The link between primary health care and health outcomes for Aboriginal and Torres Strait Islander Australians

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THINK CHANGE

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Table of Contents

Executive Summary

Health systems and health status

Does better health care lead to better health?

- The work of Thomas McKeown in the 1970s and more recently, substantial evidence of the importance of the social determinants of health, have critically challenged the 'common-sense' idea that improved population health is simply the result of better health care.

Measuring the effect of the health system

- Studies of avoidable mortality conclude that, notwithstanding the powerful effects of the broader social determinants of health and socioeconomic factors in particular, health systems do have a significant effect on the health of populations.

- Recent studies of avoidable mortality within Australia conclude that, consistent with the patterns seen overseas, the health system within this country has contributed significantly to improving population health over the last forty years.

Does better primary health care lead to better health?

- On an international level, stronger primary health care systems at a national level are associated with better health outcomes (especially relating to infant health indicators such as low birth weight and infant mortality from 1 to 12 months of age).

- Internationally, stronger primary health care systems at a national level are associated with lower overall national health care costs.

- Evidence from overseas – principally the United States – shows a strong correlation between increased between primary health care resources and lower mortality rates, and in particular with better maternal and infant health.

- Increased primary health care resources are also shown to be able to offset some of the harmful health effects of socioeconomic disadvantage and inequality.

- Evidence of reductions in avoidable mortality for conditions susceptible to primary, secondary and tertiary intervention in Australia since 1980 suggest that primary health care has made a significant contribution to improved population health in this country.

Changes in Indigenous health status

The health of Indigenous peoples

- The health of Indigenous peoples in First World countries, measured by life expectancy, is significantly worse than that of the mainstream populations of those countries.

- Broadly speaking, New Zealand, the United States and Canada saw major health improvements for Indigenous populations up to around the 1980s, leading to an appreciable narrowing of the gap in life expectancy between Indigenous and mainstream populations. However, between the 1980s and the end of the century, a slowing or stalling of Indigenous health improvements measured by life expectancy meant that the gap failed to close significantly (Canada) or even widened (New Zealand and the United States).

- Aboriginal and Torres Strait Islander life expectancy in 1996-2001 has been officially estimated at around 60 years for men and 65 for women, with a gap to non-Indigenous life expectancies of around 17 years for both sexes. Other estimates have put the life expectancy of Australia's Indigenous people higher (at around 64 years for men and 69 years for women) and the life expectancy gap consequently lower.

- Irrespective of which figures are used, it is clear that, measured by life expectancy, Aboriginal and Torres Strait Islander people have worse health than their Indigenous counterparts overseas, with a much greater life expectancy gap to the mainstream population.

- Despite the fact that the gap in life expectancy has not narrowed appreciably, there have been some positive changes in Aboriginal and Torres Strait Islander health status that give grounds for optimism such as significant decreases in Indigenous overall mortality, infant mortality and perinatal mortality rates during the 1990s.

- Research from the Northern Territory indicates improvements in life expectancy (by 8 years for Indigenous men and 14 years for Indigenous

women) from the 1960s until 2004. Most of this was the result of substantially improved infant mortality rates.

Primary health care and Indigenous health: Overseas

- Evidence from the United States and New Zealand suggest that primary health care has contributed to narrowing the life expectancy gap between Indigenous and non-Indigenous peoples in those countries, with the Indian Health Service in particular credited with a major contribution in the US. There is also evidence that poorer access to primary health care is associated with a widening life expectancy gap.

Primary health care and Indigenous health: Australia

- Expenditure on Indigenous primary health care (as measured by funding of Aboriginal community-controlled health services and Aboriginal and Torres Strait Islander access to MBS and PBS) increased in real terms by 83% and 53% respectively between 1998-99 and 2004-05. However, the significance of such increases must be set against increased health care costs, an increasing Indigenous population, and continuing excess rates of morbidity and mortality in the Indigenous community.

- Declines in avoidable mortality rates compared with overall mortality rates for Indigenous women during the period 1991-2003 provide direct evidence of small but definite effect on Indigenous women's health status by the actions of the health system.

- Improvements in Aboriginal and Torres Strait Islander infant mortality rates are consistent with better access to primary health care services. Nevertheless, Indigenous infant mortality rates remain almost three times greater than for other Australians, and significantly worse than those for Indigenous peoples overseas.

- Changes in disease mortality patterns – including the shift from mortality due to infectious disease to mortality due to chronic conditions – have been well documented, especially in the Northern Territory, and are plausibly related to the development and actions of primary health care services.

Policy lessons from the evidence

- A lack of high-quality long-term data may contribute to the relatively modest evidence for the positive effects of primary health care at a jurisdictional level in Indigenous Australia.

- The time-lag between improvements in primary health care access and the realisation of its full benefits, particular in regard to the life-time health effects arising from good early childhood development, may also contribute to the relative weakness of the evidence in Indigenous Australia.

- However, the relatively modest evidence for a primary health care contribution to changes in life expectancy and mortality at a national or jurisdictional level is fundamentally a product of the (at best) modest health gains made by the Aboriginal and Torres Strait Islander population.

- Consistent with the international evidence, it seems that Aboriginal and Torres Strait Islander people have yet to reap the full benefits of primary health care that their Indigenous counterparts overseas have achieved. The evidence points to further and sustained investment in primary health care, along with action on the social determinants, as a crucial strategy for 'closing the gap' in life expectancy between Indigenous and non-Indigenous Australians.

- A national approach to addressing Indigenous health disadvantage is needed that involves action by all Australian Governments, including increasing spending on primary health care.

- Incremental increases in Indigenous primary health care resourcing will (at best) lead to incremental changes in health status which are highly unlikely to lead to any significant closing of the health gap between Indigenous and non-Indigenous Australians.

- A national approach to closing the health gap between Indigenous and non-Indigenous Australians should ensure that *all* Aboriginal and Torres Strait Islander communities have access to a basic suite of comprehensive primary health care services (including for chronic disease and for maternal and child health) regardless of funding streams or administrative responsibility for the health service.

Local evidence and lessons

- The following principles are associated with primary health care interventions which show success at a local level:

  1. genuine local Indigenous community engagement to maximise participation, up to and including full community control

  2. a collaborative approach to working with other service providers

3. delivery of core primary health care programs such as maternal and child health and/or chronic disease prevention, detection and management

4. evidence-based approaches adapted to local conditions

5. a multidisciplinary team approach employing local community members

6. service delivery that harmonises with local Aboriginal and Torres Strait Islander ways of life

7. adequate and secure resourcing.

1. Introduction

Closing the Gap

Since we began working on this report in December 2007, a new Government in Canberra has delivered an Apology to Australia's Indigenous Peoples.

The Prime Minister's address on 13 February 2008 to the House of Representatives, witnessed by a packed Parliamentary gallery and hundreds of thousands of people watching the broadcast live on television, was a dramatic and moving event. Few who were present or who watched the emotional scenes during and following the Apology doubted that this was an important turning point in the relationship between Indigenous and non-Indigenous Australia.

The significance of the Apology in more prosaic policy terms will develop over the months and years to come. However, part of the speech specifically committed the Australian Government to closing the gap in life expectancy between Indigenous and non-Indigenous Australians within a generation.

The specifics of how to achieve this goal will no doubt take some time to work out, and involve reviews not just of the formal literature, an evaluation and re-affirmation of what approaches have already been shown to work, and a commitment to new approaches where necessary.

We hope that this literature review will contribute to this process.

Here we will show how the international literature demonstrates that, notwithstanding the powerful effects of the social determinants of health in general and socioeconomic class in particular, primary health care has significant positive effects on the health of populations as measured by mortality and life expectancy.

We will also see how the evidence confirms the positive effect of primary health care systems on the health of Indigenous populations in other First World nations. However, in Australia (looking at the national and jurisdictional level) the evidence is less strong. We will argue that this is predominantly because Australia is yet to fully realise the health gains that primary health care is able to deliver.

Finally, we will present some local models of primary health care delivered to Aboriginal and Torres Strait Islander people, and draw from these some lessons about the place of primary health care in changing the health of Aboriginal and Torres Strait Islander communities.

We hope this information will contribute to knowledge about how to address the issue of health inequity between Indigenous and non-Indigenous Australia. However, what we have not been able to do in this review – because its shape and scope was determined before the delivery of the Apology in February 2008, indeed before the election of the new Federal Government – is to look in depth at the question of closing the life expectancy gap.

'Closing the gap' requires more than just improving the life expectancy of Australia's Indigenous peoples. Aboriginal and Torres Strait Islander life expectancy has been slowly improving for some decades, yet the gap is not significantly narrowing because the life expectancy of the mainstream population is also improving. 'Closing the gap' obviously requires improving the life expectancy of Aboriginal and Torres Strait Islander Australians at a greater rate than that of the rest of the nation.

It is our view, supported by the evidence, that primary health care is a necessary part of doing this. But is it sufficient by itself? If all Australians had equal access to appropriate primary health care services compared with their need for health care (which surely should be an important aim based on social justice principles alone), by how much would the life expectancy gap be reduced? At this point, we would need to consider and quantify the effects – immediate and over time – of a whole range of other determinants of health besides access to health care: housing, education, employment, equality and inclusion, life control and choice, to name a few.

Unfortunately, it is beyond the scope of this Review to attempt to map out in detail the differential effects over time of all the factors that determine health, including primary health care. However, what we can show, supported by the evidence, is that access to primary health care *will* lead to better health outcomes measureable by life expectancy and mortality.

Our analysis also shows that for Aboriginal and Torres Strait Islander Australians there is a significant gain yet to be made in health outcomes through the delivery of well-designed, evidence-based, properly resourced primary health care that involves the community it serves and is appropriate to its needs.

Given the nature and scale of the health problems confronting Aboriginal and Torres Strait Islander people it is also sound to conclude that this gain would contribute to closing the gap in health outcomes in Australia.

The social policy background to Indigenous health

For decades, it has been common public knowledge that the health of Aboriginal and Torres Strait Islander peoples is significantly worse than that of the country as a whole. This has generated public sympathy, but has all too often been accompanied

by the assumption that nothing really can be done about it because 'nothing ever changes' in Aboriginal health.

This assumption has been powerful and surprisingly resilient, even in the face of significant changes in the health of Aboriginal and Torres Strait Islander communities. It has exerted a subtle but constant pressure on public policy, such that governments and policy makers have needed to be able to justify the continued (or increased) funding of health services for Indigenous communities.

However, the recent Parliamentary Apology to Australia's Indigenous peoples marks a change in public attitude and an opportunity to break free of scepticism about the possibilities of genuine improvements in Aboriginal health.

Of course, for many years the research community and the Aboriginal and Torres Strait Islander health service sector (amongst others) have argued that the better provision of primary health care *will* lead to, and is already leading to, improvements in the health status of Australia's Indigenous people. From the 1980s onwards, this view has generally formed the basis for Aboriginal and Torres Strait Islander health policy, with Aboriginal community controlled primary health care services at centre stage (especially following the 1989 National Aboriginal Health Strategy) and State and Territory governments committing to improving their own primary health care strategies for Aboriginal and Torres Strait Islander people.

Nevertheless, high-level evidence for primary health care improving the health of the Aboriginal and Torres Strait Islander population within Australia has remained sparse.[1]

A significant attempt to review and summarise the evidence was the study commissioned by the Commonwealth Health Department in 2001. *Better Health Care*[2] found that the international evidence confirmed the effectiveness of primary health care in improving the health status of Indigenous peoples, and that comprehensive primary health care can improve the health of Australia's Indigenous population, provided that it is well planned, locally coordinated, supported by a competent workforce, and able to engage the local community in action for health.

Significantly, it concluded that

> *… there is a need to continue to … gather evidence on effective approaches,*

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[1] We note here while the that the delivery of 'better health outcomes' has been the focus of Aboriginal primary health care policy (and is the reason behind this report), primary health care itself has a value beyond its contribution to health gain. This is its role in the alleviation of suffering and its ability to assist people to live productive and able lives – whether or not this is measurable in terms of the usual outcomes. This principle is, it seems, broadly supported for mainstream health services, where access to a doctor (for example) is seen to be a good in itself, and where the provision of such services is not seen as conditional on demonstrating their effectiveness in terms of outcomes.

[2] Commonwealth of Australia (2001). Better Health Care: Studies in the successful delivery of primary health care services for Aboriginal and Torres Strait Islander Australians. Canberra.

in order to build on the foundations already established.[3]

Six years on, a dozen years since the transfer of Aboriginal primary health care funding responsibility to the Commonwealth Health Department, and in the light of revived optimism about positive change in Indigenous Affairs in Australia, this Review attempts to revisit the international and local evidence that primary health care can deliver results for Indigenous peoples.[4]

The organisation of this report

The question at the core of this Review is simple: what is the evidence that primary health care services have positively changed Aboriginal and Torres Strait Islander health status? However, attempting an answer to this brings into focus two logically prior questions.

- **Is there evidence that health systems in general improve the health of populations?** Common sense says that the way to better health lies through better health systems. However, Thomas McKeown's theories in the 1970s, and the powerful evidence of the importance of the social determinants of health more recently, have significantly challenged such a simple view. These theories are of particular relevance in the Aboriginal and Torres Strait Islander policy field, which has also seen tendencies to reduce 'better health' to a matter of 'better infrastructure' (for example housing, water quality and sanitation), and to see health services as irrelevant or marginal to the process of building healthier communities.

- **More particularly, is there evidence about the extent to which primary health care services contribute to any such improvements?** In particular, if there is no strong evidence to support the contention that primary health care improves 'mainstream' population health, it would be unwarranted to expect the evidence to show such a pattern in Aboriginal and Torres Strait Islander communities.

  In answering this question and throughout this report, we note the diversity of definitions of "primary health care" in the literature. The Alma Ata Declaration of 1978 describes a comprehensive model of primary health care that includes notions of participation and self-determination. This comprehensive model – upheld strongly in Australia by the Aboriginal community-controlled health services – has strong claims as an ideal or best practice model of primary health care. Nevertheless, in order to take account of the literature, which is mainly

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[3] Ibid. p 15

[4] Within the time frame specified for the preparation of this report (three months) it is, of course, not possible to reproduce a study of the length and depth of *Better Health Care.*

based on a narrower model of primary medical care, we adopt a definition of primary health care as being (still following article VI of the Alma Ata Declaration):

... the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work ... the first element of a continuing health care process.[5]

This is necessary to capture the available research literature to answer the question asked. Of course any positive results from studies using a narrower definition of primary health care will understate the population health gain possible through a more comprehensive model.

As far as we are aware there has been no comprehensive attempt in the field of primary health care policy in Australia to stand back in this way and look in the broadest manner possible at the relationship between the provision of primary health care and the health of populations. However, answering these questions is necessary to set the theoretical and evidentiary foundations from which we can looks at the more specific questions regarding Indigenous health and primary health care in Australia, as follows.

- **Is there evidence that the health of Indigenous populations, both here in Australia and overseas, has improved?** This question goes to the heart of any scepticism about the possibility of improvements in Aboriginal and Torres Strait Islander health. It also raises questions about absolute versus relative improvements in health status – for example, there may be positive changes in life expectancy for Indigenous peoples, but if these are the same or even less than improvements of mainstream life expectancy, the life expectancy gap will stay the same or widen.

- **To what extent can health services in general and primary health care services in particular be credited with such improvements?** It has become one of the truisms of Aboriginal health policy that many of the social determinants of ill health – poverty, poor education, poor housing, lack of nutrition, lack of meaningful employment – lie outside of the health sector itself. To what extent, then, are any health improvements among Indigenous peoples attributable to the social determinants, and what evidence is there for health systems and primary health care making significant contributions?

- **What particular aspects of primary health care services are effective?** The evidence is pointing more and more to certain key interventions as being the most critical for long-term improvements – for example, early childhood development, maternal health, chronic disease prevention and management, and

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[5] World Health Organization (1978) Declaration of Alma-Ata. International Conference on Primary Health Care, Alma-Ata, USSR, 6-12 September 1978. http://www.who.int/hpr/NPH/docs/declaration_almaata.pdf

social and emotional well-being. If this is the case, there is obviously a strong argument for including these as essential parts of the comprehensive primary health care model. We will consider some of the structural and organisational aspects of primary health care here – for example, the importance of local community involvement and control.

Chapter 2 will concern itself with answering the first two questions about the evidence for the effect of health systems and primary health care on the health of populations.

Chapter 3 will turn the focus to the health of Indigenous peoples both overseas and in Australia at a national or at least jurisdictional level, looking at how their health has changed and whether health systems including primary health care can be said to have contributed.

Chapter 4 will narrow the focus to a number of local case studies of primary health care services in Aboriginal and Torres Strait Islander communities, and seek to draw lessons about their effectiveness.

Methodology

There is a risk in carrying out literature reviews of this kind that they become reduced to a list of examples, often from the 'grey' literature, of those places where, for example, primary health care projects are held to have worked at a local level.

Evidence from this local level – and in particular, from Aboriginal communities and people themselves – is important as a guide to practice. However, policy-makers are often expected to back up such local-level evidence, much of which is not highly substantiated in the more narrow scientific sense, with verifiable information that can stand up in sometimes robust public policy debates.

Although we present a number of case-studies and draw some key lessons from their practice, this report has been prepared as a strategic review for policy makers of what matters in the literature, rather than as a systematic or meta-analysis of the literature. It includes material from the world of professional practice that would not necessarily be included in a systematic review and does not include all of the vast literatures in the field of Indigenous primary health care.

The literature review

We began by carrying out a systematic review of the published literature in peer-reviewed journals about the link between primary health care and health outcomes, concentrating on studies of mortality and / or life expectancy outcomes.

Our reason for limiting our review to life expectancy / mortality measures was twofold. First, with the agreement of the Office for Aboriginal and Torres Strait Islander Health, it was decided that this was necessary to reduce the amount of data to a manageable amount for this review. Second, life expectancy and mortality have the advantage of being the 'hardest' of epidemiological measures routinely collected in many countries, allowing greater comparability between different places and over time.

Nevertheless, we note the well-known limitations of using life-expectancy and mortality to measure health. In particular, we need to remember that the aim of health care is not just about preventing mortality but also about preventing and treating sickness and about improving well-being.

With this in mind, the PubMed database was searched using a series of search terms based on MeSH items listed as Major Topics. The search terms for mortality outcomes (Mortality, Mortality/trends, Life Expectancy, and Life Expectancy/trends) were combined with those that might investigate the association between primary health care and mortality (Primary Health Care, Delivery of Health Care/statistics and numerical data, Health personnel/statistics and numerical data, Community Health Services/statistics and numerical data, and Community Health Centres).

The search revealed a rich body of international evidence in the form of several hundred articles. In order to concentrate on articles of most relevance, the titles and (if available) abstracts were read to identify:

- studies of mortality trends to assess whether improved levels of primary health care provision over time are associated with increased health outcomes;

- cross-sectional comparisons of mortality which assess whether different levels of primary health care in different places are associated with differential health outcomes;

- articles that controlled for known confounders (e.g. income);

- studies from developed countries (especially Australia, New Zealand, North America and Europe);

- larger scale studies that compared mortality outcomes at either the national or jurisdictional level (e.g. USA counties or states).

These publications then formed the basis for the data for answering questions about the evidence for the effect of health systems and primary health care on the health of populations.

