The Impact of Economic and Social Factors on Health

Report prepared by the Public Health Association of New Zealand for the Department of Health

Primary writer: Helena Barwick

Editor: Jill Nuthall
Public Health Association of New Zealand
PO Box 11-243, Wellington, New Zealand
Phone: (04) 382.8806 Fax: (04) 382.8817
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The Public Health Association of New Zealand
The major determinants of health status in New Zealand, as in every other
country, are economic and social in origin. Despite this, very little attention is
paid in either the research or policy areas to these issues. The vast bulk of Vote
Health for example, is spent on the end stages of the disease process; less than
two percent of the health vote is spent on traditional public health. Similarly,
approximately 75 percent of the health research budget is spent on basic
biomedical research. The recent health reforms have focused almost entirely on
the health services and largely ignored the more significant social factors
affecting health outcomes.

This important document prepared by the Public Health Association, under
contract to the Department of Health, provides a literature review of the role of
socio-economic factors in health. This review covers the available New Zealand
facts and figures and the relevant international literature. It is hoped that the
Public Health Association will be in a position to update this report periodically.

This report is timely because the socio-economic determinants of health are not
receiving the attention they deserve. With the emphasis on market forces in the
reorganisation of health care and as the basis of economic and social policy in
general, the importance of wider factors in health is being seriously down-played.

This review points repeatedly to the importance of factors external to the
individual in determining his or her health status. Obviously, there are things that
individuals can do to improve their health status and we should all be
encouraged to take these steps. Paradoxically, the New Zealanders most able to
look after their own health are those who are already healthy. People at the
lower end of the social, economic and educational spectrum often do not have
the resources to make the necessary positive changes to their daily living habits.
This is graphically illustrated by Maori health statistics. Presently, the main role of
the Maori in the health care system is as patients not as the partners which the
Treaty of Waitangi requires.

Increasing inequalities in health status in New Zealand mean policies should be
designed to influence social and economic factors in the interests of all New
Zealanders and vetted for their impact on all stratas of society.

Drawing on a wide range of research, this literature review is part of a tradition
going back to the foundation of the World Health Organisation in 1948, with its
emphasis on broad determinants of health. However, repeated re-statements of
the importance of the social and economic factors in health do not necessarily
lead to action. The crucial task now facing New Zealanders is to translate the
research findings summarised in this document into appropriate and tangible
health policy actions. The health implications of a wide range of significant social
and economic decisions must be brought to the attention of policy makers, just as the environmental impact of many economic decisions are now on the policy agenda. The central issue is the identification of the economic and social factors most amenable to change.

The Association calls for action to reduce the widening income differences between rich and poor in New Zealand. This is the key to improving the public's health. Many other factors compound the risk of those in lower income groups; some of the most significant are employment, education and housing. For Maori ethnic discrimination plays a major part and is a compounding factor in all these areas and must be seriously addressed.

The Ministry of Health and the Public Health Commission should also comment on and be part of policy decisions by government and other institutions which impact on health. Intersectoral collaboration must become a reality and not remain Ottawa Charter rhetoric. Intersectoral collaboration gathers momentum when all the sectors are moving in the same direction or when the health implications are overwhelming, such as in the case of tobacco control or road safety. It is much more difficult to make progress in areas where vested interests are moving in opposite directions, such as on alcohol policy.

Progress will not be easy, particularly at this point of history. However, the work done by the Public Health Association in preparing this document, within the context of partnership as determined by the Treaty of Waitangi, lays a solid foundation for the next stages.

Robert Beaglehole
President, Public Health Association

Philippa Howden-Chapman
Project Advisory Committee

The opinions expressed in this foreword are presented on behalf of the Public Health Association of New Zealand alone and do not claim to reflect the official views of the Department of Health.
ACKNOWLEDGEMENTS

We knew that to undertake a venture like this in three months was ambitious, not to say rash. This is not The Black Report, but it is a beginning. To our knowledge it is the first time in New Zealand this has been attempted.

The strength of the Public Health Association is its unique network of skilled people from over forty different disciplines. We used a process which enabled us to tap their expertise and that of international colleagues to trace the most significant research and review the drafts.

A steering group managed the project on behalf of Public Health Association's Executive Committee and the national Secretary, Pauline Barnett provided advice at crucial stages. The steering group was convened by Jill Nuthall and made up of two representatives of the Department of Health, Warwick Brunton and Wendy Edgar, Philippa Howden-Chapman, who was selected for her broad knowledge of the field, and the appointed staff Helena Barwick and Amanda Craig.

