (Gray, 1999) has demonstrated the potential of this type of work.

Besides feeding results back into communities for discussion via the qualitative projects, such studies could then be followed up with one or more detailed surveys of specific communities or regions, or specific population groups, e.g. all children born in Central Australia or the Top End over a particular period, and their families. This survey data also needs to be further supplemented with more detailed ethnographic and observation work at a local community level, done in consultation with the
community. At this micro-level, we would not simply be examining whether better education levels are associated with better health, but also trying to identify the nature of any intervening variables, i.e. why education has a positive impact on health, if it does. For example, is it an effect of literacy, or empowerment, or greater attention to child survival, or of more ‘modern’ attitudes, to name a few of the many explanations found in the literature. An immediate opportunity for such a community survey presents itself through an ‘in-kind’ CRCATH Public Health Program project being undertaken by Territory Health Services in a Central Australian community to evaluate the impact of housing and infrastructure development on child health. As a result of discussions with our program, the project staff included questions about education levels in their household surveys, which can now be linked to data on child health obtained from two screenings (Hall, Ewald, & Franks, 1999). Some work needs to be done with local school staff to verify the education data and to reduce the number of missing cases, but this data could, if the community were willing, provide a rich source for further in-depth follow up work.

Other types of study might also utilise data already collected by education and health systems, and perhaps even seek to link these different administrative collections in order to create data for more longitudinal studies. To overcome one major limitation of the NATSIS data - that it is an Indigenous-only survey - attempts should be made to develop data collection so as to be able to make meaningful comparisons between Indigenous and non-Indigenous populations. Among the health indicators available are mortality measures, birthweight data, and population morbidity data collected through health clinics and hospitals. A fairly simple study might, for example, compute educational participation rates (by gender, region and Aboriginality) for a particular age-cohort, and relate this to the same age-cohorts’ mortality rates in subsequent years.

As argued throughout this paper, such statistical, survey and ethnographic studies cannot give a full account of any Indigenous health transition unless they are supplemented by longitudinal studies which include some historical research. In particular, the CRCATH must take seriously Caldwell's caution to demographers and others not simply to focus on factors which are most amenable to statistical measurement, and take heed to his and other's findings on the importance of understanding the contribution which social and political factors play in changes in health status over time. As I argued in another paper from this review (Boughton, 1999c), one of the major insights of the health transitions research was the contribution that social learning, the learning which occurs in social movements, made to health development. Without this perspective, research runs the risk of de-emphasising the role that organised action by Aboriginal people themselves has played and will continue to play in achieving better health. This connects also to a point made in response to an earlier draft of this paper, that given we already know that education can improve health, some projects within the CRCATH's Health and Education Research Program should focus on improving educational outcomes such as identifying strategies to improve attendance, researching links between bilingual education and better health, and “collaborative action research into effective mechanisms and consultation processes to increase Aboriginal influence and/or control over NT Government Aboriginal education policy and services.” (Matthews, S. pers.comm.)

In conclusion, the international evidence shows that the proposition that education can make a significant contribution to improving the health of populations, both of the people themselves and of their children, is unarguable. This is clearly not so much a matter of health education, or of health promotion, but has to do with the impact that schooling and other kinds of education have
on peoples capacity to exercise greater control over their own lives, including their capacity to interact more effectively with health services and modern medical knowledge and its practitioners.

To the extent that the CRCATH can demonstrate that this is also true among Indigenous people in Australia, it will become even less acceptable that Indigenous people and their communities in North and Central Australia currently gain so much less from the current educational system than their non-Indigenous counterparts. At the very least, this should assist communities themselves and their representative organisations, in partnership with governments, to find ways to improve educational services and outcomes as part of their strategies to improve health.

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Footnotes

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2 For example, the draft NT Chronic Disease Strategy being developed for the NT Government's Territory Health Services identifies "Aboriginality" (along with being overweight, inactive, and having a low income) as a risk factor in contracting chronic diseases – yet this clearly is not meant to mean that Aboriginal people are genetically pre-disposed to chronic disease.

3 These issues are further canvassed by Corin (1994)

4 In this paper, I have chosen to use the more common term Aboriginality rather than the less-familiar ‘idigeneity’, to include Torres Strait Islander identity as well as the identity of Aboriginal peoples in Australia.