Once the evidentiary case for the efficacy of primary health care was examined at the broadest level, we turned the focus specifically towards the Indigenous experience, both overseas and in Australia. Two sources of data were brought together and analysed to provide this.

Literature on Indigenous specific mortality / life expectancy

The literature search described above, in our initial work plan and in discussions with the Office of Aboriginal and Torres Strait Islander Health, revealed very few studies directly focusing on Indigenous peoples.

A further examination of the literature was therefore then made specifically on the mortality / life expectancy patterns of Indigenous people in general and Aboriginal and Torres Strait Islander people in particular. These articles formed the basis of answering – on a national or at least jurisdictional level – the key questions about the shifting status of mortality / life expectancy in these populations.

Note that the modified 'Delphi Method' described below also yielded a number of research articles relevant to this section.

Capturing expert opinion, community experience and the 'grey literature'

Simultaneously, we embarked on a process to capture the 'grey' literature and seek the views of key stakeholders in the Aboriginal primary health care field, using a modified version of the 'Delphi Method'.

The Delphi Method is based on a structured process for collecting and distilling knowledge by means of a series of questions to leaders and practitioners in a field. The technique can be summarised in six steps:

1. Select a diverse panel of experts to participate in the exercise.

2. Develop a questionnaire – in our case the questionnaire was organised around the following key queries:

   - Are there published studies and/or write ups in the grey literature that illustrate the effect in Australia of primary health care on the health of Aboriginal and Torres Strait Islander communities?

   - Do you have data / program / descriptive / anecdotal work from your own services that demonstrate an effect?

   - Who else do you suggest we speak to in order to understand the effects of primary health care on the health of Aboriginal and Torres Strait Islander communities?

3. Distribute the questionnaire to the panellists.

4. Follow up the information given to the panellists with an interview.

5. Distribute the questionnaire any further informants nominated by the original panel.

6. Follow up the responses and conclude the panel round.

See Appendices for details of the panellists and the questionnaire.

We also contacted the national and State / Territory representatives of the Aboriginal community controlled health services (National Aboriginal Community Controlled Health Organisation – NACCHO – and affiliates) to seek their views and any data they might have.

The Review Team

This review was commissioned by the Office for Aboriginal and Torres Strait Islander Health from Robert Griew Consulting (RGC). The team to carry out the Review were:

- **Associate Professor Robert Griew**, Managing Director of RGC;

- **Dr David Thomas**, Team Leader Chronic Disease Stream, Menzies School of Health Research, Darwin;

- **Mr Edward Tilton**, Senior Consultant, RGC;

- **Mr Nick Cox**, Research Associate, RGC.

Robert Griew led the Review Team. David Thomas and Edward Tilton completed the literature review. Edward Tilton, Nick Cox and Robert Griew conducted the interviews with experts and contacted community organisations. The team met regularly to discuss the review's findings and their policy implications. All team members reviewed and are responsible for the final report.

Acknowledgements

Although the primary source informing this report was the published literature, the review team also sought specific views from experienced professionals and representative organisations in the Aboriginal health field. They are listed in Appendix 1, and we gratefully acknowledge their contribution.

We would also like to acknowledge the constructive comments from Australian Government officials and in particular from the Office for Aboriginal and Torres Strait Islander Health's Mr Peter McInnes and Dr Joy Eshpeter.

Professor Ian Anderson of the Onemda VicHealth Koori Health Unit at the Centre for Health and Society (School of Population Health, University of Melbourne) and the National Centre for Aboriginal and Torres Strait Islander Statistics (NCATSIS) at the Australian Bureau of Statistics also provided lucid comments on a final draft of the report, for which we are most grateful.

Naturally, the report remains the product of the review team and does not necessarily represent the views of those who assisted us or of the Australian Government.

2. Health systems and health status

This report attempts to examine the health outcomes that can be attributed to the provision of primary health care in Aboriginal and Torres Strait Islander communities. However, strictly speaking, there are two prior questions.

First, is there evidence that health systems in general improve the health of populations?

And if so, *second*, is there evidence about the extent to which primary health care services contribute to such improvements?

These questions are necessary to set the foundations upon which the inquiry into Indigenous health and primary health care is Australia can be built. After all, if there is no strong international evidence to support the contention that primary health care (or indeed, health care systems as a whole) improve population health, it would be unwarranted to expect the evidence to show such a pattern in Aboriginal and Torres Strait Islander communities.

Therefore, the purpose of this chapter is to stand back and look in the broadest manner possible at the relationship between the provision of health care and the health of populations.

In doing so, we will be looking at some of the substantial literature that looks at this relationship. We will be using the 'hardest' measures of health status, that is, mortality rates and / or life expectancy. This is not because these measures are necessarily the best indication of the health of a population – they have their limitations – but as the most rigorous measure available we assume that changes in health systems or society that produce changes in mortality and life expectancy of populations are changing their health in a significant way.

We will also briefly examine a number of subsidiary questions, such whether overall national health system spending is related to health, and the relationship between the number of health care providers (and in particular primary health care providers) and the health of populations.

We will also introduce in this Chapter the important concept of 'avoidable' mortality as well as briefly examining the critical issue of the social determinants of health.

Does better health care lead to better health?

To the common sense view, the proposition that better health is the result of better health care – more spending on health systems, more health care workers, more

advanced drugs and treatments – is unarguable. It is simply assumed to be true, and a considerable amount of public and political discourse in Australia is based on the more-or-less uncritical adoption of this view.

However, there have been serious challenges to this apparently obvious assumption.

The McKeown Hypothesis and the Social Determinants of Health

Originally published in 1976, Professor Thomas McKeown's influential book *The role of medicine – dream, mirage or nemesis?*[6] put forward a formidable and convincing argument to the effect that health care itself made only a minor contribution to the massive improvements in population health between the mid-nineteenth and mid-twentieth century in the developed world.

McKeown's argument was based on the fact that between roughly 1850 and 1970, the greatest decreases in mortality and advances in life expectancy for particular diseases occurred *before* the introduction of improved medical treatments for those conditions. McKeown argued that these advances were actually the result of better nutrition associated with rising living standards. He even rejected any significant role for public health measures such as improved hygiene and sanitation, again because they only became effective after the decline in mortality was well underway.[7]

At the time of their first publication, McKeown's theories flew in the face of accepted wisdom which saw scientific advance and better medicine as the principal drivers of better health. His controversial hypothesis helped revolutionise how the health of populations was viewed.

In the last fifteen years or so, a whole new theory and field of research has grown up that, like McKeown's hypothesis, locates the major factors determining the health of populations outside the health care system, but which goes much further in exploring and documenting these factors.

While explanations of illness cast in terms of exposure to certain individual risk-factors (for example viruses, bacteria, smoking, alcohol misuse, or being overweight) are a powerful way of understanding disease and illness, considerable evidence has now emerged that in addition to these individual causes lie other deeper causative factors. These are, of course, the social determinants of health.[8]

According to the theory of the social determinants of health – a theory now powerfully supported by numerous studies and substantial evidence reviewed by the World

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[6] McKeown, T. (1979). The role of medicine - dream, mirage or nemesis? Oxford, Blackwell.

[7] Mackenbach, J. P. (1996). "The contribution of medical care to mortality decline: McKeown revisited." J Clin Epidemiol 49(11): 1207-13, Nolte, E. and M. McKee (2004). Does healthcare save lives? Avoidable mortality revisited. London, The Nuffield Trust.

[8] For a concise examination of the social determinants of health, see Wilkinson, R. and M. Marmot (1998). Social Determinants of Health: the Solid Facts, World Health Organization Regional Office for Europe.

Health Organization – a person's social and economic position in society, their early life experiences, their exposure to stress, their educational attainment, their employment status, their exclusion from participation in society, and transport, all exert a powerful influence on their health throughout life.[9]

In Australia, there have been a number of studies over the past two decades that have demonstrated the link between socioeconomic status and mortality, and the literature on the social determinants of health of Australia's Indigenous population is growing.[10]

Implications for health policy

In locating the major drivers of health and ill health outside of the health system – whether in living standards or the broader social determinants of health – these theories and research findings have presented a major challenge to health systems and the health professions.

Simply put, if poor health is largely driven by the issues of poverty, nutrition, education, life control, racism, housing, transport, addiction, employment and all the other social determinants, what role does the health system have in creating better health?

Health service providers and policy makers have had to deal with two common reactions to this challenge. On the one hand, all too often the reaction is to acknowledge the importance of these 'upstream' factors that so powerfully influence health, but then consign them to the background, as issues that are too hard to address and outside the responsibility of the health system.[11]

Alternatively, while neither McKeown nor the researchers and theorists on the social determinants of health claim that health care has *no* effect on the health of populations, there have been times when their implicit or explicit critiques of the 'medical model' have led some to abandon the belief that the health system has any effect on the health of populations at all.[12]

While neither of these reactions may be very useful or strategic, the question remains about the extent to which health services contribute to population health. Fortunately

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[9] World Health Organization (2003). Social determinants of Health: The Solid Facts, 2nd edition, Marmot, M and Wilkinson, R (eds.), International Centre for Health and Safety, Denmark.

[10] See for example, Booth, A. and Carroll, N. (2005) The health status of Indigenous and non-Indigenous Australians, Discussion Paper No. 486, Centre for Economic Policy Research, ANU, Canberra, and their estimate that income, employment status and education accounted for between one-third and one-half of the gap in health status between Indigenous and non-Indigenous Australia.

[11] Griew, R. and T. Weeramanthri (2003). Investing in Prevention and Public Health in Northern Australia. UK Australia Seminar: Federalism, Financing and Public Health. Canberra, The Nuffield Trust and Australian Government.

[12] We note, for example, how following the 1989 National Aboriginal Health Strategy in Australia, there was a powerful emphasis in national public policy on the need for better infrastructure – especially improved housing, water quality and sanitation – as the way to make progress in Aboriginal health, almost to the detriment of the provision of health services at all. This is of course was very different to the intent of the Strategy.

there is a substantial international literature that deals with this point, and it is to this literature that we turn now.

> The work of Thomas McKeown in the 1970s and more recently, substantial evidence of the importance of the social determinants of health, have critically challenged the 'common-sense' idea that improved population health is simply the result of better health care.

Updating McKeown – the contemporary landscape

Thirty years on, most workers in the field would agree in broad terms with McKeown's hypothesis. Nevertheless, his theory has been refined and updated, and most theories advanced in recent years see the provision of health care as at least a part of the explanation for better health. For example, in his highly influential book, *Development as Freedom*, Amartya Sen suggests that increases in life expectancy in 20th century Britain were particularly strong in those periods marked by a strong emphasis on social sharing, and the public provision of health care and nutritional support.[13]

It has also been convincingly argued that medicine, as well as having a greater *direct* effect than McKeown's analysis gave credit for, also had an *indirect* beneficial effect on population health. This was felt through the actions of doctors and others trained in or influenced by medicine, advocating successfully for the development of public health measures and the adoption of healthier behaviours.[14]

Last, and of particular relevance to the contemporary situation, McKeown's data only covered the period up to the 1960s. His analysis was based on a particular social, epidmiological and historical context, and the time since then has been marked by significant advances in health care treatments, technology and organisation. This has included, in particular, the development of safe and effective treatments for chronic disease, changes in the organisation of health care in developed countries (including, for example, the adoption of evidence-based medicine), the development of organised approaches to public health and the development of comprehensive primary health care.

Accordingly, there is now a general consensus that health care systems' contribution to population health is far from negligible.

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[13] Sen, A. (1999). <u>Development as Freedom</u>. New York, Alfred Knopf.

[14] Mackenbach, J. P. (1996). "The contribution of medical care to mortality decline: McKeown revisited." <u>J Clin Epidemiol</u> 49(11): 1207-13.

Measuring the effect of the health system

Researchers have attempted to refine and elucidate the link between health systems and health status in a number of ways – for example, by relating national health status to health system spending or numbers of health professionals per capita.

A number of studies discovered by the literature search attempted to gauge the effect of health systems on the health of national populations by cross-national studies (mainly of developing countries) relating health status to national health spending or numbers of health professionals per capita.

Making such comparisons across national borders is fraught with methodological problems, most significantly the diverse nature of how health systems are organised and the confounding effects of numerous other determinants of health. It is not surprising, then, that the evidence is mixed.

National health spending

Many international studies have *not* been able to demonstrate a statistically robust link between national health spending and health outcomes. For example, one extensive cross-country study found that considerably less than 1% of the observed differences in infant and under-five mortality between countries could be explained by variation in national health care spending. Instead, the variation could be much better explained by the countries' income per capita, inequality of income distribution, extent of female education, level of ethnic fragmentation, and predominant religion.[15] Nevertheless, as one study concluded:

> *… researchers' inability to find a systematic relationship between health care spending and health outcomes should not be considered evidence that such a relationship does not exist.[16]*

This particular study overcame some of the methodological problems of cross-country studies by examining health care spending within one country over a number of years and controlling for a detailed list of confounders including lifestyle factors. It found a small but statistically significant association between reduced health care spending and increased death rates among children less than a year old, specifically that a 10% reduction in health care spending led to an increase in infant mortality of 0.5% for boys and 0.4% for girls.

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[15] Filmer, D. and L. Pritchett (1999). "The impact of public spending on health: does money matter?" <u>Soc Sci Med</u> 49(10): 1309-23.

[16] Cremieux, P. Y., P. Ouellette, et al. (1999). "Health care spending as determinants of health outcomes." <u>Health Econ</u> 8(7): 627-39. p628

Density of health professionals

Another measure used in the literature to investigate the extent to which health systems impact on health has been the density of health professionals, that is the number of doctors, nurse and providers serving a given number of people in a population.

Here too, however, the evidence is not clear cut. In some cases there is, as we would expect, a positive association between a higher density of health professionals and better health; in others no statistically significant association has been found.[17]

Others have even found an alarming negative correlation: that the number of doctors in an area is associated with high mortality rates even when income is controlled for (the so-called 'doctor-death correlation'). Fortunately, this is assumed to be a construct of data and statistical analysis rather than a 'real' association linked by cause and effect; a recent paper proposes an interesting explanation for this effect in the United States and Japan based on migration and / or social exclusion and racism.[18]

However, the most comprehensive and methodologically sound attempt to unravel this issue looks at a large number of (mainly) developing countries, and finds that doctors per capita *are* associated significantly with lower maternal mortality rates, lower infant mortality rates and lower under-5s mortality rates – with the greatest effect on maternal mortality rates.[19] However, this study failed to find a significant association between nurse density and the above measures, a result that has been duplicated in other studies.[20] Once again, this problem of the 'invisibility' of nurses is held to be a construct of limited data, and cannot be taken to mean that nurses are irrelevant to the delivery of health care.

Avoidable mortality[21]

If national health spending and numbers of health professionals provide only mixed evidence of the effect of health systems, fortunately the concept of 'avoidable

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[17] Anand, S. and T. Barnighausen (2004). "Human resources and health outcomes: cross-country econometric study." Lancet 364(9445): 1603-9.

[18] Young, F. W. (2001). "An explanation of the persistent doctor-mortality association." J Epidemiol Community Health 55(2): 80-4. Note that controlling for these factors still did not result in a positive association between doctor numbers and decreases in mortality, a fact which the authors put down to the relative weakness of health care to produce changes in population health compared to structural and economic factors.

[19] Anand, S. and T. Barnighausen (2004). "Human resources and health outcomes: cross-country econometric study." Lancet 364(9445): 1603-9.

[20] Robinson, J. and H. Wharrad (2000). "Invisible nursing: exploring health outcomes at a global level. Relationships between infant and under-5 mortality rates and the distribution of health professionals, GNP per capita, and female literacy." J Adv Nurs 32(1): 28-40, Robinson, J. J. and H. Wharrad (2001). "The relationship between attendance at birth and maternal mortality rates: an exploration of United Nations' data sets including the ratios of physicians and nurses to population, GNP per capita and female literacy." J Adv Nurs 34(4): 445-55.

[21] This section owes much to a recent comprehensive review of the concept of avoidable mortality which is essential reading for those wishing to understand of this important concept: Nolte, E. and M. McKee (2004). Does healthcare save lives? Avoidable mortality revisited. London, The Nuffield Trust.

mortality' provides more robust evidence about the ability of health care systems – and primary health care in particular – to influence the health of populations.

The concept of avoidable mortality had its origin over thirty years ago in the work of the United States Working Group on Preventable and Manageable Diseases chaired by Dr David Rutstein. Primarily concerned with improving the quality of health care through an analysis of 'unnecessary, untimely deaths', the group proposed a list of conditions from which death should not occur if proper health care was available.

These conditions were those where mortality could be avoided through the actions of the health system in its broadest sense, including through medical personnel and institutions, governments, other agencies and even the individual themselves. Physicians were seen as having a crucial role, not just in providing direct medical care, but also indirectly through advocacy and leadership on health issues and as a conduit of health information to the community.[22]

During the 1980s the concept – now labelled 'avoidable mortality' and widely accepted as meaning *those deaths that should not occur in the presence of effective and timely health care* – began to be used to analyse the overall effectiveness of health systems.[23]

However, as the use of the measure spread through a series of national studies, so did the methodological diversity with which it has been applied.

No universally agreed upon list of conditions for which mortality is considered avoidable has been fixed upon, although it has became generally agreed to include such diseases as, tuberculosis, childhood measles, some malignant cancers such as breast cancer and skin cancer, chronic rheumatic heart disease, hypertensive disease, cerebrovascular disease, influenza and pneumonia, maternal death, and a substantial proportion of ischaemic heart disease.[24]

It is also generally agreed that it includes conditions where mortality is preventable or treatable through primary care, hospital care and public health programs (for example, screening programs or immunisation) be included.[25]

However, differences remain, even around such major methodological issues as the inclusion of conditions where the avoidance of mortality is essentially a matter of primary prevention – and in particular mortality from lung cancer, liver cirrhosis and

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[22] Rutstein, D. D., W. Berenberg, et al. (1976). "Measuring the quality of medical care. A clinical method." N Engl J Med 294(11): 582-588.

[23] Albert, X., A. Bayo, et al. (1996). "The effectiveness of health systems in influencing avoidable mortality: a study in Valencia, Spain, 1975-90." J Epidemiol Community Health 50(3): 320-5, Holland, W. W. (2003). "Commentary: should we not go further than descriptions of avoidable mortality?" Int J Epidemiol 32(3): 447-8.

[24] Nolte, E. and M. McKee (2003). "Measuring the health of nations: analysis of mortality amenable to health care." BMJ 327(7424): 1129.

[25] Nolte, E. and M. McKee (2004). Does healthcare save lives? Avoidable mortality revisited. London, The Nuffield Trust.

from motor vehicle accidents, each with their respectively strong associations with the use of tobacco, alcohol, and road safety. These causes of mortality are generally responsive to public health actions concerned with prevention, rather than to clinical intervention at the individual level. Some studies include these as 'avoidable' deaths, others do not, with even different editions of the *European Community Atlas of 'Avoidable Death'* taking different approaches.[26]

Recent research has focused on differentiating more clearly between avoidable causes of mortality that are susceptible to currently available health care technologies (often called 'amenable' mortality) and avoidable causes of mortality which are susceptible to interventions that prevent the condition or disease from occurring in the first place (often called 'preventable mortality').[27]

We will return to these distinctions later; in the meantime, let us turn to the overall evidence about avoidable mortality and what it can tell us about the effect health systems in general might have on the health of populations.