We would like to pay tribute to Wendy Edgar and Warwick Brunton for their vision and for keeping the project finely focused, and the staff and librarians from the Department of Health for their constant help.

We acknowledge Helena Barwick the primary writer for her clear writing, for consistently applying her rigorous professional standards, and for stepping into the breach when another writer was unable to continue.

Amanda Craig was our thorough, unflappable detective, tracing all leads, sorting and acquiring books and papers and constantly communicating with the participants.

We express our gratitude to the excellent team of people who worked under great pressure to write the chapter on Ethnicity - Maori and to help achieve a balance that reflects New Zealand/Aotearoa today. The team that met this challenge comprised Paparangi Reid and Bridget Robson of Te Manawa Hauora, Wellington School of Medicine, Lorna Dyall, Manager Te Punī Kokiri Health Portfolio and a member of PHA's Executive Committee, and Neil Pearce and Philippa Howden-Chapman, both of the Wellington School of Medicine. We owe special thanks to Philippa Howden-Chapman for coordinating that team effort.

Robin Kearns, of the University of Auckland, provided expertise and guidance for the housing chapter even when he was in Canada. Neil Pearce made a special contribution to the chapters on income, unemployment and class and to the report as a whole. We acknowledge the many people who provided advice and information (see Annex 1) and the others they, in turn, approached. In addition we thank Vivienne Kane, Don Matheson, Robin McKinlay, Nell Pearce, George
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Without doubt there is more to be discovered. We invited people with relevant up to date New Zealand research to send us their articles in the hope that this is just the first edition and that our Association will have the opportunity of improving and updating the material on a regular basis.

It has been an enlightening experience and a great team. We thank the Department of Health for the opportunity to advance the knowledge of the impact that economic and social factors have on health.

J Jill Nuthall
Editor/Executive Director
Public Health Association of New Zealand
December 1992
Executive Summary

This report was prepared by the Public Health Association for the Department of Health. It was designed to provide a review of some of the research examining the link between socio-economic factors and health. The factors identified as having a potentially significant impact on health, and therefore included in this report, are: income, education, social class, unemployment, housing, ethnicity, gender, family structure, and area of residence. The report is not comprehensive and it is recognised that other social and economic factors could have been included, particularly if the Maori concept of health had been further explored.

Members of the Public Health Association, expert in the subject areas covered by the report, identified relevant literature which was compiled into an extensive bibliography. It was from this bibliography that literature was selected for inclusion in the report; priority was given to key research and reviews, recent research, and New Zealand material.

Income is acknowledged as being one of the key socio-economic variables influencing health status. The health of a population is affected more by the degree of inequality of income distribution than by the level of wealth per se. Maori, the elderly, the unemployed and single parents are groups overrepresented amongst those on low income.

There is substantial evidence that a low level of education is associated with poor health status, and that those with the lowest level of education are disproportionately at risk of ill-health. The 1991 Census showed that 42 percent of the total population, and 62 percent of the Maori population, left school with no academic qualification. There is a two-way link between health and education: poor health can lead to poor educational achievement, and a low level of education can contribute to poor health status.

Lower social class is consistently linked with higher death rates, both overall and from most major causes of death. There has been substantial New Zealand research into the association between social class and health status which confirms that the findings of overseas research hold true for this country. Studies of Maori and Pacific Island Polynesian men have demonstrated that social class differences in mortality are also apparent within these populations.

The unemployed have worse physical and mental health than the employed. This is a consistent finding from research using a range of assessment methods. Two significant subgroups within the unemployed are the long-term unemployed and the young unemployed; research indicates that the health impacts of unemployment are different for these subgroups, with long-term unemployment being particularly detrimental to health.
Men have higher death rates than women at all ages and have a shorter life expectancy. Women experience more ill-health than men and make greater use of health services, much of which is for care related to reproduction. Maori women have significantly worse health status than non-Maori women.

Children in single parent families are at greater risk of health problems than other children. The single parent family is the fastest growing family type in New Zealand and 21 percent of New Zealand children are being reared in single parent families. The health of the married is better than that of the non-married, and childless people experience better health than parents. Domestic violence is one of the health risks of being part of a family.

The health status of a suburb or region is associated with the socio-economic status of that area. People with multiple disadvantage, and high health need, are grouped into communities which reflect that disadvantage.

Housing has three types of direct impact on health, arising from the cost, the condition and the location of the housing. Lack of housing or substandard housing substantially increases the risk of ill-health, especially for children; this risk may last well beyond the period of housing problems. Substandard housing is a problem for those with least choice in the housing market such as Maori and Pacific Island Polynesians. Those with a psychiatric disability have particular difficulty obtaining adequate housing.