5 Quite separately from the health transitions research tradition, adult literacy educators and researchers in Melanesia make similar claims about the health impact of education for adults (Farraclas, n.d.).

6 Edward Tilton from AMSANT responded to this point in an earlier version I distributed of this paper with the following comment, with which I totally agree: “Poor formal education does not seem to me to prevent people struggling for self-determination. If one says "ah, but the activists you refer to are educated" in the sense that they have an analysis that makes sense of the world, I would agree – but this makes the whole point about "what is education" and where does it come from. It certainly cannot be reduced to formalised schooling, though that is obviously important. Personally, it seems to me that a questioning attitude to the world and its events is the crucial necessity for struggle. Education can precipitate this attitude – but so can direct experience (of oppression, discrimination etc). Formal education can also work against the development of a questioning, thinking mind.”

7 Nag used various indices to measure political awareness, one of which was electoral participation rates - Kerala's rate was 84% compared with West Bengal's of 56%. He also drew on opinion polls which suggested that Kerala voters were "more militant, more decisive, more hostile to or alienated from government … and more loyal to the communist cause" (Nag, 1990:359).

8 A further analysis of the NATSIS data has also shown that obesity in men is correlated with higher education levels (Cunningham & McKerras, 1998, pp.28-9). Given the associations between obesity and ill-health, this may also suggest some other qualifications to the education - health link.

9 Similar concerns about control have also always been expressed in relation to research, at least since the 1938 Day of Mourning Manifesto issued by the Aboriginal-only demonstration held in Sydney in protest at the celebrations of the 150th anniversary of white settlement in Sydney. The same concerns are regularly raised with me in Central Australia, when I present to Aboriginal groups about the CRCATH's Health and Education Research Program.

10 More recently, a colleague of Freire has extended this analysis to the educational experiences of young Afro-Americans in New York (Shor, 1987; Shor, 1992).

11 In response to this point, Alan Gray commented that class was not the greatest observable risk factor, because the differentials associated with marital status were much greater. However, this may still relate to the issue of control in that Gray reports that a recent study he has done in Thailand suggests "it is not marriage but the fact of being in control of a household which provides the protective effect" (pers. com.).

12 The 'common - wealth' as the 19th century framers of the Australian constitution described it.
It was however the 'dominant paradigm' of the movement for Aboriginal rights from the 1930s to the 1960s.

More than a thousand people, perhaps ten per cent of the Indigenous population, are estimated to have died in the 'Black Wars' in Central Australia in the twenty years from 1871 - 1891 (Aboriginal Medical Services Alliance Northern Territory (AMSANT), In Press).

These lands were also the basis for the rich and complex intellectual, spiritual and religious life which invasion and colonisation threatened, but did not destroy.

The idea that history is inscribed in the tracks it leaves in the bodies of the individuals who live it is found in the works of social theorists Michel Foucault and Alberto Melucci, among others, and was originally suggested to me by comments on an earlier draft of this paper by David Legge.

The above quotes come from documents posted on the WHO's website, http://www.who.int/home/. See also the discussion of this passage in Caldwell (1986).

A similar argument was made by Menzies School of Health Research medical anthropologist Tim Rowse: “A theory of 'empowerment' … is incomplete if it does not specify the level - individual, household, ‘family’, ‘community’ - to which the ‘self’ of ‘self-determination’ refers.” (Rowse, 1996, p73). Note, however, that he stops at ‘community’, falling well short of the possibilities of regional self-government promoted by the NT Land Councils, among others, since 1988.

An important contribution to the health transitions debate by Ewbank (1994) makes a related point criticising the bias towards the behaviour of individuals ('rational actor' models, he calls this) in much of that research traditions' explanatory frameworks.

This response is epitomised in the research work of Charles Rowley and the Social Science Research Council at ANU, which from 1967 generated the first systematic academic studies of Indigenous disadvantage. One of Rowley’s most important contributions was to advocate the establishment of incorporated Aboriginal organisations to create an administrative ‘organ’ which could both be under Aboriginal community control but also articulate with the apparatus of 'modern' government, including through the receipt of government funds. He thus sought to give the abstract concept of Indigenous power and autonomy a practical form. Indigenous people quickly took such ideas up, beginning with the first medical services and legal services established in Redfern in Sydney in the late 1960s.