What avoidable mortality tells us about the effect of health systems

The concept of avoidable mortality has allowed researchers to investigate from a sound base the effect, or lack of effect, that health systems exert on the health of populations.

Most developed countries – with a few exceptions[28] – have been showing a fall in overall mortality rates (due to both avoidable and non-avoidable conditions) over the last few decades. Following McKeown and the now universally accepted theory of the social determinants of health, this fall in the 'background' mortality rate can be attributed to rising living standards, better nutrition, improved education, better housing, reduced poverty, increased control over life choices, etc.

To see whether health care also makes a contribution, researchers have looked at the differing changes over time in mortality rates for avoidable and non-avoidable conditions. They assume that if the effectiveness of health care remained constant, mortality from both avoidable and non-avoidable conditions would change at the same 'background' rate, as determined primarily by factors external to the health system.

In fact, what researchers find consistently is that mortality from avoidable conditions has been declining at a faster rate than that for non-avoidable conditions. They

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[26] Ibid. p 25-26.

[27] Ibid.; for a recent Australian exposition on this point, see Page, A., Tobias, M., Glover, J., Wright, C., Hetzel, D., and Fisher, E. (2006) Australian and New Zealand Atlas of Avoidable Mortality. Adelaide, PHIDU, University of Adelaide.

[28] For example, in Russia during the 1990s. See Andreev, E. M., E. Nolte, et al. (2003). "The evolving pattern of avoidable mortality in Russia." Int J Epidemiol 32(3): 437-46.

therefore conclude that health care has contributed to at least part of this 'extra' decline.[29]

In particular, Nolte and McKee's extensive review of empirical studies of avoidable mortality[30] finds a consistent pattern whereby mortality from 'avoidable' conditions decrease more rapidly than mortality for other causes; they conclude that while McKeown was correct in saying that curative medicine was a minor contributor to improvements in the health of nations up until the mid-twentieth century, since then it has played a more significant role.

In fact they describe a general pattern for the developed world whereby health care in the 1980s had a significant effect on reducing mortality rates from avoidable conditions, mainly through reductions in infant mortality, though to a lesser extent in middle-aged mortality.

(Interestingly, by the 1990s the reduction in mortality due to the effects of health were declining in importance, largely due to the fact that infant mortality had already been reduced to very low rates).[31]

Scale of the effect of health systems

A number of methodological problems make generalising about the scale of the effect of health systems difficult, in particular the lack of comparability between studies due to their focus on different countries over different periods. There are also diverse definitions of 'avoidable' / 'amenable' conditions, although generally studies use 'amenable' mortality as a measure, that is including those avoidable conditions susceptible to secondary and tertiary intervention, but excluding those conditions susceptible only to 'primary prevention' measures such as healthy public policy which lie outside the direct control of the health system.

It is also important to note that low socioeconomic status (including poverty and lack of access to employment) have, not unexpectedly, a strong association with higher levels of avoidable mortality.[32]

Despite these limitations, some authors have been prepared to conclude that clinical services (including preventive services as well as treatment) can be credited with

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[29] Korda, R. and J. Butler (2004). The Impact of Health Care on Mortality: Time Trends in Avoidable Mortality in Australia 1968-2001. Canberra, National Centre for Epidemiology and Population Health, Nolte, E. and M. McKee (2004). Does healthcare save lives? Avoidable mortality revisited. London, The Nuffield Trust.

[30] Nolte, E. and M. McKee (2004). Does healthcare save lives? Avoidable mortality revisited. London, The Nuffield Trust. p 48

[31] Ibid. p 91

[32] Ibid. p 36

approximately five of the thirty years of increase in life expectancy in the western world since 1950.[33]

More cautious approaches note the consistently greater decline in avoidable mortality compared to non-avoidable mortality, and are only prepared to conclude that at least part of this decline is due to improvements in health care.[34]

> Studies of avoidable mortality conclude that, notwithstanding the powerful effects of the broader social determinants of health and socioeconomic factors in particular, health systems do have a significant effect on the health of populations.

Avoidable Mortality in Australia

While this approach has been common in overseas analyses, particularly in Europe and the United States for some time, there is comparatively little published literature in Australia using the concept of avoidable mortality.

However, the last few years have seen some studies[35] published which have confirmed the same pattern in Australia as that found so consistently overseas. These show that between 1968 and 2001, avoidable death rates fell by around 70% while non-avoidable rates fell by about 34%, allowing the conclusion that:

> *While the observed declines in avoidable mortality rates may also reflect changes in other factors that influence mortality such as environment and socioeconomic conditions, they are consistent with, and suggestive of, the health care system being an important determinant of health improvements in Australia in recent decades.[36]*

Also important was the inclusion of avoidable mortality as one of the National Health Sector Performance Indicators (NHSPIs).[37] These show that from 1980 to 2001 avoidable mortality declined steadily by a total of 55% for males and 48% for females. In contrast unavoidable mortality rates fell 22% and 17% respectively.

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[33] Bunker, J. P., H. S. Frazier, et al. (1995). The role of medical care in determining health: creating an inventory of benefits. Society and Health. B. C. Amick, S. Levine, A. R. Tarlov and D. C. Walsh. New York, Oxford University Press.

[34] Nolte, E. and M. McKee (2004). Does healthcare save lives? Avoidable mortality revisited. London, The Nuffield Trust.

[35] Page, A., Tobias, M., Glover, J., Wright, C., Hetzel, D., and Fisher, E. (2006) Australian and New Zealand Atlas of Avoidable Mortality. Adelaide, PHIDU, University of Adelaide; Korda, R. and J. Butler (2004). The Impact of Health Care on Mortality: Time Trends in Avoidable Mortality in Australia 1968-2001. Canberra, National Centre for Epidemiology and Population Health, Korda, R. J. and J. R. Butler (2006). "Effect of healthcare on mortality: trends in avoidable mortality in Australia and comparisons with Western Europe." Public Health **120**(2): 95-105.

[36] Korda, R. and J. Butler (2004). The Impact of Health Care on Mortality: Time Trends in Avoidable Mortality in Australia 1968-2001. Canberra, National Centre for Epidemiology and Population Health. p 5.

[37] National Health Performance Committee (2004). National report on health sector performance indicators 2003. Canberra, Australian Institute of Health and Welfare.

Similar results for the period 1987 to 2001 have also been documented,[38] confirming that the health care system is responsible for at least part of this improvement. Importantly – especially given the large effect of social determinants of health on mortality patterns – this latest extensive study also documents a clear gradient in avoidable mortality between socioeconomic groups: those in the most disadvantaged areas socioeconomically speaking had age standardised death rates from avoidable conditions over 60% higher than those in the most advantaged areas.

This suggests not just that health care itself makes a significant difference to health, but also that access to and effectiveness of health care are strongly associated with broader patterns of poverty and disadvantage – a point that has been tellingly made in other publications.[39]

> Recent studies of avoidable mortality within Australia conclude that, consistent with the patterns seen overseas, the health system within this country has contributed significantly to improving population health over the last forty years.

Does better primary health care lead to better health?

We have now seen that, using the concept of avoidable mortality, the literature demonstrates that notwithstanding the powerful effects of socioeconomic class, poverty, and other social determinants, health care can and does have a significant effect on the health of populations.

We turn now to the key question for this report: is there evidence from the international literature regarding the effectiveness of primary health care in particular in improving population health? We find that there are three relevant sources of information in the literature.

- a major cross-country study on the effect of the strength of primary health systems on health status;

- a number of studies looking at the association of health status with primary health care resources, mainly from the United States and using a variety of health measures;

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[38] Page, A., Tobias, M., Glover, J., Wright, C., Hetzel, D., and Fisher, E. (2006) Australian and New Zealand Atlas of Avoidable Mortality. Adelaide, PHIDU, University of Adelaide.

[39] Korda, R. J. and J. R. Butler (2006). "Effect of healthcare on mortality: trends in avoidable mortality in Australia and comparisons with Western Europe." Public Health 120(2): 95-105, Korda, R. J., J. R. Butler, et al. (2007). "Differential impacts of health care in Australia: trend analysis of socioeconomic inequalities in avoidable mortality." Int J Epidemiol 36(1): 157-65.

- examinations of avoidable mortality which have looked in more detail at the concept by attempting to determine the effect of the different levels of health care intervention on avoidable mortality.

Primary health care systems: a cross-country study

Comparing the performance of health care systems between countries is beset with methodological difficulties – largely to do with comparability of data and the diverse nature of the health systems themselves – such that demonstrating evidentially valid associations can be frustratingly difficult.

However, a major study by key researchers based at John Hopkins University[40], looks at thirteen industrialised countries, including Australia, to determine whether the strength of the primary health care system is related to a country's overall health status and it's health care costs.

The analysis begins by rating the strength of primary health care systems of each of the countries against a wide range of variables, relating either to health system policy (for example, financing arrangements, requirements for cost-sharing by patients) or to good primary care practice (for example comprehensiveness, coordination, family-centeredness). The study then aggregates these to come up with an overall classification of whether each country has a low, intermediate, or high strength primary care system. (Australia falls into upper end of the group of countries with intermediate strength primary health care systems).

According to this study, it appears that the strength of a primary health care system is significantly associated with a number of important health measures, and in particular that:

- stronger primary health care is significantly related to lowered mortality of infants from 1 to 12 months of age;

- stronger primary health care is inversely related (though not significantly) to low birth weight, that is, high levels of primary care are associated with reduced rates of low birth weight;

- weaker primary health care is also associated with poorer results in regard to years of potential life lost; and

- stronger primary health care is associated with lower overall national health care costs.

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[40] Starfield, B. and L. Shi (2002). "Policy relevant determinants of health: an international perspective." Health Policy **60**(3): 201-218.

Interestingly, countries with intermediate strength primary care systems generally have overall levels of health comparable with those with strong primary care, except for those indicators pertaining to early life where primary care clearly has an impact in improved child health.

However, those countries with only intermediate strength primary care outperformed those with high levels of primary care when it came to life expectancy from middle age onward, perhaps because generally the intermediate primary health care group have higher overall health expenditures, leading the authors to conclude that

> *A certain level of health care expenditure may be required to achieve overall good health levels, even in the presence of strong primary care infrastructures.*[41]

On an international level, stronger primary health care systems at a national level are associated with better health outcomes (especially relating to infant health indicators such as low birth weight and infant mortality from 1 to 12 months of age).

Internationally, stronger primary health care systems at a national level are associated with lower overall national health care costs.

Primary health care resources and health

A number of studies have looked within nations – either geographically or over time or both – to see whether there is an association between presumed primary health care resources and health care outcomes.

The most extensive of these are again associated with the John Hopkins team, and comprise an exhaustive analysis of over 3,000 United States counties from 1985-1995, with rigorous attempts to control for confounding variables.

These studies[42] measure primary health care resources by the number of primary care physicians (specifically doctors in family care, internal medicine and paediatrics) per capita. Obviously this can only be a proxy measure of better access to primary health care, and significantly it does not measure the presence of other primary health care workers – though in this case, the effect should be to underestimate the effect of primary health care. Nor, of course, does it measure other factors that may

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[41] Ibid. p201

[42] Shi, L. and B. Starfield (2001). "The effect of primary care physician supply and income inequality on mortality among blacks and whites in US metropolitan areas." Am J Public Health **91**(8): 1246-50, Shi, L., J. Macinko, et al. (2003). "The relationship between primary care, income inequality, and mortality in US States, 1980-1995." J Am Board Fam Pract **16**(5): 412-22, Shi, L., J. Macinko, et al. (2004). "Primary care, infant mortality, and low birth weight in the states of the USA." J Epidemiol Community Health **58**(5): 374-80, Shi, L., J. Macinko, et al. (2005). "Primary care, social inequalities, and all-cause, heart disease, and cancer mortality in US counties, 1990." Am J Public Health **95**(4): 674-80, Shi, L., J. Macinko, et al. (2005). "Primary care, race, and mortality in US states." Social Science & Medicine **61**: 65-75.

affect the outcomes from primary health care, such as quality or models of care.

The results of these studies are extensive and sometimes complex, investigating not just associations between primary health care resources and mortality, but also the effect of socioeconomic variables, such as inequality in income, and race. Some of the key results include:

- increased primary care resources are associated with lower mortality rates (with an increase of one doctor per 10,000 population associated with a reduction in the mortality rate of 14.4 deaths per 100,000);[43]

- increased primary care resources are associated with better child and maternal health (with an increase of one primary care doctor per 10,000 population associated with a 2.5% reduction in the infant mortality rate and a 3.2% reduction in low birth weight;[44]

- increased primary health care resources are consistently associated with lower rates of mortality from heart disease and cancer;[45]

- primary health care's association with lower mortality is consistent over time.[46]

Important though these figures are, of equal interest is the relationship between primary health care and the social determinants of health, with the reduction in mortality in the presence of increased primary health care resources partially mediating the association between income inequality and mortality.[47] The authors go on to conclude that areas with high inequality benefit more from the increased presence of primary care resources than those with low inequality. [48]

Throughout, the influence of socioeconomic variables – including income inequality – was powerful; but the influence of primary health resources to address its effects was not negligible, leading the authors to conclude:

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[43] Shi, L., J. Macinko, et al. (2005). "Primary care, race, and mortality in US states." Social Science & Medicine **61**: 65-75.

[44] Shi, L., J. Macinko, et al. (2004). "Primary care, infant mortality, and low birth weight in the states of the USA." J Epidemiol Community Health 58(5): 374-80.

[45] Shi, L., J. Macinko, et al. (2005). "Primary care, social inequalities, and all-cause, heart disease, and cancer mortality in US counties, 1990." Am J Public Health **95**(4): 674-80.

[46] Shi, L., J. Macinko, et al. (2003). "The relationship between primary care, income inequality, and mortality in US States, 1980-1995." J Am Board Fam Pract **16**(5): 412-22.

[47] Shi, L., J. Macinko, et al. (2005). "Primary care, race, and mortality in US states." Social Science & Medicine **61**: 65-75.

[48] Ibid.

> *From a policy perspective, improvement in population health is likely to require a multi-pronged approach that addresses sociodemographic determinants of health as well as strengthening primary care.*[49]

This series of studies represents the most comprehensive investigation of the link between the availability of primary health care resources and population health. However, other studies have found a similar relationship both in the United States[50] and in Canada.[51]

It should be noted, however, that some studies have not been able to demonstrate a statistically significant association between increased primary health care resources and reduced mortality. They have instead found that issues such as race, education and unemployment better explained health differences[52], or that the risks of urban living outweighs any correlation between health service access and mortality[53], or even that it is the model of care that predicts whether there is an effect on mortality (private practice being associated with lowered mortality, public employment of physicians having no such association).[54]

Nevertheless, the weight of evidence is clearly that increased primary health care resources (measured by numbers of primary care practitioners) has a positive effect on the health of populations.

> Evidence from overseas – principally the United States – shows a strong correlation between increased primary health care resources and lower mortality rates, and in particular with better maternal and infant health.
>
> Increased primary health care resources are also shown to be able to offset some of the harmful health effects of socioeconomic disadvantage and inequality.

Primary health care and avoidable mortality

Before ending this chapter, however, it is worth returning to the concept of avoidable mortality, which may itself provide evidence of the effectiveness or otherwise of primary health care on improving population health.

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[49] Ibid.

[50] Farmer, F. L., C. S. Stokes, et al. (1991). "Poverty, primary care and age-specific mortality." J Rural Health **7**(2): 153-69.

[51] Cremieux, P. Y., P. Ouellette, et al. (1999). "Health care spending as determinants of health outcomes." Health Econ **8**(7): 627-39.

[52] Mansfield, C. J., J. L. Wilson, et al. (1999). "Premature mortality in the United States: the roles of geographic area, socioeconomic status, household type, and availability of medical care." Am J Public Health **89**(6): 893-8.

[53] Suarez-Varela, M. M., A. Llopis Gonzalez, et al. (1996). "Variations in avoidable mortality in relation to health care resources and urbanization level." J Environ Pathol Toxicol Oncol 15(2-4): 149-54.

[54] Aakvik, A. and T. H. Holmas (2006). "Access to primary health care and health outcomes: the relationships between GP characteristics and mortality rates." J Health Econ 25(6): 1139-53.

Recently, there have been attempts to use the concept of avoidable mortality to focus not just on the overall effects a health system might be having on the health of a population, but on which areas of the healthcare system might be having that effect.

For example, a study comparing changes in avoidable mortality in the United States and Canada divided the avoidable mortality conditions into those upon which primary health care and/or public health has the greatest impact (for example, asthma, cervical cancer, hypertension and cerebrovascular disease, tuberculosis and maternal mortality) and those most often treated in hospital (for example, Hodgkin disease, appendicitis, cholecystitis, abdominal hernia, peptic ulcer). They concluded that the greater decline in mortality in Canada from causes amenable to primary health care might be traceable to a greater focus in that country on primary care and / or the provision of free health services at the point of use.[55]

More systematic attempts have been made to differentiate 'avoidable' causes into those:

1. *Avoidable through primary interventions* (prevention) by reducing the incidence of disease through action on lifestyle factors such as smoking and alcohol consumption or on legal and societal measures such as traffic safety or crime reduction;

2. *Avoidable through secondary interventions* (early detection and management) including through screening programs;

3. *Avoidable through tertiary intervention* (treatment) largely requiring medical / surgical intervention but also including immunisation.[56]

Examining the changes in avoidable mortality rates for the conditions in each of these three groups can indicate how the different levels of intervention are implicated in health improvements.

It is important to recall at this point the diversity of approaches to, and ongoing evolution, of the concept of avoidable mortality. The recent extensive study of avoidable mortality in Australia and New Zealand[57] did not disaggregate avoidable mortality in this way as it was felt to be too reliant on expert judgment. As we have noted previously, this is a common area of methodological concern and debate in the many studies that use the concept of avoidable mortality.

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[55] Manuel, D. G. and Y. Mao (2002). "Avoidable mortality in the United States and Canada, 1980-1996." Am J Public Health 92(9): 1481-4.

[56] Nolte, E. and M. McKee (2004). Does healthcare save lives? Avoidable mortality revisited. London, The Nuffield Trust, Tobias, M. and L. C. Yeh (2007). "How much does health care contribute to health inequality in New Zealand?" Australian and New Zealand Journal of Public Health **31**(3): 207-10.

[57] Page, A., Tobias, M., Glover, J., Wright, C., Hetzel, D., and Fisher, E. (2006) Australian and New Zealand Atlas of Avoidable Mortality. Adelaide, PHIDU, University of Adelaide

Nevertheless, the data using this method in the report on Australia's National Health System Performance Indicators provides important evidence.[58] The graphs on the following page show changes in potentially avoidable deaths in Australia from 1980 to 2001 for each of the groups of conditions for males and females.

Obviously, primary health care has a role across all three types of intervention.

For example, primary health care clearly has an important role in interventions aimed at changing individual behaviour (for example, drinking or smoking) and a role in population level interventions / healthy public policy.

Primary health care clearly has a powerful role in immunisation, and is also important in ensuring successful hospital care through post-treatment monitoring and management.