Being without private transport, or without access to public transport, affects health status both directly, by reducing access to health services, and indirectly, by reducing social networks beneficial to good health.

Many Maori experience the health problems associated with low income, low level of education, unemployment, low socio-economic status, and inadequate housing. However, these factors do not fully account for the significant difference in health status between Maori and non-Maori which persists despite a promising reduction in child mortality statistics. A number of Maori authors have focused on additional contributing factors including access to culturally appropriate and safe health care.

This report has not addressed the many and complex linkages between the socio-economic factors reviewed. The importance of such linkages is nonetheless acknowledged.
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Introduction

It has long been observed that just as there is a wide variation in health status between countries of the developed world and the developing nations, so too is there a disparity between the health status of different groups within the same country. (Spoonley et al. 1990, Smith 1988, Townsend and Davidson eds 1988) Similarly, researchers interested in measuring the health status of communities and nations over time have identified variations in health status, and sought explanations by examining other aspects of social and economic life. (Brenner and Mooney 1983, Brenner 1987a, 1987b, Colledge 1982)

There has been for some time wide acceptance that the 'medical model' of health, in which ill-health is considered to primarily be the result of exposure to single agents, is at best only a partial explanation of the variation in individuals’ and communities' health. (Spoonley et al. 1990, Townsend and Davidson eds 1988) This has led to a shift in emphasis from a medical to a social model in the search to explain disparity in health status.

This report reviews the literature on the main socio-economic factors which influence health status. The emphasis of the report is on economic factors associated with recession, and key health related sectors. The report was compiled over a three month period and is not to be compared with the comprehensive reviews which exist on this subject such as The Black Report. This report draws on these reviews and includes more recent research and New Zealand material. The scale of this review did not allow all of the social or economic factors which affect health status to be discussed. Significant omissions include: occupational health; the impact of the environment on health; health issues related to life stage; family violence; unintentional injury and road traffic crashes. Access to health services is included, but is not a major focus of this report.

Literature included in the review was identified in consultation with members of the Public Health Association of New Zealand working in the areas reviewed by the report. An extensive bibliography was compiled, from which the references contained in the report have been drawn. Particular effort has been made to identify, obtain and review New Zealand research in this report.
Chapter 1. Health and How it is Measured

What is Health?

The measurement of health, vital to a study of what influences it, has been a vexed issue for many researchers. Most acknowledge that health in its full definition encompasses much more than the absence of disease, and many cite the definition of health contained in the World Health Organisation's constitution:

"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." (Noack 1987:18)

However, more recent World Health Organisation literature has moved away from this definition primarily because it conceptualises health as an ideal, and therefore unattainable, goal. A more recent WHO definition encapsulates two concepts, health balance and health potential.

"Health balance refers to the maintenance of the physical, psychological and social balance of any social group or individual, health potential to the group's or individual's capacity to cope with environmental and psychosocial demands or stresses." (Noack 1987:25)

In New Zealand it is also important to consider the Maori concept of health which encompasses dimensions including wairua (spiritual), hinengaro (mental), whanau (family), and tinana (physical). Maori define health broadly, and recognise the importance of the environment. (Department of Health 1984)

Health Indices

In practice however, most research into the impact of social and economic factors on health status is concerned with negative impacts, that is indicators of ill-health, disability or disease.

The influential Black Report, a major discussion of the impact of socio-economic factors on health first published in 1980, based much of its evidence on the data on death certification available through the Office of Population and Census Surveys (OPCS). In a later paper Sir Douglas Black, chairperson of the working group responsible for The Black Report, acknowledged the limitations of these data and applauded the progress being made on developing more sophisticated indices of health status. (DHSS 1980, Black 1991)

There are a number of ways of measuring physical and mental health. Those commonly found in the research reviewed for this report include the following:

- Much of the data is based on rates of mortality or morbidity. Although everyone only dies once, the proportion of people who die in any given year (the death rate) varies between different social groups. These differences in death rates reflect differences in life expectancy in that groups with a low life expectancy will also have a high death rate.
Mortality statistics are the most commonly used measure of physical health. Both age-specific mortality data and death rates from particular diseases are widely used. Mortality data are often used in the research into health status as mortality is easily definable and data is reliably collected. However, mortality rates cannot provide a full picture of people's health as they do not reflect the incidence of such chronic and disabling conditions as arthritis, which while they do not feature as causes of death, may cause misery and loss of independence.