The relationship between education, identity (i.e. 'subjecthood') and governance is a major theme of recent educational research and theorising (e.g. Donald, 1992; Hunter, 1994)

Or perhaps, as Foucault suggested, a re-assertion of power: “Death is power's limit, the moment that escapes it…. This determination to die (i.e. suicide) … was one of the first astonishments of a society in which political power had assigned itself the task of administering life.” (Quoted Miller, 1994, p. 242)

In the 99 cases of death which the Royal Commission investigated, it was found that 8 persons had no formal schooling; 20 had undertaken some primary schooling education, but only 12 had completed primary school; 50 had undertaken some secondary schooling, but only 2 had completed it; and only 2 had undertaken some form of vocational education.

Nag’s study of Kerala and West Bengal emphasise the importance of political parties and trade unions as sites for education which raises political awareness (Nag, 1990:375). In the context of Indigenous Australia, it is important to ask whether political parties or unions can still perform these functions, as they most definitely did in the past; or whether new organisations and/or social movements will be needed to do this work.

The results of the review process are summarised in Boughton (1999d)

A recent study of Inuit peoples, for example, raises similar questions about the nature of their health transition
27 Komla Tsey has suggested (pers.com.) that while some basic information on resourcing of education services is readily available, e.g. the absence of secondary schooling options for remote communities (Nicholls, 1998a), more detailed regional studies are needed of the kind now being undertaken in health.

28 The study cited above by Nag discusses the relationship between literacy and political awareness and its effect on peoples willingness to demand their rights in relation to health care. He also discusses the importance of the strategy of the Kerala Communist Party which organised from the 1930s among village school teachers to help build its rural base (Nag, 1990 : 371).

29 In a study cited by Cleland (1990, p.409) comparing Denmark, Finland, England and Wales, there was found to be a decline in relative mortality risk by between 8.2% and 9.3% for each additional year of schooling.

30 ATSIC has also just published a report which uses NATSIS data to assess the impact of housing on health, and makes some mention of education (Aboriginal and Torres Strait Islander Commission. Office of Evaluation and Audit, 1999).
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Appendix 1. Some Notes on Available Data

There are many existing data sets which might be accessed by the CRCATH research program to help clarify relationships between education and health. Some of these are briefly described below.

The annual returns of Education Departments to the Commonwealth give absolute numbers of each age group by gender at each year of schooling, which are collected in the NT for example, by region and school. There has been separate statistics kept for Indigenous students. The numbers at school for a given age group in a given year can therefore be compared with census or community survey data for the number of people in that age or age range, to give a participation rate over a particular time period.

The same data is used to calculate what are called apparent retention rates for the last three years of secondary schooling. The national Year 12 retention rate for Indigenous students in 1997 was 31%, while for non-indigenous students, the figure was 73%. In the NT, the Indigenous Yr 12 retention rate was only 9.8%, and this excluded nearly half the students in high school who had not reached the level of ‘graded’ classes. These differences in average retention rates are another way to measure differences in years of schooling, between populations.

Standardised national literacy and numeracy testing is controversial, but is slowly being introduced by state and territory education systems. It provides one possible index of literacy attainment in a population of a certain age at the time of testing. In the NT, there are already literacy and numeracy test results for all children who have been in the system going back to 1985. WA also has a fairly long series of similar statistics. Individual schools in the NT have access to the results of individual students, and some may retain that data and allow access to it for a research project which they supported. Beyond this level, only regional and NT-wide statistics are available, and therefore cannot be matched to individual health records. They can however be compared with population health data. We know, for example, that the majority of children who attend school in remote communities finish with a literacy level no higher than primary Year 2-3 level (Legislative Assembly of the Northern Territory, 1996), and differences in this figure between urban and remote regions might conceivably be compared with measures of morbidity.

Some data may be available at some levels to test the ‘education-literacy-political awareness’ model suggested by Nag and many others e.g. voting behaviour, political party or trade union membership, presence of and participation levels in Aboriginal community-controlled organisations.

The NATSIS data has not been analysed in any detail in relation to the education-health link, apart from the study done by Gray for this review. It would seem an obvious priority to undertake detailed analyses of this data from the original unit record files, which can be purchased by research institutions, and are already held by some e.g. NCEPH, the Centre for Aboriginal Economic Policy Research, the Australian National University and the ABS.30