However, primary health care's role is particularly important for those conditions where mortality can be avoided through early detection and management, that is secondary intervention. Therefore we can surmise that changes in avoidable mortality which is amenable to secondary prevention gives a strong indication of the effectiveness of primary health care.
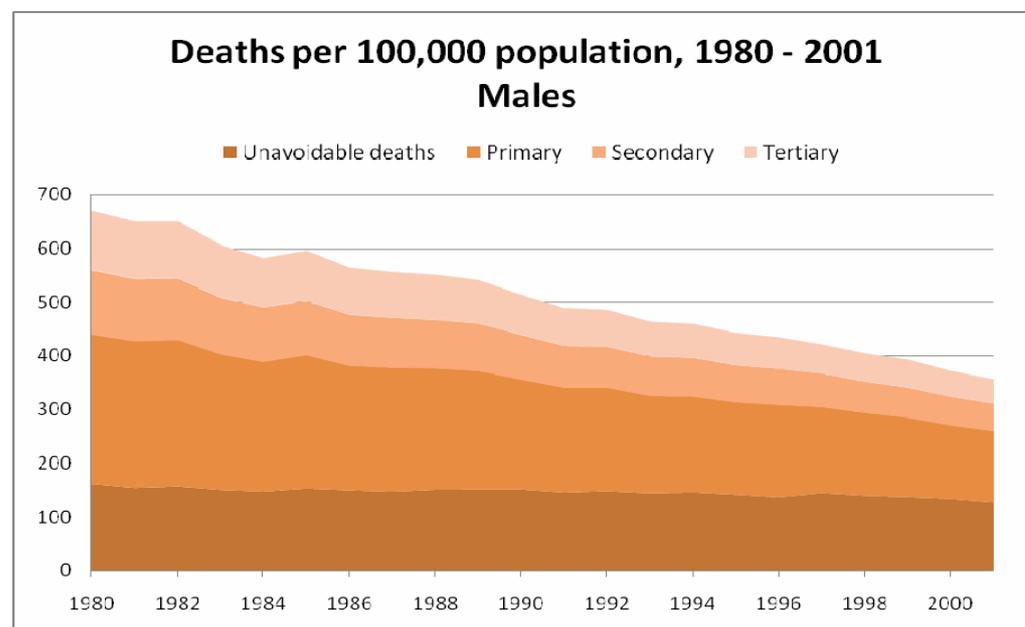
Deaths per 100,000 population, 1980 - 2001
Males

■ Unavoidable deaths   ■ Primary   ■ Secondary   ■ Tertiary

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[58] National Health Performance Committee (2004). National report on health sector performance indicators 2003. Canberra, Australian Institute of Health and Welfare.

Deaths per 100,000 population, 1980 - 2001 Females

Unavoidable deaths ■ Primary ■ Secondary ■ Tertiary
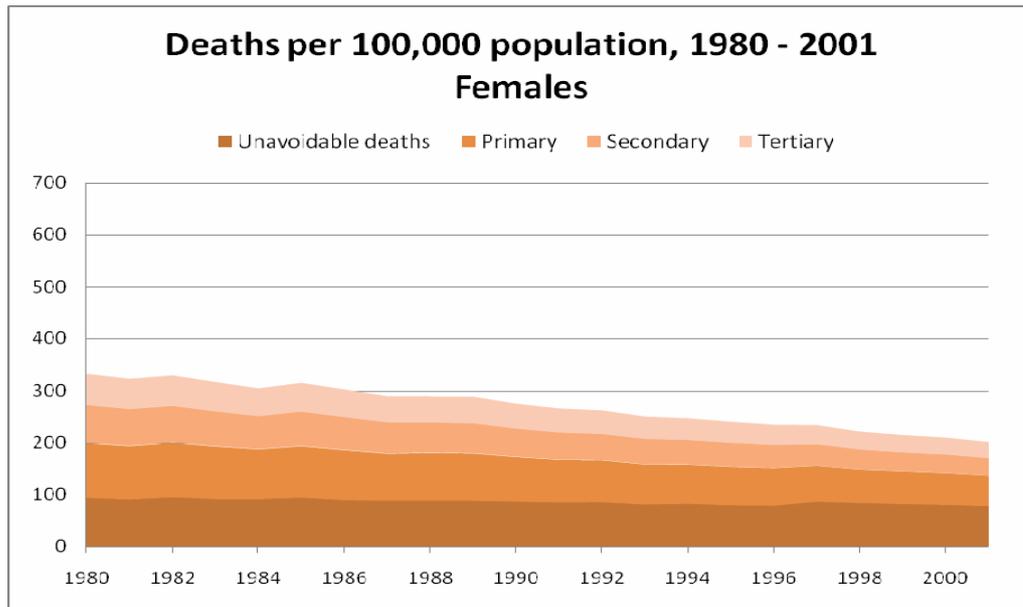
In Australia, the NHSPI data tells us that mortality from conditions susceptible to secondary intervention – that is early detection and management – fell by 57.2% for males and 53.6% for females between 1980 and 2001. This evidence strongly suggests that the primary health care system in Australia has contributed significantly to improvements in health in Australia.

Evidence of reductions in avoidable mortality for conditions susceptible to primary, secondary and tertiary intervention in Australia since 1980 suggest that primary health care has made a significant contribution to improved population health in this country.

3. Changes in Indigenous health status

In the previous chapter, we looked at the broadest scale evidence about the capacity for health systems to affect the health of populations.

The international literature demonstrates that, notwithstanding the powerful effects of the social determinants of health in general, and socioeconomic class in particular, health systems *do* contribute significantly to the health of populations. We also find that primary health care services themselves can be credited with contributing to improved population health.

Much of the evidence in the previous Chapter compares health statistics – such as avoidable mortality – on a national level. However, as many of these studies point out, major inequalities in health exist between advantaged and disadvantaged populations *within* nations.

In particular, the health of Indigenous peoples across the world is everywhere poorer than that of the mainstream populations amongst whom they live.

In this chapter, we turn our attention to the health of Indigenous peoples to ask a similar set of questions.

- what does the literature say about changing patterns of health for Indigenous peoples, both internationally and in the Aboriginal and Torres Strait Islander population in Australia?

- is there evidence that better health services (including better primary health care services) are implicated in improvements in the health of Indigenous populations overseas?

- what evidence is there in Australia for the health system as a whole and primary health care in particular in improving Aboriginal and Torres Strait Islander health status?

In answering these questions we will follow the same standards of evidence as in the previous chapter, that is, looking at the 'hardest' and most comparable data by measuring changes in health through life expectancy and mortality rates. A reminder, too, that here we are concerned with evidence at a national / jurisdictional level[59] – once these questions have been answered, we will then turn in the following Chapter to look in more detail at local level evidence about successful primary health care programs, before attempting to define what might be their most effective and essential components.

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[59] Note that in Australia, this predominantly means the data from Western Australia, the Northern Territory and South Australia.

The health of Indigenous peoples

Indigenous peoples, who have come to be known as the 'Fourth World' or 'nations without states' are found in many countries. However, the position and health status of the 'Fourth World' is strongly affected by that of the country within which they are located. Australia, as a First World, wealthy nation with a small – but in health terms, highly disadvantaged – Indigenous population, is most often compared to other nations in a similar position, namely the United States, Canada and New Zealand.

In this section we shall follow this convention and look briefly at the changing health status of Native American, Canadian First Nations, and New Zealand Maori populations, before turning to look at the latest data on health status of Australian Indigenous people.

The changing health status of Indigenous peoples of New Zealand, Canada, and United States

There are numerous methodological difficulties with estimating mortality rates / life expectancy figures for Indigenous populations, not least the problems centring around either the identification of ethnicity on death records or the estimation of the total Indigenous population.[60] All attempts to estimate life expectancies, and especially to compare them over time or across countries should therefore be treated with caution; in particular international comparisons are subject to the different methodologies used in different countries to estimate life expectancy and other measures of health status.[61]

Nevertheless, it is universally accepted that measured by life expectancy and mortality rates, the health of Indigenous peoples in First World countries is significantly worse than that of the mainstream populations of those countries. What is also clear is that the health status of these populations – no less than that of nations as a whole – is not static.

In **New Zealand**, for example, the picture over the last half-century has been mixed. In the early 1950s, life expectancies for Maori were 54 years for men and 56 years for women, with a gap of around 14 and 17 years to non-Maori men and women respectively.

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[60] For a discussion of some of these, see Hill, K., B. Barker, et al. (2007). "Excess Indigenous mortality: are Indigenous Australians more severely disadvantaged than other Indigenous populations?" International Journal of Epidemiology **36**(3): 580-589. We note that the estimation – and especially the comparison – of Indigenous health status is complex and fraught with such difficulties; accordingly, we can only provide a brief sketch of the main facts here.

[61] For more information on this important and technically complex area, see Hill, K., B. Barker, et al. (2007). "Excess Indigenous mortality: are Indigenous Australians more severely disadvantaged than other Indigenous populations?" International Journal of Epidemiology **36**(3): 580-589.

Maori life expectancy then increased rapidly from the 1950s until the early 1980s to around 64 years for men and 69 years for women and at this time the life expectancy gap with non-Maori had narrowed substantially to only 6 to 8 years. However, during the 1980s and 1990s, Maori life expectancy remained relatively static, only improving by around 2 years while non-Maori life expectancy continued a steeper upward path. By 1999, the life expectancy gap therefore widened quite dramatically to around 10 years – or back to what it had been in the early to mid-1960s.[62] (Fortunately, the early years of the twenty-first century have seen Maori life expectancy begin to increase once more).

A similar pattern is evident in the **United States**, where between 1940 and 1980 there were substantial improvements in the health of Native Americans as measured by life expectancy: female Native American life expectancy improved dramatically by 23 years over this period to around 75 years; male Native American life expectancy improved by 16 years to around 67 years.[63] At this point the life expectancy gap with the 'white' population was down to only 3 to 4 years.[64]

However, it appears there has been little major improvement in Native American life expectancy since around 1980, while the life expectancy of the non-Native population continued to improve. By the mid 1980s, the gap had widened to almost 5 years (both sexes) and by the period 1996-98 it was almost 6 years.[65]

Canada shows a slightly different pattern: the data since the mid-1970s show a fairly steep improvement in First Nations life expectancy between 1975 and 1990 (from around 59 years for men and 66 years for women, to around 67 years for men and 74 years for women). This period saw the life expectancy gap between First Nations peoples and Canadians as a whole narrow from 10 to 11 years in 1980 to 7 to 8 years in 1990.

Since then the rate of increase in First Nation life expectancy has been improving at a slower rate, In 2000, life expectancy at birth for 'Registered Indians' was estimated at around 69 years for men and a little under 77 years for women. This slowing of improvements meant that the 1990s saw no appreciable improvement in the gap in

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[62] Ajwani, S., T. Blakely, et al. (2003). Decades of Disparity: Ethnic mortality trends in New Zealand 1920-1999. Wellington, Ministry of Health and University of Otago.

[63] Condon, J. R., T. Barnes, et al. (2004). "Improvements in Indigenous mortality in the Northern Territory over four decades." Australian and New Zealand Journal of Public Health **28**(5): 445-451.; National Centre for Health Statistics (2007). Health, United States, 2007 with Chartbook on Trends in Health of Americans. U. D. o. H. a. H. Services. Washington DC, US Government Printing Office.

[64] Condon, J. R., T. Barnes, et al. (2004). "Improvements in Indigenous mortality in the Northern Territory over four decades." Australian and New Zealand Journal of Public Health **28**(5): 445-451.

[65] Hill, K., B. Barker, et al. (2007). "Excess Indigenous mortality: are Indigenous Australians more severely disadvantaged than other Indigenous populations?" International Journal of Epidemiology **36**(3): 580-589.

life expectancy between First Nation and Canadian men in general (7.4 years in 2000), while for women it narrowed slightly (down to 5.2 years in 2000).[66]

> The health of Indigenous peoples in First World countries, measured by life expectancy, is significantly worse than that of the mainstream populations of those countries.
>
> Broadly speaking, New Zealand, the United States and Canada saw major health improvements for Indigenous populations up to around the 1980s, leading to an appreciable narrowing of the gap in life expectancy between Indigenous and mainstream populations. However, between the 1980s and the end of the century, a slowing or stalling of Indigenous health improvements measured by life expectancy meant that the gap failed to close significantly (Canada) or even widened (New Zealand and the United States).

Aboriginal and Torres Strait Islander health status

The health status of Australia's Indigenous peoples has often been compared unfavourably with that of other Indigenous peoples in First World Countries. This is unfortunately borne out by the facts.

Aboriginal and Torres Strait Islander life expectancy

The life expectancy gap in Australia between Indigenous people and the mainstream population is greater than that in the countries examined above: the most recent Australian Institute of Health and Welfare (AIHW) and Australian Bureau of Statistics (ABS) figures for the period 1996-2001 give life expectancies for Indigenous males and females of around 59 years and 65 years respectively, compared to 77 years and 82 years for the populations as a whole. This gives a gap in life expectancy of around 17 years for both sexes – considerably greater than that seen in the other First World countries.[67]

It is important to note the qualified nature of these figures; the ABS themselves note that data problems meant that experimental methods are used to calculate life expectancies and that the estimates they come up with should only be used as indicative.[68]

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[66] Health Canada "Statistical Profile on the Health of First Nations in Canada.", Health Canada. (2002). "Healthy Canadians: A Federal Report on Comparable Health Indicators 2002." from http://www.hc-sc.gc.ca/hcs-sss/pubs/system-regime/2002-fed-comp-indicat/2002-health-sante5_e.html.

[67] AHMAC Australian Health Ministers' Advisory Council (AHMAC) (2006). Aboriginal and Torres Strait Islander Health Performance Framework Report 2006. AHMAC. Canberra.

[68] Ibid. p 148

Indeed, a recent study[69], using what the authors describe in depth as a stronger methodology, derives life expectancy figures for Indigenous Australian 4 to 5 years higher than the ABS estimates for the same period as above (69 years for female and 64 for male) with a corresponding narrower life expectancy gap of 13 and 12 years. Nevertheless, the authors come to the same conclusion as the AIHW/ABS and indeed every other commentator: that, measuring health by life expectancy, the Indigenous population of Australia is significantly more disadvantaged than those of Canada, New Zealand or the United States.

> Aboriginal and Torres Strait Islander life expectancy in 1996-2001 has been officially estimated at around 60 years for men and 65 for women, with a gap to non-Indigenous life expectancies of around 17 years for both sexes. Other estimates have put the life expectancy of Australia's Indigenous people higher (at around 64 years for men and 69 years for women) and the life expectancy gap consequently lower.
>
> Irrespective of which figures are used, it is clear that, measured by life expectancy, Aboriginal and Torres Strait Islander people have worse health than their Indigenous counterparts overseas, with a much greater life expectancy gap to the mainstream population.

Closing the Gap

Whatever the estimates of life expectancy, there has been much criticism of the apparent inability of Australia to narrow the gap between the life expectancy of Indigenous and non-Indigenous Australians.[70]

These criticisms – based not just on the statistics but also backed up by the life experience of Aboriginal and Torres Strait Islander people – have considerable weight and have been the subject of innumerable reports, campaigns and lobbying by Aboriginal communities, their representative health services, and their supporters.

Recently the issue has been taken up forcefully in a national campaign to 'Close the Gap' in life expectancy, supported by more than 40 Indigenous and non-Indigenous organisations, including Oxfam Australia, and calling on governments to commit to closing the life expectancy gap between Indigenous and non-Indigenous Australians within a generation.[71]

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[69] Hill, K., B. Barker, et al. (2007). "Excess Indigenous mortality: are Indigenous Australians more severely disadvantaged than other Indigenous populations?" International Journal of Epidemiology **36**(3): 580-589.

[70] Ring, I. and D. Firman (1998). "Reducing indigenous mortality in Australia: lessons from other countries." Medical Journal of Australia **169**: 528-533.; Kunitz, S. J. and M. Brady (1995). "Health care policy for Aboriginal Australians: the relevance of the American Indian experience." Aust. NZ J Public Health **19**: 549-58.

[71] See Oxfam Australia at http://www.oxfam.org.au/campaigns/indigenous-health/

This aim has now been adopted by the incoming Federal Government, with the Prime Minister, in his Apology to Australia's Indigenous Peoples on 13 February 2008, committing the Government to closing the life expectancy gap between Indigenous and non-Indigenous Australians within a generation. This target along with halving the gap in mortality rates for Indigenous children under five within a decade was also endorsed by all Australian jurisdictions at the Council of Australian Governments meeting on 20 December 2007.

The changing nature of Indigenous health

The campaigns for narrowing the gap between the health of Aboriginal and Torres Strait Islander people and other citizens are clearly justified, and any government commitment to closing the health gap will no doubt be widely welcomed.

However, a concentration on the relativity of Aboriginal and Torres Strait Islander health compared to mainstream health can sometimes mask improvements in the absolute health status of Indigenous Australians. One of the unintended consequences of this has been an assumption that the statistics are relentlessly bad, that 'nothing ever changes' in Aboriginal health and that (in some minds at least) we should therefore be sceptical about the possibilities of genuine improvements in Aboriginal health.

Against this view must be placed some of the positive changes in Indigenous health status measured over time, in particular using the key measures of life expectancy and mortality.

On a national level (based on data from WA, NT and SA), the most recent *Aboriginal and Torres Strait Islander Health Performance Framework Report 2006* reports positive results in overall mortality rates (which decreased by 24% for women and 6% for men between 1991 and 2003), as well as infant mortality which declined by 44%, and perinatal mortality which fell by around 55% over the same period.[72]

Consistent with falling mortality, life expectancy at birth may also be rising. ABS figures appear to document an improvement from 1991-1996 to 1996-2001, but the Bureau cautions against comparing the figures due to different methodologies in calculation for the two periods. Nevertheless, the alternative, and methodologically consistent, method of calculating life expectancies referred to above saw a modest increase between the two periods of around 1 year for both men and women.[73]

It has been suggested that one reason for the cynical view about the possibility of positive change in Aboriginal and Torres Strait Islander health is the lack of long-term, reliable datasets that are able to track life expectancy and mortality changes

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[72] Australian Health Ministers' Advisory Council (AHMAC) (2006). Aboriginal and Torres Strait Islander Health Performance Framework Report 2006. AHMAC. Canberra.

[73] Hill, K., B. Barker, et al. (2007). "Excess Indigenous mortality: are Indigenous Australians more severely disadvantaged than other Indigenous populations?" International Journal of Epidemiology **36**(3): 580-589.

over many decades.[74]

In the Northern Territory, however, a number of studies based on a reliable dataset of death registrations stretching back into the 1960s have been able to and extend the picture.

It appears that in that jurisdiction, between 1967 and 2004 life expectancy at birth increased by 8 years for Indigenous men and around 14 years for Indigenous women (to 60 and 68 years respectively) and the gap between Indigenous and non-Indigenous life expectancies declined for women from over 20 years in the 1960s to around 15 years (while still unfortunately increasing for men from 15.5 to 17.7 years).[75]

During this period, mortality rates declined in all age groups but especially in infant / early childhood mortality, and in older age groups for infectious, maternal and nutritional conditions with a moderate decline in injury mortality.[76]

> Despite the fact that the gap in life expectancy has not narrowed appreciably, there have been some positive changes in Aboriginal and Torres Strait Islander health status that give grounds for optimism such as significant decreases in Indigenous overall mortality, infant mortality and perinatal mortality rates during the 1990s.
>
> Research from the Northern Territory indicates improvements in life expectancy (by 8 years for Indigenous men and 14 years for Indigenous women) from the 1960s until 2004. Most of this was the result of substantially improved infant mortality rates.