Morbidity data record the incidence of illness, or episodes of ill-health. These data are less reliably collected than mortality data although some countries, including New Zealand, keep statistics on: the new registrations of major diseases such as cancers, the occurrence of injury through accident, and the registrations of communicable diseases. Morbidity data are more likely to reflect the incidence of diseases treated at hospitals than in the primary health sector.

Health risk characteristics or behaviours such as obesity, smoking, and alcohol use are sometimes compared across populations to throw light on the health status of different groups.

Self-assessment of health status is a frequently used measure in research. It may include self-report of incidence of illness, working days lost, as well as respondents' subjective assessment of their state of health. There are several different measurement tools designed to facilitate self-assessment of health status.

Physiological measures such as blood pressure have been used in some studies, as has the measurement of physical characteristics such as height. The expense of clinical assessment of health status has militated against this being widely used.

Clinical services measurement is the data collected on frequency and pattern of use of health services. These data can be compared across different populations to draw conclusions about health status.

Rates of suicide and deliberate self-harm are frequently used measures of the mental health status of a community.

Often groups of indicators will be used to measure health status. This may be informally, or by way of specially designed assessment tools, the most widely used of which is the General Health Questionnaire, a self-administered screening test for detecting non-psychotic psychiatric disorder.
Chapter 2 Methodological Issues in Measuring the Influence of Socio-Economic Factors on Health

Types of Methodology

The body of research on the link between socio-economic conditions and health is extensive. This report has identified several hundred studies devoted to exploring the relationship between income, employment, recession, socio-economic status and health. The studies aim to establish whether there is a relationship between socio-economic characteristics and health, and if so, how strong it is. Some researchers also discuss whether conclusions can be drawn about the nature of such a relationship, and any possible implications for health and social policy.

This report has reviewed three main types of quantitative research in this area:

1. **Aggregate or time-series research** deals with trends over time. This type of research explores what is happening within populations rather than for individuals.

2. **Cross-sectional studies** compare the health status of groups or individuals for whom social and economic conditions differ. Cross-sectional studies are a "snapshot" of one point in time.

3. **Longitudinal studies** follow individuals or groups over time to see whether a change in income or employment status is associated with particular health outcomes. This type of methodology is used more with variables which may change over time, such as income and employment, than for studying social class which tends to remain the same throughout life. The particular value of longitudinal studies is that they can more readily take into account the order of events and thereby give stronger indications of cause and effect.

Amongst the statistical methodologies, longitudinal studies seem to give the most support to the thesis that socio-economic characteristics impact upon health status. There is further discussion of the strengths and weaknesses of each methodological approach in Annex 2.

Social Class

Most of the socio-economic variables linked to health discussed in the literature reviewed in this report are fairly readily defined. For example the unemployed are those without work but actively seeking work; level of education is a term describing formal qualifications achieved; income is the source of an individual's or family's monetary support.

Social class is more difficult to define. The traditional classification of social class has been by occupation. Although it has long been recognised that this is an imperfect tool, changes in society have meant that fewer people stay within an occupational group lifelong, and its value as an indicator of social class has therefore further diminished. Writing in 1991 one of the authors of *The Black Report*, Sir Douglas Black, said this about the use of occupation as an indicator of social class:

"To begin with, the system has major flaws which perhaps reflect its origin when few women worked and there was little unemployment; an instrument of social analysis which allocated married women to their husband's occupation, and the unemployed to their most recent previous occupation must have progressively weakened the changing status of women, and the incidence of mass unemployment...But it is also important to recognise the limitations of the limitations, which do not seriously affect our analysis of the male employed
population nor - even more important - of their infants and children . . . " (Black 1991:25)

Black describes an alternative index of social class as being the use of area identified by using local indicators of deprivation. A review of literature describing research using this approach is included in Chapter Eight. (Black 1991)

Much of the work done on the links between social class and health in New Zealand has been restricted to males of working age, with the authors acknowledging the limitations of an occupation-based classification system:

"... the study of mortality was confined to working class males age 15-64 years. Death certificate occupational information in women was considered too unreliable for social class categorisation. Even in the case of the never-married women, less than 50% could be classified by social class." (Kawachi et al. 1991:394)

The chapter on Social Class in this report predominantly reviews research which has used an occupation-based classification of social class. It is recognised that this makes the findings more meaningful to men actively engaged in the labour market, than to women, the unemployed and the retired.

Methodological Issues

As with other areas of social science research, it is not possible to show conclusively that a particular event causes a particular outcome on health status, even when the statistical relationship is strong. In areas such as unemployment, income, and social status, it is rarely possible or ethical to intervene by conducting experiments, so conclusions are usually drawn from observation rather than experiment.