Primary health care and Indigenous health: Overseas

Our brief review of the data on Indigenous life expectancy and mortality both within Australia and in New Zealand, Canada and the United States, reveal a complex and dynamic pattern but with a common characteristic – that there have been periods in all four countries where Indigenous health, measured by these indicators and looked at in absolute rather than relative terms, has improved.

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[74] Wilson, T., J. R. Condon, et al. (2007). "Northern Territory indigenous life expectancy improvements, 1967-2004." Australian and New Zealand Journal of Public Health **31**(2): 184-8.

[75] Ibid.

[76] Condon, J. R., T. Barnes, et al. (2004). "Improvements in Indigenous mortality in the Northern Territory over four decades." Ibid. **28**(5): 445-451.

The question we turn to now is whether there is any international evidence that health care in general and primary health care in particular contributed to these improvements.

Note that in this section we will continue to concentrate on answering this question at a jurisdictional / national level using life expectancy and mortality patters, rather than looking at specific case studies or programs, which will be the focus of the next chapter.

Our review of the literature did not find a large number of studies looking at Indigenous mortality patterns and attempting to link them to the provision of health care. Nevertheless, a number of studies seem to demonstrate that, just as health systems and primary health care have improved the health of populations in general, they have also done so for Indigenous populations elsewhere.

Notwithstanding a recent widening of the gap in that country, the comparative success of the United States in reducing the life expectancy gap between Indigenous and non-Indigenous peoples has been noted by many commentators.[77] This success has been crucially attributed to the federal government's unequivocal adoption of responsibility for providing health care to Native Americans through the Indian Health Service (IHS).

This political / administrative structure allowed the IHS to quarantine funds specifically for Indian health, and separated it from state-level political conflict about access to land and natural resources. However, of most relevance to our argument, the IHS's integrated system of health care, based on the delivery of comprehensive primary health care (including mental health, environmental health and health education services) plus its own referral centres and even local hospitals, has been argued as having been critical in delivering better health for Indigenous peoples in the United States.[78]

This analysis is backed up quantitatively in a study of avoidable mortality amongst Native Americans in the United States.[79] This study proposed the use of avoidable mortality as a way of measuring the impact of health systems on Indigenous communities, and found a 57% decrease in avoidable mortality among Native Americans between 1972 and 1987, at a rate of 7.5% per year, double the fall in the non-avoidable mortality rate of 3.7% per year. As we have seen in Chapter 2, this

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[77] See below, and Bramley, D., Hebert, P., Tuzzio L., Chassin, M., (2005) Disparities in Indigenous Health: A cross-country comparison between New Zealand and the United States, American Journal of Public Health, May 2005, **95**:5 844 – 850.

[78] Kunitz, S. J. (1994). Disease and social diversity: the European impact on the health of non-Europeans. New York, Oxford University Press, Kunitz, S. J. and M. Brady (1995). "Health care policy for Aboriginal Australians: the relevance of the American Indian experience." Aust. NZ J Public Health **19**: 549-58. See also Kunitz, S. J. (1994). Disease and social diversity: the European impact on the health of non-Europeans. New York, Oxford University Press.

[79] Hisnanick, J. and D. Coddington (1995). "Measuring human betterment through avoidable mortality: a case for universal health care in the USA." Health Policy 34(1): 9-19.

would strongly indicate that health care is at least partly contributing to the reductions in mortality.

In this particular study, the authors drew the conclusion that not-withstanding social, environmental and genetic factors, access to integrated, universal health care through the IHS, with a strong primary and preventive focus incorporating health promotion and disease prevention, improved the health and life expectancy of this disadvantaged population, despite their socioeconomic disadvantage.

A number of studies in New Zealand have also considered avoidable mortality amongst Maori people and have shown that avoidable causes of death make a considerable contribution (between 27% and 44%) to overall differences in mortality between Maori and non-Maori people[80] and that deaths from avoidable causes were about two-and-a-half times more common amongst Maori compared to other New Zealanders.[81]

While it has been argued that the stalling of improvements in the life-expectancy of Maori people from the 1980s to the 1990s and consequent widening of the life expectancy gap is largely the result of socioeconomic factors, and in particular the economic reforms during this period which impacted disproportionately on Maori in terms of poverty and unemployment,[82] differential access to health care was also considered to be an important contributing factor.

Specifically, It appears that the restructuring of the health system, including the introduction of co-payments, may have discouraged access to primary health care by Maori people, and that that this *lack* of access to preventive and primary health care services is a major contributor to the *higher* mortality suffered by that country's Indigenous people.[83]

It has also been posited that, while the expansion of health services run by Maori communities under the restructured health system was unable to counter-balance these other factors, the renewed upswing in Maori life expectancy since the end of the 1990s can be attributed to these 'by Maori, for Maori' primary health care services.[84]

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[80] Tobias, M. and L. C. Yeh (2007). "How much does health care contribute to health inequality in New Zealand?" Australian and New Zealand Journal of Public Health **31**(3): 207-10.

[81] Page, A., Tobias, M., Glover, J., Wright, C., Hetzel, D., and Fisher, E. (2006) Australian and New Zealand Atlas of Avoidable Mortality. Adelaide, PHIDU, University of Adelaide

[82] Blakely, T., M. Tobias, et al. (2005). "Widening ethnic mortality disparities in New Zealand 1981-99." Social Science & Medicine **61**(10): 2233-51.

[83] Tobias, M. and G. Jackson (2001). "Avoidable mortality in New Zealand, 1981-97." Australian and New Zealand Journal of Public Health **25**(1): 12-20.

[84] Blakely, T., M. Tobias, et al. (2005). "Widening ethnic mortality disparities in New Zealand 1981-99." Social Science & Medicine **61**(10): 2233-51.

> Evidence from the United States and New Zealand suggest that primary health care has contributed to narrowing the life expectancy gap between Indigenous and non-Indigenous peoples in those countries, with the Indian Health Service in particular credited with a major contribution in the US. There is also evidence that poorer access to primary health care is associated with a widening life expectancy gap.

Primary health care and Indigenous health: Australia

The Australian Health Ministers' Advisory Council, after reviewing in depth the evidence about changes in Aboriginal and Torres Strait Islander health status, recently concluded that

> *The progress of recent years demonstrates that … government investment, particularly in primary health care, is beginning to pay dividends in some areas.*[85]

A number of researchers looking in detail at the changes in life expectancy and mortality for Aboriginal and Torres Strait Islander communities have drawn similar conclusions.[86]

However, is there evidence at the jurisdictional level for primary health care delivering improved mortality or life expectancy outcomes for Aboriginal and Torres Strait Islander populations?

When we came to examine a similar question for populations as a whole in the previous chapter, we found a number of studies thrown up by our literature search which specifically addressed the question and delivered a clear 'yes'. Unfortunately, despite some excellent evidence beginning to accumulate, Australia is yet to see specific studies in the Indigenous field that determine the relationship between primary health care access and health status as measured by life expectancy / mortality.

There are, of course, other possible measures of the effectiveness of primary health care systems, such as ambulatory care sensitive hospitalisations, that is hospitalisations which are potentially avoidable through preventive care and early

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[85] Australian Health Ministers' Advisory Council (AHMAC) (2006). Aboriginal and Torres Strait Islander Health Performance Framework Report 2006. AHMAC. Canberra.

[86] For example Thomas, D. P., J. R. Condon, et al. (2006). "Long-term trends in Indigenous deaths from chronic disease in the Northern Territory; a foot on the brake, a foot on the accelerator." MJA **185**: 145-149, Wilson, T., J. R. Condon, et al. (2007). "Northern Territory indigenous life expectancy improvements, 1967-2004." Australian and New Zealand Journal of Public Health **31**(2): 184-8.

disease detection and management, usually delivered in a primary health care setting.

Such measures are important in their own right. However, they fall outside the scope of this report which is focused on the less ambiguous outcome measures of life-expectancy and mortality. While clearly mortality is an unambiguously bad result, increasing hospitalisations may represent either a good or a bad health care outcome, even for causes that are theoretically preventable. Often the first impact of a developing primary health care system is to increase such admissions, of patients who might otherwise have died. Over time these admissions might be expected to fall if primary health care is of high quality and accessible.

Indigenous primary health care spending in Australia

Just as measuring the health status of Indigenous Australians is beset by data and methodological difficulties, so is measuring expenditure on their health. While recent figures show data going back to 1995-96, earlier years are not comparable with later, and comparisons can only be made from 1998-99 onwards.[87] Nevertheless, a few broad points can be made.

There is no doubt that the successful campaign by sections of the Aboriginal community-controlled health sector and others to have funding responsibility for Aboriginal primary health care transferred from ATSIC to the Commonwealth Health Department in 1995 ultimately led to increased funds for Aboriginal and Torres Strait Islander primary health care, including through such new programs as the Primary Health Care Access Program. Funding for Aboriginal community controlled health services increased from $233 per Indigenous person in 1998-99 to $426 per person in 2004-05 (in constant 2004-05 dollars), an increase of 83% to a total of $193 million.[88]

Further, reforms to the Medical and Pharmaceutical Benefits Schemes (MBS and PBS) to ensure that funding reached Aboriginal communities which were often not served by private General Practitioners and / or pharmacies also led to increased Aboriginal and Torres Strait Islander use of these schemes, from $237 per Indigenous person in 1998-99 to $364 in 2004-05, up 53%. (It is worth noting, however, that Aboriginal and Torres Strait Islander per capita expenditure for these schemes remains under half of that for other Australians).[89]

There were only minor changes ($27 per person or 4%) in State / Territory expenditures on community and public health for Aboriginal and Torres Strait Islander people over this period.

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[87] Australian Institute of Health and Welfare (2008). Expenditures on health for Aboriginal and Torres Strait Islander peoples 2004–05. AIHW. Canberra.

[88] Ibid.

[89] Ibid.

These figures demonstrate a small but real increase in investment in primary health care for Aboriginal and Torres Strait Islander communities since the 1990s. They have led to an increase in the staffing and episodes of services delivered by the Aboriginal community-controlled sector, and greater access to prescription medicines through the PBS section 100 arrangements.[90]

Nevertheless, these increases are not dramatic measured against the continuing high burden of morbidity and mortality in the Indigenous community, and also taking into account the fact that overall health care expenditure in Australian also increased over this period, that the Indigenous population continues to increase (and at a higher rate than the mainstream population), and that health care costs have risen over this period. Note that The implications of the evidence for resourcing of Indigenous primary health care is further discussed below.

> Expenditure on Indigenous primary health care (as measured by funding of Aboriginal community-controlled health services and Aboriginal and Torres Strait Islander access to MBS and PBS) increased in real terms by 83% and 53% respectively between 1998-99 and 2004-05. However, the significance of such increases must be set against increased health care costs, an increasing Indigenous population, and continuing excess rates of morbidity and mortality in the Indigenous community.

Avoidable mortality and Aboriginal and Torres Strait Islander populations

As we have seen, avoidable mortality is an important measure of the effect of health systems on the health of populations. The recent atlas of avoidable mortality in Australia and New Zealand[91] provides extensive information, but unfortunately does not include trends over time in Indigenous avoidable mortality. Fortunately, the Aboriginal and Torres Strait Islander Health Performance Framework Report[92] does and their figures for Aboriginal and Torres Strait Islander people in Western Australia, South Australia and the Northern Territory give us direct evidence about the health system's effect.

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[90] Australian Health Ministers' Advisory Council (AHMAC) (2006). Aboriginal and Torres Strait Islander Health Performance Framework Report 2006. AHMAC. Canberra.

[91] Page, A., Tobias, M., Glover, J., Wright, C., Hetzel, D., and Fisher, E. (2006) Australian and New Zealand Atlas of Avoidable Mortality. Adelaide, PHIDU, University of Adelaide.

[92] Australian Institute of Health and Welfare (AIHW) (2007). Aboriginal and Torres Strait Islander Health Performance Framework Report 2006: detailed analyses. Canberra, AIHW.

Age-standardised mortality rates for avoidable causes, WA, SA & NT, 1991-2003
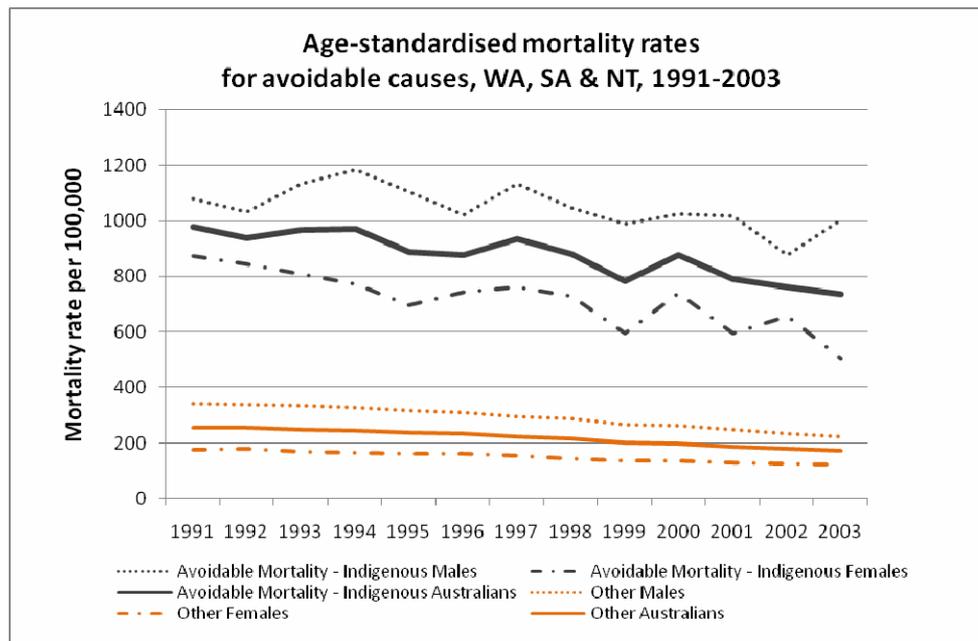
This data shows that the period 1991 to 1996 saw significant declines in avoidable mortality among Indigenous Australians (with an average yearly decline in the rate of around 18 deaths per 100,000). Note however, that only the avoidable mortality rates for Indigenous women improved significantly relative to the non-Indigenous population.

However, the following period, 1997–2003 saw an accelerating decline in avoidable mortality rates among Indigenous Australians (an average yearly decline in the rate of around 29 deaths per 100,000) and this time the decline was significant for both Indigenous women and men relative to their non-Indigenous counterparts.

Obviously, a fall in avoidable mortality rates is positive. However, to be sure about the effect of the health system itself, it is necessary to compare changes in avoidable mortality with changes in overall mortality.

As we can see in the following graph, over the period 1991-2003, overall mortality rates for Indigenous Australians in NT, WA and WA fell by 22%, while avoidable mortality rates fell only slightly more (25%). This would indicate, at best a weak effect of the health system on the health status of Aboriginal people.

However, the differences between men and women are significant: while both total and avoidable mortality rates fell by only 7% for Indigenous men (indicating little or no effect by the health system), for women total mortality rates fell by 36%, while avoidable mortality fell by 42%, which suggests a small but definite effect by the health system between the early 1990s and the first years of the 21st century.

Indigenous Avoidable Mortality and All Causes Mortality Rates, 1991-2003
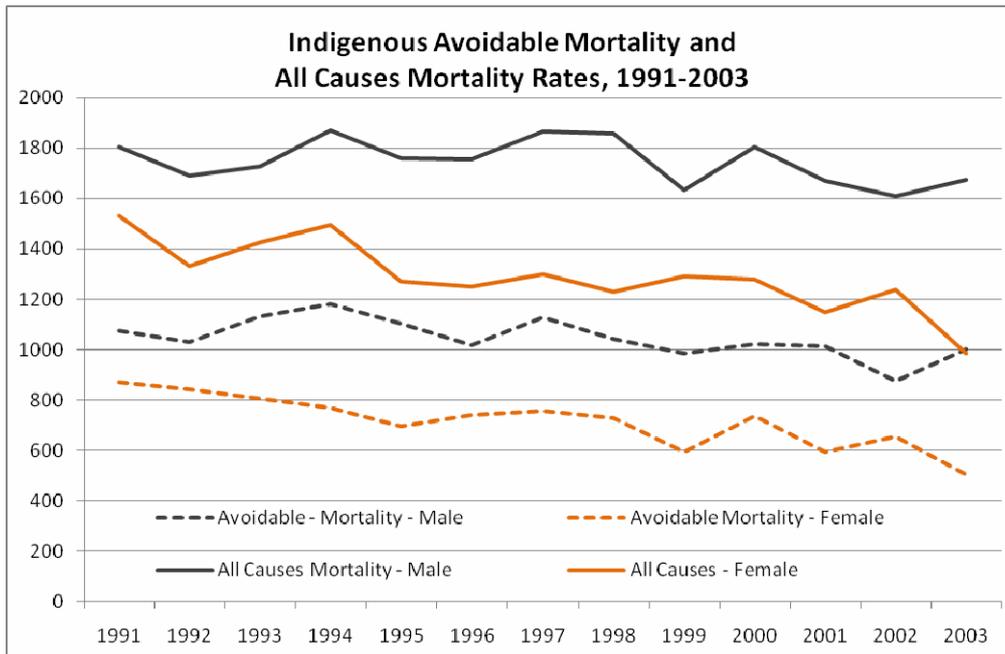
Critical to note at this juncture is the lag effect of health services on mortality – improvements in access to health services now, particularly primary health care services concerned with early childhood health as well as early detection and management of long-term chronic disease, may not be reflected in improved mortality / life expectancy figures for some years to come.

> Declines in avoidable mortality rates compared with overall mortality rates for Indigenous women during the period 1991-2003 provide direct evidence of small but definite effect on Indigenous women's health status by the actions of the health system.

It is not easy to determine the extent to which these falls in avoidable mortality are the result of the actions of the primary health care sector in particular.

One could hypothesise that the stark difference in the falls in avoidable mortality rates for men and women (reflected also, of course, in overall life expectancy and mortality figures which show improvements for Aboriginal and Torres Strait Islander women but few or none for men) are the result of differential access to primary health care services. This hypothesis is supported by the many primary health care service providers who note how relatively difficult it is to engage with adult men compared to women and children.

As we saw in Chapter 2, avoidable mortality has been broken down into sub-categories depending on whether mortality is avoidable through primary interventions (where the initial onset of the condition is preventable through individual behaviour change or public health policy), secondary interventions (where already established conditions are amenable to early intervention and ongoing management, particularly

in a primary health care setting), or tertiary interventions (medical or surgical treatments). However, there is no publicly available breakdown of Indigenous avoidable mortality rates by these sub-categories.

Instead, there are two other sources of data which suggest that primary health care may be having an effect: infant mortality and disease mortality patterns.

Infant mortality

Just as there is a 'life expectancy gap', an 'infant mortality gap' between Indigenous and non-Indigenous peoples exists in First World countries.

In the United States, the infant mortality rate of babies born to Indigenous mothers is 9.8 per 1,000 live births, compared to 6.8 for all births (gap 3.0 per 1,000 live births); the mortality rate of Canadian First Nation infants was 6.4 per 1,000 live births compared to the overall Canadian rate of 5.3 (gap 1.1); and in New Zealand the mortality rate of Maori infants was 8.9 per 1,000 live births compared to 5.7 for the total New Zealand population (gap 3.2).[93]

However, just as the life expectancy gap is greater in Australia between Indigenous people and non-Indigenous people, so is the infant mortality gap: Aboriginal and Torres Strait Islander infants in 2003 had a mortality rate of 11.6 per 1,000 live births, compared to 3.4 for the other Australian infants (a gap of 8.1 per 1,000 live births).[94]

Although this clearly indicates an area of concern, there is positive news in that the infant mortality rate is improving and the infant mortality gap narrowing: from 1991 to 2003, in those jurisdictions with good data (WA, SA and NT), the Indigenous infant mortality rate halved from 21.9 per 1,000 live births to 11.6 per 1,000 live births, the gap likewise halving from over 16 to around 8 per 1,000 live births.[95]

Looking further back, at least in the Northern Territory increases in life expectancy between 1967 and 2000 were significantly due to large declines in infant / early childhood mortality, especially in the period from the 1960s to the 1980s. This has been linked to improved access to primary care services in remote areas, both through government and community-controlled services, from the 1970s onwards.[96]

Experienced researchers and activists in the field point to these improvements as being the result of primary health care. And while linking these declines specifically

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[93] Freemantle, J., Officer, K., McAullay, D. & Anderson, I. (2007), Australian Indigenous Health—Within an International Context, Cooperative Research Centre for Aboriginal Health, Darwin

[94] Australian Health Ministers' Advisory Council (AHMAC) (2006). Aboriginal and Torres Strait Islander Health Performance Framework Report 2006. AHMAC. Canberra.

[95] Ibid. Note however a study specific to Western Australia which found the infant mortality rate gap widening despite improvements in the absolute rate between 1980 and 2001 - Freemantle, C., R. Read, et al. (2006). "Patterns, trends, and increasing disparities in mortality for Aboriginal and non-Aboriginal infants born in Western Australia, 1980–2001: population database study." Lancet **367**(9524): 1758-1766.

[96] Wilson, T., J. R. Condon, et al. (2007). "Northern Territory indigenous life expectancy improvements, 1967-2004." Australian and New Zealand Journal of Public Health **31**(2): 184-8.

and unambiguously to better primary health care is yet to be done, it is important to remember that the John Hopkins group (see Chapter 2) found that stronger primary health care systems are associated with better health outcomes especially relating to infant health,[97] and that greater primary care resources are associated with better infant mortality rates.[98]

The improvements in infant mortality in Australia therefore reflect the pattern one would expect from improved primary health care services. Taken in combination with the evidence from avoidable mortality that health care systems are measurably improving Aboriginal and Torres Strait Islander women's health in particular, this provides an indication that the primary health care system may be partly responsible for improving infant mortality rates.

> Improvements in Aboriginal and Torres Strait Islander infant mortality rates are consistent with better access to primary health care services. Nevertheless, Indigenous infant mortality rates remain almost three times greater than for other Australians, and significantly worse than those for Indigenous peoples overseas.

Disease mortality patterns[99]

We can also gain an indication of the effect of primary health care through looking at the changing patterns of mortality for specific diseases. If there are documented improvements in mortality rates for those conditions which are most susceptible to primary health care, this may indicate that it is those services which are leading to the observed health changes.

The best evidence comes from the Northern Territory, where the identification of Indigenous status and recording of causes of death allow an analysis of trends in disease mortality going back to the 1960s.

The study of Indigenous life expectancy since the 1960s in the Territory raised the possibility, that better access to primary health care and the establishment of Aboriginal primary health care services may have contributed to the improvements in this area.[100]

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[97] Starfield, B. and L. Shi (2002). "Policy relevant determinants of health: an international perspective." Health Policy **60**(3): 201-218.

[98] Shi, L., J. Macinko, et al. (2004). "Primary care, infant mortality, and low birth weight in the states of the USA." J Epidemiol Community Health 58(5): 374-80.

[99] We note the recent extensive national study of disease patterns and mortality (Vos T, Barker B, Stanley L, Lopez AD (2007). The burden of disease and injury in Aboriginal and Torres Strait Islander peoples. Brisbane: School of Population Health, The University of Queensland) which provides an unparalleled snapshot of the current burden of disease in Aboriginal and Torres Strait Islander communities. Its findings accord with much of the following evidence, without, unfortunately, providing any analyses of trends from which the possible effects of primary health care might be adduced.

[100] Wilson, T., J. R. Condon, et al. (2007). "Northern Territory indigenous life expectancy improvements, 1967-2004." Australian and New Zealand Journal of Public Health **31**(2): 184-8.

The last forty years has seen infectious disease and respiratory infections contributing less to the gap in life expectancy between Aboriginal and non-Aboriginal people, and chronic disease contributing more. In the early 1980s, for example, communicable disease and maternal, perinatal and, nutritional conditions contributed to a little over one-third of the life expectancy gap; by the late 1990s they were contributing only one-sixth. During the same period, while non-communicable diseases rose from contributing about 60% to almost 80% of the gap in life expectancy.[101] These figures are similar to those found nationally, where it is estimated that currently non-communicable diseases explain 70% of the health gap.[102]

This may be the result to some extent of improved housing and environmental health conditions; however, it may well also reflect the fact that infectious diseases are the ones most immediately and easily sensitive to primary health care interventions, whereas chronic diseases are both less easy to address and have a relatively long time lag before the effects of primary health care interventions are reflected in mortality and therefore life expectancy figures.

Further, a recent study of Indigenous health for the period 1977 to 2000 in the Northern Territory shows that death rates for a number of chronic diseases is slowing and even, for some conditions, beginning to fall, and that this may be attributable to better access to primary and specialist medical care gradually 'putting the brakes on' chronic disease mortality.[103]

A study of cancer mortality over the period 1977 to 2000[104] has shown a rise in cancer rates associated with smoking amongst the Indigenous population of the Territory. However, there were also significant falls in mortality rates for cervical cancer – mortality which is highly avoidable through early detection by Pap smear screening[105], which is in turn dependent on a functioning primary health care sector. It may also be significant that the major falls in mortality from this condition occurred in the late 1990s, concurrent with major increases in investment in primary health care.

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[101] Zhao, Y. and K. Dempsey (2006). "Causes of inequality in life expectancy between Indigenous and non-Indigenous people in the Northern Territory 1981-2000: a decomposition analysis." MJA **184**: 490-494.

[102] Vos T, Barker B, Stanley L, Lopez AD (2007). The burden of disease and injury in Aboriginal and Torres Strait Islander peoples. Brisbane: School of Population Health, The University of Queensland.

[103] Thomas, D. P., J. R. Condon, et al. Ibid."Long-term trends in Indigenous deaths from chronic disease in the Northern Territory; a foot on the brake, a foot on the accelerator." **185**: 145-149.

[104] Condon, J. R., T. Barnes, et al. (2004). "Long term trends in cancer mortality for Indigenous Australians in the Northern Territory." Ibid. **180**: 504-507.

[105] Tobias, M. and G. Jackson (2001). "Avoidable mortality in New Zealand, 1981-97." Australian and New Zealand Journal of Public Health **25**(1): 12-20.

Changes in disease mortality patterns – including the shift from mortality due to infectious disease to mortality due to chronic conditions – have been well documented, especially in the Northern Territory, and are plausibly related to the development and actions of primary health care services.

Policy lessons from the evidence

The evidence at a national / jurisdictional level that improvements in Aboriginal and Torres Strait Islander health status (as measured by life expectancy and mortality rates) are the result of improved access to primary health care is indicative rather than direct. Furthermore, the scale of the changes – although reason for cautious optimism – is modest, corresponding to the modest improvements in funding and access, compared to the need for health care.

Falls in avoidable mortality relative to overall mortality for Aboriginal women since the early 1990s provides strong evidence that the health system as a whole is having a small but definite effect on improving health. However, without more detailed data about the categories of avoidable mortality, the evidence does not definitively associate these improvements with primary health care. However, improvements in infant mortality and changing disease mortality patterns are also suggestive of better primary health care access, though this is not conclusive at the levels of evidence that we see elsewhere in the world.

It is clear from overseas experience that despite the strong effects of socioeconomic disadvantage, improved access to primary health care leads to better health outcomes, especially in child and maternal health. This positive effect of primary health care is confirmed for Indigenous populations elsewhere. What then should we make of the relative weakness of the evidence in Australia?

The visibility of change

A contributing factor to the lack of the kind of strong evidence we see overseas for the efficacy of primary health care may be that such evidence is not yet visible, or only incompletely so, to national / jurisdictional statistical analysis in Australia.

At the national and jurisdictional level, there remain many gaps in the Aboriginal and Torres Strait Islander data. For example, the inclusion of Indigenous status on death notification forms is relatively recent in some jurisdictions (as late as the mid 1990s in

Queensland)[106] and only one jurisdiction (the Northern Territory) has good mortality / life expectancy data going back several decades.

Such gaps have made it difficult to demonstrate the existence of improvements in Aboriginal and Torres Strait Islander health, let alone be unequivocal about the contribution of the health system and/or primary health care to them.

It is also the case that in-depth studies to measure the efficacy of primary health care in Australia – comparable to those carried out by the John Hopkins group on county-level access to primary health care in the United States – have not been attempted in Australia, though it is unclear whether the data to support such studies is available.

We must also consider the lag effect of improved primary health care. On some conditions (for example, infectious diseases) primary health care may have an immediate effect on mortality rates; for others (for example, chronic diseases such as ischaemic heart disease), improved access to primary health care may not have significant effects on mortality and life expectancy rates for many years.

In particular, there is now strong evidence that poor early childhood health is associated with the development of chronic disease in adult life[107], as well as an increased risk of hospitalisation and premature death.[108] This being the case, the full effect of the moderate increases in spending on, and access to, Indigenous primary health care during 1990s may not appear until well into this century in the shape of reduced risk of chronic disease.

In this view, primary health care is not just an immediate response to ill-health but also a long term investment in the health of populations. Consistent, sustained, long-term effort is therefore required if the full benefits of primary health care are to be realised.

> A lack of high-quality long-term data may contribute to the relatively modest evidence for the positive effects of primary health care at a jurisdictional level in Indigenous Australia.
>
> The time-lag between improvements in primary health care access and the realisation of its full benefits, particular in regard to the life-time health effects arising from good early childhood development, may also contribute to the relative weakness of the evidence in Indigenous Australia.

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[106] Freemantle, J., K. Officer, et al. (2007). Australian Indigenous Health—Within an International Context. Darwin, Cooperative Research Centre for Aboriginal Health.

[107] Barker, D. J., Ed. (1993). Fetal and infant origins of adult disease. London, BMJ Publishing Group.

[108] Power, C. and L. Li (2000). "Cohort study of birthweight, mortality, and disability." BMJ **320**: 840-841.

The scale of change

While data deficiencies and time lag may contribute to the weakness of the evidence at a jurisdictional level for the effect of primary health care on Aboriginal and Torres Strait Islander health status, there is no doubt that fundamentally the weakness of the evidence is a product of the only relatively small health gains made by the Aboriginal and Torres Strait Islander population.

As we have seen overseas, improvements in access to primary health care have a definite effect on life expectancy and mortality, but are not a magic bullet: other social determinants, particularly poverty, exert a strong negative effect on health. And in Australia, improvements in the social determinants of health for Aboriginal people have been mixed at best.

For example in the critical determinant of education, while literacy and numeracy levels in primary school have improved along with school retention rates, by both these measures Indigenous children in Australia continue to end up with a significantly poorer education than their non-Indigenous counterparts.[109] It is also important to note that there may also be a significant lag in effect from improvements in education.

Similarly, with employment and income: while it appears that unemployment rates fell from 30% in 1994 to 20% in 2002 for Aboriginal and Torres Strait Islander people aged 18 to 64 years, these results must take into account the possible masking effect of CDEP, the relatively low degree of labour force participation, and the high number of long-term unemployed. Significantly, 42% of Indigenous adults in 2002 were in the lowest quintile of incomes (as measured by equivalised gross weekly household income). These figures would lead us to conclude that poverty continues to be a major driver of poor health outcomes in the Australian Indigenous community.[110]

There are also signs that exposure to violence, child abuse and neglect and contact with the criminal justice system (including imprisonment) are trending worse, and that physical activity is declining and overweight and obesity are increasing.[111]

This would lead to the conclusion that the high levels of disadvantage many Indigenous communities face in terms of income, education and infrastructure, continue to exert a dominant negative effect on health, one which the increased level of primary health care access has been able to modify but not conclusively reverse. The conclusion in the Northern Territory at least is that these social determinants continue to drive high levels of ill health, and that under these circumstance improved

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[109] Australian Health Ministers' Advisory Council (AHMAC) (2006). Aboriginal and Torres Strait Islander Health Performance Framework Report 2006. AHMAC. Canberra.
[110] Ibid.
[111] Ibid.

primary health care services can at best provide a brake on what would otherwise be accelerating mortality rates.[112]

> The relatively modest evidence for a primary health care contribution to changes in life expectancy and mortality at a national or jurisdictional level is fundamentally a product of the (at best) modest health gains made by the Aboriginal and Torres Strait Islander population.
>
> Consistent with the international evidence, it seems that Aboriginal and Torres Strait Islander people have yet to reap the full benefits of primary health care that their Indigenous counterparts overseas have achieved. The evidence points to further and sustained investment in primary health care, along with action on the social determinants, as a crucial strategy for 'closing the gap' in life expectancy between Indigenous and non-Indigenous Australians.

Timeliness and effectiveness of primary health care

Notwithstanding the continuing negative impact on health of many of the social determinants of health, we know that health systems in general, and primary health care in particular, can offset these effects to some extent through operating to prevent avoidable deaths.

To conclude this chapter, let us recall the definition of the key concept of avoidable mortality – that it constitutes those deaths which we would not expect to occur in the face of 'timely and effective' health care. The aim, then, if we want to reduce the number of avoidable deaths (and hence lower the overall mortality rate and higher life expectancy) is to ensure that health service in general and primary health care in particular are timely (that is, accessible) and effective.

Resourcing access to primary health care

An important point regarding the lack of strong evidence for the direct effects of primary health care on Aboriginal and Torres Strait Islander health at a national and jurisdictional level is that the scale of additional investment in primary health care has been small, and that therefore the improvements in health status are not surprisingly, small.

Welcome as the increases over the past decade or more are, no one seriously argues that they are adequate given the high burden of morbidity and mortality in the Indigenous community. Most public calls for equitable primary health care funding for

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[112] Thomas, D. P., J. R. Condon, et al. (2006). "Long-term trends in Indigenous deaths from chronic disease in the Northern Territory; a foot on the brake, a foot on the accelerator." MJA **185**: 145-149.

Aboriginal and Torres Strait Islander communities place the extra funding required for primary health care in the $400 to $460 million per year range and have been current for around ten years.[113]

Against these estimates, the increases of recent years are modest at best: the real increase in annual funding for Aboriginal community controlled health services from 1998-99 to 2004-05 was a total of around $80 to $90 million; and while Medicare and PBS expenditures also increased over this period, part of this increase is the result of improved identification of Indigenous clients rather than increases in service. [114] Once population increases are taken into account, as well increasing health care costs, national expenditure on primary health services for Aboriginal and Torres Strait Islander people has not dramatically improved.[115]

We note also that calculations (such as those by the AMA and others, quoted above) based on meeting the deficit in health funding between Aboriginal and Torres Strait Islander and other Australians (based for example on excess morbidity and mortality rates) are imperfect. In particular, funding to meet the deficit in resources may not be sufficient to significantly closing the health gap. For example, if Indigenous communities have mortality or morbidity rates three times the mainstream rates, there is no reason to assume that therefore three times the level of funding per capita will successfully address that ill health: the ratio may be much greater than that given the high level of disadvantage in so many other areas of Aboriginal and Torres Strait Islander life.

It is also the case that funding for primary health care service delivery alone has certain limiters, especially in the form of the need for investment in capital infrastructure (especially in remote areas) and workforce development. The lack of comprehensive and funded plans to address such issues has further limited the effectiveness of moderately increased investments in primary health care delivery.

These concerns raise the issue of a lack of an overall national approach to address Aboriginal and Torres Strait Islander health disadvantage.

The increases over the last decade in Commonwealth funding for Aboriginal community controlled health services have been important in contributing to the health gains over that period. However, these increases have not (except in the few instances where it has led to new health services) increased access to primary health care in areas which are not serviced by a community-controlled health service.

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[113] Anderson, P. (2002). A packet of tomato seeds: Aboriginal health, community and capacity. Telstra National Press Club Address. Canberra, National Aboriginal Community Controlled Health Organisation. Australian Medical Association (AMA) (2007). Institutionalised Inequity. Not Just a matter of money. Report card on Aboriginal and Torres Strait Islander Health. Deeble, J. (2000). How much is needed? A needs-based funding formula for Aboriginal and Torres Strait Islander health, Australian Medical Association.

[114] Australian Institute of Health and Welfare (2008). Expenditures on health for Aboriginal and Torres Strait Islander peoples 2004–05. AIHW. Canberra.

[115] ibid.

In Northern and remote Australia, many areas remain largely dependent on State / Territory government funded and/or run primary health care services. In urban areas where there is no Aboriginal community-controlled health service in the immediate vicinity, access generally depends on privately provided medical and allied health services funded by Medicare – Indigenous expenditure for which, while increasing, remains significantly lower than for non-Indigenous Australia.

Unfortunately, perhaps, the jurisdictional Framework Agreements on Aboriginal and Torres Strait Islander Health which followed the transfer of responsibility for primary health care funding did not require States and Territories to match Commonwealth funding increases. Nor was there a Commonwealth funding program to assist the States and Territories to make up the shortfall in primary health care (normally a Federal responsibility) in those States and Territories with populations largely un-serviced by the Commonwealth's community controlled health service funding program.

Thus, in funding terms, Australia has had a 'Commonwealth' Aboriginal and Torres Strait Islander primary health care approach, rather than a national one. And to the extent that State and Territory Governments have not increased the resourcing of primary health care (including through funding Aboriginal community controlled services located within their jurisdictions) to anywhere near the level that the Commonwealth has, many Aboriginal and Torres Strait Islander communities have remained isolated from improvements in access to primary health care.[116]

The two key lessons for policy makers from this are *first* that a genuinely national approach is needed that involves all governments, consistent with the new Federal Government's commitment to ending 'the blame game'; and *second* that minor or incremental investments in Indigenous primary health care resourcing will (at best) produce minor or incremental changes in Aboriginal and Torres Strait Islander health status. Given the pattern of recent improvements, we can conclude that it is unlikely that such incremental changes will lead to any significant closing of the life expectancy gap between Indigenous and non-Indigenous Australians.

> A national approach to addressing Indigenous health disadvantage is needed that involves action by all Australian Governments, including increasing spending on primary health care.

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[116] We note that at the State / Territory level, increases in resourcing of health care to Aboriginal and Torres Strait Islander people have been largely through increases in Aboriginal people's use of public hospitals.

> Incremental increases in Indigenous primary health care
> resourcing will (at best) lead to incremental changes in health
> status which are highly unlikely to lead to any significant closing of
> the health gap between Indigenous and non-Indigenous
> Australians.

Effectiveness of primary health care

Many factors go towards making a health service effective, and we shall attempt to
elucidate some of them in more detail in the following chapter.

Certainly, maximum participation of the community, up to and including full
community control of services, is critical. The Aboriginal community-controlled health
sector argues forcefully that the goal is for all Aboriginal communities to be serviced
by a comprehensive primary health care under the full control of that community.
However, without in any way contradicting that aspiration, there is also a powerful
argument for the immediate provision of primary health care services to *all* Aboriginal
people, as part of their rights to health. With the establishment of such services
comes the responsibility for engagement with the community they serve, to maximise
that community's participation in their own health service, up to and including formal
community control. Other Aboriginal Medical Services in the region and their
representative organisations at a jurisdictional level have a vitally important role to
play in this process.

In addition, it is clear that the use of good evidence in designing primary health care
services is important. Certain key interventions – such as child and maternal health,
or chronic disease management – are essential investments in the health of
Aboriginal and Torres Strait Islander communities, and *all* primary health care
services, should deliver and be resourced to deliver *at least* these core services.[117]

Again, with the benefit of hindsight, it may be regretted that the Framework
Agreements following the transfer of health funding responsibility from ATSIC to the
Commonwealth Health Department, did not address the notion of the core services of
primary health care, and come to an agreement about what were the minimum set of
services that all primary health care services for Aboriginal and Torres Strait Islander
people, regardless of governance structures, should deliver.

The barriers to such an agreement at the time were considerable: no doubt
Government was concerned about the resourcing implications for such a set of core
services, and some in the community-controlled sector may have been concerned
that attempts to define a set of core services may have been used to impose a

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[117] Considerable work has been carried out in the Northern Territory by the community-controlled and government
sectors on defining and agreeing on 'core comprehensive primary health care services', which include clinical
services, support services (such as management and training), special programs (such as action on substance
misuse, nutrition, environmental health) and advocacy and policy functions. See AMSANT web site at
http://amsant.com.au/site/index.php?option=com_frontpage&Itemid=1

medical model on community-controlled services and subvert their independence. The evidence base for primary health care interventions was also relatively underdeveloped in Australia at that time.

Since then, at least some of the circumstances have changed.

First there is a clear commitment by the new Federal Government to close the life expectancy gap – an aim that is unlikely to be realised without significant additional investment in well-evidenced primary health care.

Second, the evidence itself has improved greatly since the mid-1990s about the particular interventions that are most effective.[118]

Third, some community-controlled health services have themselves become advocates of the need to ensure that evidence-based care is what they need to offer their communities, and indeed have become important sites where the conversation about imaginatively adapting the 'evidence' to local community priorities can take place. The productive nature of that conversation is reflected (as we shall see in the next chapter) in the dynamism and ability to solve problems of those services.

> A national approach to closing the health gap between Indigenous and non-Indigenous Australians should ensure that *all* Aboriginal and Torres Strait Islander communities have access to a comprehensive suite of core primary health care services (including for chronic disease and for maternal and child health) regardless of funding streams or administrative responsibility for the health service.

Conclusion

We would argue that the fact that the evidence in Australia linking life expectancy and mortality improvements to primary health care is suggestive, rather than direct as we see overseas, is not because of the failure of primary health care to make a difference.

Despite the lack of this direct evidence, many studies of Aboriginal and Torres Strait Islander health have concluded that primary health care is having an effect. This is borne out by the everyday experience of Indigenous people, concerned with their own and their family's health rather than the reflection of that health in statistics at the national or jurisdictional level.

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[118] For example, see Couzos, S. and R. Murray (2008). Aboriginal primary health care: an evidence-based approach. 3rd Edition, Melbourne, Oxford University Press.; Central Australian Rural Practitioners Association (CARPA) (nd). CARPA Reference Manual, CARPA.

At the local level, primary health services and programs may be having important effects on the health of the communities they serve, even if (for the reasons outlined above) these may not yet be directly attributable and measurable in terms improvements in life expectancy at a national or jurisdictional level.

It is to this local level evidence that we turn in the next Chapter.

4. Local evidence and lessons

So far in this report we have taken the 'big' view of the effects of primary health care on the health of Indigenous populations. We have looked at the strongest evidence (life expectancy, mortality rates) at the level of nations or (in Australia) States and Territories. The results show strong evidence internationally for the positive effect of primary health care, but weaker evidence within Australia.

We suggest that – despite the increased investment in Indigenous primary health care over the last ten years and some positive changes in the health status of the Aboriginal and Torres Strait Islander population – the relative weakness of the evidence in this country is primarily a result of the only modestly increased investment in primary health care and the continuing negative pressure of the social determinants of health.

The relative weakness of the evidence at the national / jurisdictional level, however, must be counter-posed to local evidence, from numerous sources, of the positive effects of primary health care in Aboriginal and Torres Strait Islander communities.

Some of this evidence includes outcome measures, including mortality. A selection of these is presented as case studies below.

However, there are a number of other services and approaches to which our attention was drawn during the consultations for this review. The data supporting the effectiveness of these services are backed by the opinion and experience of practitioners with a long history in the field, and are positive examples of Indigenous primary health care practice.

Central Australian Aboriginal Congress, Alice Springs[119]

Congress is one of the oldest and largest Aboriginal community-controlled health services in the country, providing a wide range of clinical and other health services. Their excellent data on service provision feeds into a continuous quality improvement cycle. Some key points about their service delivery model include:

- very high access rates, with nearly all Aboriginal people living in the catchment area being seen each year;

- a male health program to encourage (especially young) men to attend the clinic and to provide them with social and emotional well-being support;

- women's health and maternal care provided through Congress Alukura;

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[119] Personal communication from Dr John Boffa, Public Health Medical Officer, Central Australian Aboriginal Congress, and Central Australian Aboriginal Congress (2007) Business Plan Report 2006/07. Unpublished PowerPoint presentation.

- a life-course approach to health care, beginning with maternal health and child health, youth health (including primary prevention and early intervention services), adult health checks (with a concentration on effective clinical management of chronic disease), and support for older people;

- strong partnerships with other communities, including providing management and staffing support to a number of remote community health services in Central Australia;

- public advocacy on broader health issues, especially petrol sniffing and alcohol availability, and the social determinants of health; and

- strong participation at the Territory and national level in Aboriginal health policy, as well as broader issues of self-determination and community control.

Tasmanian Aboriginal Centre[120]

The Tasmanian Aboriginal Centre has over three decades of history in advocating for the rights and health of the Aboriginal people of that State. They have a strong emphasis on the effect that racism and the colonial experience have had – and continue to have – on the health of Aboriginal communities. Aboriginal community controlled health services are seen as being essential not just as 'neutral' deliverers of medical services, but also as important vehicles for the self-determination and independence which are the foundations of good health for communities.

The TAC's focus on racism as an important contributor to poor Indigenous health – and particularly to mental health problems and higher risk of behaviours such as smoking and substance abuse – is beginning to receive greater academic and research attention.[121]

Victorian Aboriginal Community Controlled Health Organisation[122]

VACCHO has recently published a list of case-studies of successful primary health care interventions in the community-controlled sector in Victoria. Usefully, they identify a number of key strategies for success in their region:

- the establishment of new services, involving extensive funding, advocacy, resources, planning, partnership-building and effort by both existing health services and the community itself;

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[120] Personal communication from Ms Heather Sculthorpe, Tasmanian Aboriginal Centre; Tasmanian Aboriginal Centre (2003) Public Health Issues for Islands of Small Populations: Tasmanian Aboriginal Perspective on Aboriginal Health Issues in Tasmania. Unpublished address to the Royal Australasian College of Physicians Annual Scientific Meeting, Hobart 2003. Heather Sculthorpe, Tasmanian Aboriginal Centre.

[121] Paradies, Y., Harris, R. & Anderson, I. (2008). The Impact of Racism on Indigenous Health in Australia and Aotearoa: Towards a Research Agenda, Discussion Paper No. 4, Cooperative Research Centre for Aboriginal Health, Darwin.

[122] Victorian Aboriginal Community Controlled Health Organisation (2007) Communities Working for Health and Wellbeing: Success stories from the Aboriginal Community controlled health sector in Victoria. Victorian Aboriginal Community Controlled Health Organisation and Cooperative Research Centre for Aboriginal Health.

LOCAL EVIDENCE AND LESSONS

- building strong partnerships with other organisations and with Government, with each partner bringing their expertise and perspective to a project;

- the need for a flexible approach that addresses the community's health priorities, as a fundamental component of community control

- building research and evidence, particularly to ensure that evidence' in the form of statistical data has is available to ensure that Aboriginal health issues are addressed;

- employment and training of Aboriginal community members, especially to provide opportunities for young people to become involved in the community and the health sector.

Redfern Aboriginal Medical Service, Sydney[123]

The oldest Aboriginal Medical Service, Redfern has played a leading role in health service delivery and Aboriginal health policy for over thirty years. In the early 1980s, long before the current concentration on child and maternal health became an accepted core part of Indigenous primary health care, AMS Redfern developed a formal comprehensive shared care ante natal program in collaboration with staff at the King George V Hospital in Newtown.

It was possibly the first ever shared care arrangement between a primary health care service and a large hospital. Under the agreement, Redfern provided routine antenatal care until the late stages of pregnancy with clients required to attend King George V for scheduled specialist consultations. Regular meetings were held between staff of the two organisations to promote clinical best practice and to encourage culturally sensitive service delivery within the Hospital's various facilities.

The program received strong community approval and was also highly successful in delivering clinical outcomes, such that after several years of operation, full term neonatal birth weight distribution was similar to the Australian average.

Case studies

We have already pointed towards possible reasons for the disconnect between the local and jurisdictional evidence of the effectiveness of primary health care. Simply put, well-resourced, locally-based primary health care services delivering strongly-evidenced and well-designed interventions, are not the rule in Indigenous Australia. Where they do occur, many such services or programs are not resourced to be able to document their health outcomes statistically. Fortunately, some do and it is to some of these which we now turn.

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[123] Personal communication from Dr Naomi Mayers and Dr John Daniels, Redfern AMS; Redfern Aboriginal Medical Service (nd.) The Aboriginal Medical Service shared antenatal care programme: an early case study in the efficacy of comprehensive, culturally appropriate primary health care. Unpublished paper.

Whereas the evidence in the previous chapters of this report arose directly from the formal literature search, in this section we use examples to which our panel of experienced practitioners and health service providers drew our attention.

We selected the following case studies not because they are somehow 'better' than what is being done elsewhere – we are confident that there are many primary health care services and programs doing equally good work – but because their successes have been documented as having beneficial health effects measurable by formal statistical measures, including mortality rates.

Utopia, Northern Territory[124]

Aboriginal people in remote Australia have argued for many years that living in outstations on their own land is an important basis for their good health. This argument has been dismissed in the recent past, with homelands being seen as inefficient in terms of resources and worse, as attempts to preserve 'cultural museums'.

Fortunately, one of the methodologically strongest attempts to measure changes in the health of an Aboriginal community at a local level took place in exactly this kind of environment: the Utopia region of the Northern Territory, some 250 kilometres north east of Alice Springs.

The traditional owners of the Utopia region were displaced from their lands into overcrowded remote communities and fringe camps of major towns during the 1950s and 1960s. In the 1970s, however, they gained freehold title to their land and returned to it, adopting a dispersed way of living in 16 outstations spread over 10,000 square kilometres of country. In re-establishing themselves on their traditional lands, the people of Utopia also set up a community-controlled primary health care service, Urapuntja, to provide health care to the outstations.

Two important studies have been published documenting the health of the Utopia communities. The first, published ten years ago, compared the health outcomes of people at Utopia (which was not named in the article) with those of people living at a large centralised Aboriginal community in Central Australia (also unnamed in the article).[125]

The first study found real differences in health status between adults in the two communities, with Utopia residents having significantly lower mortality largely dues to lower rates of alcohol related injury. They also had significantly lower hospitalisation rates, were less likely to have diabetes (although not significantly so), and had a lower average BMI (body-mass index).

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[124] Our thanks to Professor Kerin O'Dea for her participation in our key practitioner panel and her discussion of the findings from Utopia.

[125] McDermott, R., K. O'Dea, et al. (1998). "Beneficial impact of the Homelands Movement on health outcomes in central Australian Aborigines." ANZJPH **22**: 543-658.

These health benefits were taken to be largely the result of the more active outstation lifestyle with its higher level of reliance on bush foods, plus living away from the ready availability of alcohol. The cultural aspects of people living in harmony with the land and their own holistic concept of health were also seen to be important contributing factors.

Ten years later, a follow up study looked specifically at mortality rates since 1995 and trends in risk factors.[126] This study has confirmed the results of the earlier study, finding that all cause and cardiovascular disease mortality rates were lower at Utopia than for Northern Territory Indigenous people in general (although all cause mortality was still significantly worse than for non-Indigenous Territorians). There were also significant reductions in some risk factors, especially for cardiovascular disease, such as impaired glucose intolerance, high cholesterol, and smoking (in men); and a relatively low rate of hospitalisation for cardiovascular disease.

This study went beyond the earlier one to examine in more detail what might contribute to the better health of Utopia residents. In particular, the researchers looked at some of the social determinants of health to see if they might explain the difference. However, on all the usual measures – unemployment, low income, overcrowding, lack of education – Utopia fared somewhat worse than the NT Indigenous average; obviously if their health was better than average it was not due to the usual social determinants of health.

Instead, they conclude that outstation living with a better diet and greater physical activity, plus living more harmoniously with culture, family and land contributed to better health. However, they importantly identified the existence of the community-controlled Aboriginal Medical Service, and its provision of outreach (rather than just centre-based) care and chronic disease management and prevention programs such as well-person's health checks as an important contributor to better health.

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[126] Rowley, K. G., K. O'Dea, et al. (2008). "Lower than expected morbidity and mortality for an Australian Aboriginal population: 10-year follow-up in a decentralised community." MJA **188**: 283-287.

LOCAL EVIDENCE AND LESSONS

UTOPIA	
Measures	**Contributing Factors**
- lower mortality - lower cardiovascular disease mortality - lower rates of alcohol related injury - lower hospitalisation rates - less time spent in hospital - low rate of hospitalisation for cardiovascular disease. - lower rates of injury and infection - lower diabetes rates - reductions in some risk factors - less impaired glucose intolerance - less high cholesterol - lowered smoking in men; - lower BMI (body-mass index); - lower rates of hypertension in male non-diabetics	- outstation living - better diet - greater physical activity - distance from alcohol sources - community control - cultural factors - living in harmony with land, family and culture - primary health care - outreach services - chronic disease prevention, early detection and management

Townsville Aboriginal and Islander Health Service, Queensland

In 2000 the Townsville Aboriginal and Islander Health Service (TAIHS) established a Mums and Babies Program with the aim of addressing community concern surrounding pregnancy, birth and infancy outcomes in Indigenous communities in North Queensland.[127]

While run from an Aboriginal community-controlled health service, the program developed close links with the Queensland Health Department's Community Child Health Service and the Townsville Hospital's Institute of Women's and Children's Health) as well as Centrelink, James Cook University, and the Townsville Division of General Practice.

A multidisciplinary team with a high proportion of Indigenous staff provides comprehensive antenatal care, postnatal care, immunisations, growth monitoring, developmental screening and hearing screening for pregnant women, families, infants and young children. It also had a strong quality improvement program to monitor the effectiveness of the interventions.

An evaluation of the program found a number of significant benefits for women for women and children living in Townsville following implementation of the Mums and

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[127] Panaretto, K., M. R. Mitchell, et al. (2007). "Sustainable antenatal care services in an urban Indigenous community: the Townsville experience." MJA. **187**: 18-22. We understand that since this article was published there may have been some disruption to the program; the exact circumstances and seriousness of this are yet to be made clear.

Babies Program. Most importantly there were reductions in the number of preterm births and the perinatal mortality rate and an increase in mean birth weight.

These changes could be read as both a result of better access (with a significant increase in the number of antenatal visits and improvements in the timeliness of the first antenatal visit) and better quality antenatal care (with a documented increase in care planning, smoking cessation advice, antenatal education).

TOWNSVILLE, MUMS AND BABIES PROGRAM	
Measures	**Contributing Factors**
• reduction in the number of preterm births	• community-controlled and community-based
• reduction in the perinatal mortality rate	• collaborative approach
• increase in mean birth weight	o Aboriginal organisations and mainstream service providers
• significant increase in the number of antenatal visits	o government and non-government
• significant improvement in the timeliness of the first antenatal visit	o primary and hospital care
• improvement in the quality of antenatal care with a documented increase in care planning, smoking cessation advice, antenatal education	• primary health care
	o maternal and child health
	o multidisciplinary teams
	o Indigenous workforce
	• quality improvement approach

Aboriginal Maternal and Infant Health Strategy, New South Wales

The New South Wales Aboriginal Maternal and Infant Health Strategy began in 2001 with an overall goal of improving the health of Aboriginal women during pregnancy and decreasing perinatal morbidity and mortality.[128] The strategy included targeted antenatal / postnatal programs for Aboriginal women and infants; a state-wide training and support program for midwives and Aboriginal health workers who provided these services; and an evaluation of the pilot program.

In five of the six former Area Health Services where the strategy was implemented, a community midwife and Aboriginal health worker team were established to provide community based services for Aboriginal women in conjunction with existing medical, midwifery, paediatric and child and family health staff. The sixth region commenced their program later in response to identified community need.

The evaluation showed that services across the program were provided to 321 women in 2003 and 368 women in 2004. A number of results were documented, including slight decreases in the proportion of births to women aged less than 20 years and to the proportion of women who reported smoking in the second half of their pregnancy. Access improved, with the proportion of women attending for their

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[128] New South Wales Health (2005). NSW Aboriginal Maternal and Infant Health Strategy Evaluation. N. Health, University of Technology Sydney (2006). NSW Aboriginal Maternal and Infant Health Strategy Evaluation: Final Report. Centre for Midwifery Child and Family Health. Sydney, NSW Health,.

LOCAL EVIDENCE AND LESSONS

first antenatal care visit before 20 weeks gestation increasing from 65% in 1996-2000 to 76% in 2003. The perinatal mortality rate decreased from 20.4 per 1000 live births in 1996-2000 down to 14.2 per 1000 live births in 2003, although this was not statistically significant. The proportion of women who gave birth to preterm or low birth weight babies was unchanged over this period.

It must be noted that the methodology for the evaluation has not been well-explained and there was no attempt to determine the extent to which the program itself can be held responsible for improvements, nor to investigate in more than a cursory way the elements of the program that may have been responsible.

Aboriginal Maternal and Infant Health Strategy	
Measures	**Contributing Factors**
- births to women aged less than 20 years decreased - proportion of women attending for their first antenatal care visit before 20 weeks gestation increased significantly - proportion of women who reported smoking in the second half of their pregnancy decreased - perinatal mortality rate decreased (not statistically significant)	- multidisciplinary team approach (Aboriginal Health Worker / Aboriginal Health Education Officer plus midwife) - primary health care model - continuity of care - Indigenous care givers - training and support provided - community development approach - partnerships with other organisations - art programs, peer education

Audit for Best practice in Chronic Disease (ABCD)

The ABCD program is a continuous quality improvement (CQI) approach to improving chronic disease detection and management in Aboriginal primary health care services. It began in 2002 with twelve community health centres (both Government-run and community controlled) across the Top End of the Northern Territory; in 2006, it received additional funding from the Cooperative Research Centre for Aboriginal Health (CRCAH) and is being to extended to over 70 health centres in the Northern Territory, Queensland, New South Wales and Western Australia.

The ABCD program works with health centres to improve the delivery of care using a structured and collaborative approach to assess clinical performance against best practice guidelines. It also works to improve health centre systems that are needed to support best practice, such as clear staff roles and responsibilities, data and clinical management systems, and the availability of best-practice guidelines.

While long term positive health outcomes are yet to be documented, the evaluation report for the twelve initial communities found that over the first three years of the program participating health centres improved their levels of evidenced-based care, and interim health outcomes (in particular for diabetics) also improved.

LOCAL EVIDENCE AND LESSONS

The main limiting factor on improvements seemed to be failure of systems for follow up and adequate treatment, largely because of the pressure of acute care needs in the primary health care setting. Participation of doctors as part of the primary health care team is an important factor for success.

Audit for Best practice in Chronic Disease (ABCD)	
Measures	**Contributing Factors**

• Systems development:
  o improvements systems to support chronic illness care
• Processes of care
  o improvement in proportion of scheduled diabetes services delivered from 30% to 52%
  o improvement in proportion of diabetics with a record of a BP check within 3 months from 63% to 76%
  o improvement in proportion of diabetics with a record of an HbA1c check within 6 months from 41% to 72%
• Intermediate outcomes of care
  o improvement in proportion of diabetics whose most recent HbA1c check was <7% from 19% to 28%;
  o improvement in proportion of diabetics whose most recent total cholesterol was <4.0mmol/L from 23% to 30%.
	• continuous quality improvement approach
	  o use of data and evidence to improve local responses
	• systems within organisation to support best practice
	  o good data
	  o objective assessments
	  o evidence-based best practice guidelines
	• multidisciplinary primary health care teams
	  o clear roles and responsibilities
	  o community / staff participation and support
	• resourcing to allow concentration on non-acute tasks

Nganampa Health Council, South Australia[129]

Nganampa Health Council is an Aboriginal community controlled comprehensive primary health care service that has been operating on the Anangu Pitjantjatjara Yankunytjatjara Lands in the far north and west of South Australia since the mid-1980s. They operate health clinics in nine communities, and run a range of primary health care programs including aged care, sexual health, environmental health, health worker training, dental, women's health, male health, children's health and substance abuse prevention.[130]

Nganampa is operated on strong principles of community-control, with an elected Board of Management, all local clinics managed by Anangu, and employment of many community residents. However, the organisation also has a strong record of

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[129] Our thanks to Associate Professor Paul Torzillo, Medical Director of Nganampa Health Council, for participating in our key practitioner panel and contributing much of the unpublished data on which this section is based.

[130] See Nganampa Health Council web site at www.nganampahealth.com.au.

valuing technical, evidence-based approaches to primary health care delivery, and an approach that encourages continual evaluation.[131]

Despite the often extreme poverty and lack of access to education and employment, Nganampa has built up a strong record over twenty years of improving health outcomes for the Aboriginal community, particularly in the areas of child and maternal health (despite local social and economic problems, the health service has achieved birth weight outcomes better than the national Aboriginal average and comparable with the broad Australian population outcomes) and the control of sexually transmitted disease.

Nganampa Health Council	
Measures	**Contributing Factors**
- maternal health - sustained increase in mean birth weight since the establishment of the health service - decrease of low birth weight babies from 14.2% of births to 9.9% of births 80% reduction in perinatal mortality in the first ten years of the service (from 45.2 deaths per 1000 births to 8.65 deaths per 1000 births) - a greater than three-fold increase in attendance for antenatal care in the first trimester - child health - reductions in the proportion of children with moderate or severe growth failure - marked decline in the incidence of acute respiratory illness and diarrheal disease in children - sustained child immunisation coverage at or close to 100% - STD/HIV Control - reduction in syphilis on the APY lands from around 20% in 1984 to around 0.5% over the last six years - rates of gonorrhoea and chlamydia reduced to about one third of their previous level.	- community management and control - regional model with dispersed health service delivery sites - evidence-based approach - best practice clinical and population health services - employment and training - Aboriginal training and employment - multidisciplinary teams - long-term retention of key staff - improved access to secondary and tertiary care - provision of transport, accommodation and social support for clients travelling for hospital / specialist care - collaboration with other organisations on public and environmental health issues - advocacy role - on social determinants of health (housing, alcohol supply, food supply) - for equitable, needs-based resourcing of health services - quality management processes - health management information systems

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[131] Nganampa Health Council. (nd). "Strategic Plan 2007-2010." from http://www.nganampahealth.com.au/downloads/Nganampa%20SP%202010.pdf.

LOCAL EVIDENCE AND LESSONS

Maari Ma Health Aboriginal Corporation, New South Wales

In the mid-1990s, an innovative model of Aboriginal primary health care service provision began in the far west of NSW. In the light of continuing concerns about ill health and the need for better primary health care, the local community established an independent Aboriginal organisation (later to become Maari Ma) to deal with 'health business'. Rather than set up a stand-alone Aboriginal Medical Service the community in the far west decided to develop an integrated model of primary health care delivery with the health services provided in the region by the NSW Health Department's Area Health Service.

The collaborative approach (involving Maari Ma, the Greater Western Area Health Service, and funds from the Commonwealth for a coordinated care trial in the region) allowed Maari Ma to provide management for Health Services in the areas outside Broken Hill, while the Area Health Service provided various bureau services to Maari Ma and funding for three positions in the management team.

While generating some controversy at the time of the original agreement, the organisational interdependence provided protection against having to divert too much early effort into running a standalone organisation and allowed a continuing focus on core business.

A recent evaluation of the agreement, ten years after it was signed, found that the result had been increased funding for Aboriginal primary health care and consequent greater primary health care activity.[132] A number of health indicators show some improvement – although, as in most of these local cases, it is difficult to be absolutely certain of the extent to which these were the result of improved primary health care.

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[132] Griew, R. and S. Houston (2007). Review of Management Agreement between Maari Ma Health Aboriginal Corporation and Greater Western Area Health Service. Greater Western Area Health Service, Unpublished Report.

Maari Ma Aboriginal Health Corporation	
Measures	**Contributing Factors**

• improvements in access to antenatal care in the first 20 weeks of pregnancy
 	
• improvements in vaccine preventable hospitalisations
 	
• improvements in proportions of premature birth and low birth weight
 	
• reduced rate of acute ambulatory care preventable hospitalisations
	• increased investment by State and Commonwealth in primary health care
	  o increased primary health care activity levels
	
	• Indigenous management of 'mainstream' health delivery
	
	• employment of Aboriginal staff
	  o development and recruitment of Aboriginal Health Workers
	  o innovative and appropriate training programs
	
	• engagement of community leaders in mainstream health system development and delivery
	
	• evidence based programs to improve health service response to key priorities
	  o maternal and child health
	  o prevention and management of chronic disease
	  o coordinating with other sectors to address social determinants of health

Principles for success for primary health care services

What factor or combination of factors combine to make interventions successful is not easy to determine. Certainly, reproducing success across services, or whole jurisdictions, is not simply a matter of identifying 'what works' and 'doing the same' elsewhere: local conditions, local personnel or community members, local histories and health status, and the dynamic, continuous interaction and evolution of all these mean simply that 'one size does not fit all'. Nevertheless, we would extract the following important principles for success from the above case studies:

1. Genuine local Indigenous community engagement to maximise participation, up to and including formal structures of community control[133] or (for non-community controlled health services) an ethic and practice of community involvement.

2. Collaborative approaches that see primary health care services working with (a) other service sectors e.g. housing (b) other primary health care or community-based health service delivery organisations, whether government

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[133] Extensive work has been undertaken by the community controlled health sector to define 'community control'. Most importantly, the National Aboriginal Community Controlled Health Organisation defines it to be "…a process which allows the local Aboriginal community to be involved in its affairs in accordance with whatever protocols or procedures are determined by the Community ... [it] has its genesis in Aboriginal peoples' right to self-determination." See NACCHO Website http://www.naccho.org.au/definitions/communitycont.html.

or non-government and (c) other levels of the health care system, particularly hospitals / specialists;

3. <u>Delivery of core primary health care programs</u> vital to the long-term health of the community including but not restricted to (a) maternal and child health and (b) chronic disease detection and management;

4. <u>Evidence-based approaches</u> that are reflective, that are based on a continuous quality improvement approach and that involve the local community in adapting what is known to work elsewhere to local conditions and priorities;

5. <u>A multidisciplinary team approach</u> that crucially involves the employment of local Aboriginal and Torres Strait Islander community members, and which includes continuous training and support;

6. <u>Approaches which harmonise with local Aboriginal ways of life</u>, and in particular regionally organised service delivery and outreach services to dispersed populations;

7. <u>Adequate and secure resourcing</u> to allow focus on the management and delivery of non-acute care.

> The following principles are associated with primary health care interventions which show success at a local level:
>
> - genuine local Indigenous community engagement to maximise participation, up to and including full community control
>
> - a collaborative approach to working with other service providers
>
> - delivery of core primary health care programs such as maternal and child health and/or chronic disease prevention, detection and management
>
> - evidence-based approaches adapted to local conditions
>
> - a multidisciplinary team approach employing local community members
>
> - service delivery that harmonises with local Aboriginal and Torres Strait Islander ways of life
>
> - adequate and secure resourcing.

LOCAL EVIDENCE AND LESSONS

5. Conclusion

This report has taken a new approach to answering the question of how primary health care can contribute to 'closing the gap' in life expectancy between Indigenous and non-Indigenous Australia.

Rather than argue predominantly from case studies (which can draw the criticism of leading to 'policy by anecdote'), or alternatively from the resource deficit between mainstream and Indigenous Australia, we have attempted to take a more rigorous approach. This has involved a new examination of the foundation evidence about the effectiveness of primary health care on population health.

What, then, are the lessons to draw for policy makers and governments in Australia which have the aim of closing the health gap between Indigenous and non-Indigenous Australians within a generation?

We identify several key policy questions – and how the evidence in this report relates to them.

Do health care services matter?

The arguments of Thomas McKeown in the 1970s and the evidence from the social determinants of health have added greatly to our understanding of how critically important economic, social and political factors are in determining the health of populations. Increased understanding, however, of the causal pathways involved in the complex conditions affecting adult populations, including Indigenous people, and advances in medical care, have combined to weaken the more polemic manifestations of the "social determinants" position.

Nonetheless, this position has led to a persistent popular and political argument that health services are fundamentally irrelevant to 'closing the health gap'[134] and that economic and social approaches should be the focus instead.

The evidence does not support such a position.

Instead, the international evidence is clear about the positive effect of primary health care on the health of populations, and specifically on the health of Indigenous peoples. While unemployment, lack of education, poor housing, low income and social exclusion are all clearly associated with poorer health, the evidence shows that primary health care can 'offset' these effects to some extent, particularly through its

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[134] See, for a recent example, Pearson, C. (2008). Nanny's unhealthy regard. The Australian. 29 March 2008.

beneficial effects on the health of mothers and children and in the management of established adult disease, principally chronic disease.

The policy approach that makes most sense under such circumstances is not one that focuses *either* on the social determinants of health *or* on health services, but one that does *both*. Such an approach is advocated by numerous population health experts, most recently in Australia in the extensive examination of the burden of disease carried by Aboriginal and Torres Strait Islander people, which states that:

> *... these requirements [to address the social and economic disadvantages that contribute to the poor health status of Indigenous Australians] should not lead to inaction by health policy makers arguing that the social and economic problems should be tackled first. It is within the reach of appropriately resourced health services to reduce a sizeable proportion of the Indigenous health gap.*[135]

The evidence from this review strongly supports that conclusion.

Why have overseas gains not been reflected in Australia?

The evidence shows that Indigenous populations overseas have made gains in health that are attributable to primary health care. Their gains are, however, beyond that seen by Aboriginal and Torres Strait Islander communities as a whole.

We suggest that this is predominantly the result of under-investment in primary health care for Indigenous communities in Australia, compared to the large disadvantage they suffer. This is distinct from the large disadvantage that Aboriginal and Torres Strait Islander people suffer in many of the key social determinants of health such as education, housing, employment and income.

What gains have been made here in recent years have been the result of at best modest increases in primary health care funding against a backdrop where the social determinants of health have also not improved significantly.

Given the documented ability of primary health care to offset the effects of disadvantage, it is clear from this evidence that Aboriginal and Torres Strait Islander people are yet to fully benefit from what primary health care can deliver.

What needs to be done?

Given that primary health care services – along with action on education, employment, poverty, housing, etc – are an important part of improving the health of

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[135] Vos T, Barker B, Stanley L, Lopez AD (2007). The burden of disease and injury in Aboriginal and Torres Strait Islander peoples. Brisbane: School of Population Health, The University of Queensland.

Aboriginal and Torres Strait Islander communities, we identify two key policy aims for the Australian Government.

Guaranteeing universal access to primary health care

The comparison in this report of the development of primary health care for Indigenous people and the reduction of avoidable mortality, between Australia and other developed nations, suggests that Australia has underinvested in primary health care. A national commitment by all Governments together to significantly increased investment in primary health care for Aboriginal and Torres Strait Islander people is supported by the evidence.

At the local level, many Indigenous primary health care services are able to document better health outcomes for the communities they serve. However, it is unfortunately, not the case that all Aboriginal and Torres Strait Islander communities have access to such primary health care services. To the extent that such access is only partial, the ability to close the health gap will be, at best, partial.

Increases in Indigenous primary health care funding over the last decade have overwhelmingly been provided by the Australian Government, through increased grant funding from the Office for Aboriginal and Torres Strait Islander Health (OATSIH) and also improved access to the MBS and PBS for Indigenous communities. These increases have, however, been offset by rising health care costs and an increasing Indigenous population.

Nevertheless, many communities have benefited only partially from the increases in primary health care funding provided by the Australian Government. A joint national commitment by all Governments would result either in increased State and Territory investment in primary health care services (including through community-controlled services in their jurisdictions, through funds-pooling models or funding of services such as mental health or substance misuse services for which those jurisdictions generally have responsibility) or in increased Australian Government investment. There are also significant gaps within the areas served by Australian Government funded services. No Australian government is exempt from this call.

We note also the demand made in some previous programs for formal mechanisms of community-control to be established before primary health care services could be established.[136] As we have seen, maximum community participation in the running of primary health care is central to their success. However, some communities do not have the ability or desire to take responsibility for running a health service – at least in the short term – and it is problematic to require communities which are amongst the poorest and most disadvantaged in the country to demonstrate sufficient cohesiveness to set up and run their own incorporated organisation before they

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[136] For example, in some areas with the roll-out of the Primary Health Care Access Program.

receive an adequately resourced primary health care service. Already-established community-controlled services and their representative bodies may play a significant role in overcoming this barrier.

A fundamental policy aim must therefore be that all Aboriginal and Torres Strait Islander communities, whatever the governance structure they may choose, must be guaranteed access to the core functions of primary health care, under models that maximise the participation of the local community. This is equally true for urban, rural and remote areas, each of which pose their own challenges requiring imaginative and flexible solutions in the form of service provided.

The importance of evidence

Ensuring that all Aboriginal and Torres Strait Islander communities have access to primary health care will clearly cost money. However, achieving the greatest gain for any given investment in primary health care is also dependent on implementation of evidence-based best practice.

Services which have an evidence-base are more likely to achieve outcomes in health for the communities they serve. This evidence – in the shape of treatment protocols and a recognition of certain key interventions as an investment in long-term population health – have been increasingly well documented over the period since the transfer of Aboriginal and Torres Strait Islander health to the Commonwealth Health Department. In particular, maternal and child health and the early detection and management of chronic disease are critically important.

Applying this evidence effectively requires a recognition and respect for the diversity of health, cultural and social conditions at a local level, and in practice, attention to the conditions and capacity, needs and priorities of the local Indigenous community.

We would argue that it is no accident that many 'best-practice' models are those which emphasise genuine community engagement. It seems that whatever the benefits are in terms of local empowerment and employment (both important from a point-of-view that recognises the importance of the social determinants of health), community controlled health services provide fertile ground for 'the evidence' and the views, practices, priorities and needs of the local Indigenous world views to meet and inform each other.

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Appendix 1

Organisations and experts consulted

- Aboriginal Medical Services Alliance Northern Territory (AMSANT), Darwin

- Professor Ian Anderson, School of Population Health, University of Melbourne

- Professor Ross Bailie, Menzies School of Health Research, Darwin

- Dr John Boffa, Central Australian Aboriginal Congress, Alice Springs

- Professor Jonathan Carapetis, Menzies School of Health Research, Darwin

- Dr Sandra Eades, The Sax Institute, New South Wales

- Dr Steve Guthridge, Health Gains Unit, Northern Territory Department of Health and Community Services, Darwin

- Dr Shane Houston, Aboriginal Health, Northern Territory Department of Health and Community Services, Darwin

- Dr Naomi Mayers, Redfern AMS, Sydney

- Professor Kerin O'Dea, Department of Medicine, University of Melbourne

- Ms Joy Savage, Office for Aboriginal and Torres Strait Islander Health, Commonwealth Department of Health and Ageing

- Ms Heather Sculthorpe, Tasmanian Aboriginal Centre

- Mr Gavin Stewart, Coordinator AMHAT Project, Aboriginal Health & Medical Research Council of NSW

- Associate Professor Paul Torzillo, Central Clinical School, University of Sydney

Appendix 2

Interview outline for modified Delphi method panellists

We want to ask you about an Indigenous community (or communities) that you have worked with or of which you are aware where health (or some aspect of health) <u>improved</u> for the people there.

1. What about the health status of the people in that community improved?

2. What aspects of health improved? (e.g. infant and child health, nutrition, maternal health, adult health, health of old people)

3. How was this change measured? (e.g. service statistics, research / evaluation / observation)

4. Can you attribute at least part of this improvement to primary health care?

5. If PHC had an effect, what specifically about PHC was important?

   o Better access to services (including links to hospital / specialist services)

   o Specific programs (e.g. immunisations, child and maternal health, chronic disease management, social and emotional well-being, drug and alcohol interventions etc)

   o Organisation of the service (e.g. community involvement, evidence-based programs, workforce, resourcing)

6. If PHC did not have a direct effect, what caused the change in health status? For example, better housing, transport, education, local economy etc

7. Did the primary health care service have an indirect effect on the existence or shape on the factors that did contribute to better health? (e.g. through advocacy for better housing, environmental health etc)

8. Are there any published studies documenting the changes above? If so, where could we find them?

9. Are there other places where this has been written up – presentations, unpublished reports, conference papers? If so, are we able to access a copy?

10. Are you aware of other communities where primary health care may have had a positive effect on health? If so, where are they and who would be able to give us more information on these examples?

Thinking more generally about the effects of primary health care on the health of Aboriginal and Torres Strait Islander communities...

11. Who else do you suggest we speak to in order to understand these effects?

12. Nominate a second person who has a different perspective on these issues to yourself.