As a result there are difficulties in isolating particular causes for subsequent events. Even in cases where a feature such as poverty has been shown to be associated with poor health status, it is not possible to be certain whether it is that or another - perhaps unmeasured - feature of the environment which is principally influential.

A British Medical Association publication prefaces its discussion of the literature linking social factors and health with these comments:

"Despite the difficulties that exist in identifying causal processes in social science, it is often necessary to take action on the basis of evidence that is not fully conclusive . . . . Although individual studies of the relationship between deprivation and health often provide only limited evidence, many such studies have been conducted, using different methodologies, and have yielded broadly similar results. This contributes to the weight of the conclusions that can be drawn from such studies." (British Medical Association 1987:4)

Many commentators have explored the nature of the relationship between socio-economic variables and health. One social policy researcher describes this development within research into the effects of unemployment thus:

"... there has been something of a shift from merely documenting relationships between unemployment and its presumed consequences, to attempting to account for the processes that give rise to them." (Miles 1987:223)
Other writers emphasise that a clear understanding of the processes that link economic characteristics to health status is necessary to guide the selection and implementation of social policies in this area. (Smith et al. 1990, Blane 1985)

There have been a number of attempts to represent the processes diagrammatically, some of which are included in Annex 3.

Broom concludes her discussion of the social distribution of illness in Australia with these comments:

"However it is important to try to establish the order of causality because of its implications for policy. If the first formulation (illness causes poverty) is substantially correct, attempts to contain social welfare spending are unlikely to succeed while the health of the population is neglected. If the second formulation (poverty causes illness) is closer to the truth, efforts to improve health must be matched by attention to working and living conditions. When both health and welfare spending are subject to tight constraint, the time for serious attention to these matters has arrived." (Broom 1984:916)

While direct causality may be difficult to demonstrate, the weight of the research reviewed in this report suggests that health planners must take account of social factors in assessing health need and health status within their country.
Chapter 3 Income

Key Findings:

• Such studies that have been done have confirmed the association of income with health.

• The health of a population is affected more by the distribution of wealth within that population than by the level of wealth per se.

• The elderly, already suffering poorer health through age, have substantially reduced incomes following retirement.

• It is a widely held view that income is one of the key socio-economic variables influencing health status.

• Research on the impact of income on health is not extensive, largely because accurately establishing income is problematic.

• New Zealand research in this area tends to have been qualitative rather than quantitative.

The study of the impact of income on health is problematic. Income is only one measure of the wealth of an individual, family or community. The basis of wealth, the significance of assets, and the contribution of property in joint ownership are hard to measure. (Mutchler and Burr 1991) This chapter reviews only literature relating to income.

Studies concerning the effects of income on health status reviewed by this report used a variety of ways of calculating income; these include self-reported income and official statistics where available. The United States and Canada both appear to gather official statistics on family income, whereas British research tends to rely on extrapolation from socio-economic classification, information about benefit levels, and self-report. (Wilkinson 1992, Rice 1991, Wilkinson 1989, Shah et al. 1987, British Medical Association 1987, Ross and Huber 1985, Moylan et al. 1984)

The consensus of those reviewing the influence of economic and social factors on health status is that the effect of low income is one of the leading socio-economic variables, perhaps the most significant. (Smith 1990, British Medical Association 1987, Townsend and Davidson eds. 1988)

However, it does not seem to have attracted the same amount of research attention as do the effects of unemployment and social class, although income is clearly related to each of these other variables. Wilkinson, writing on income and mortality, commented:

"It is widely accepted that, in some contexts, income and standard of living are important determinants of health... Yet, when it comes to explanations of the socio-economic differences in health in industrial societies, there is no consensus on the role of income, and almost no good evidence." (Wilkinson 1986:88)
The Health Divide, which followed and updated The Black Report, includes this comment:

"There have been few studies in this country of the direct effect of income on health, partly because of the enormous difficulties encountered and partly because of political sensitivity. To be meaningful all sources of income would have to be assessed including the value of fringe benefits, property etc., and such statistics are not readily available in this country." (Whitehead 1987:299)

The issues of income distribution and poverty are central to both The Black Report and The Health Divide although as Wilkinson, when discussing these reports, points out:

"...not so much on the basis of any direct research evidence on the association between income and health as in the belief that low incomes are central to the various measures of deprivation with which ill-health is associated." (Wilkinson 1986:89)

In an effort to circumvent these difficulties, the British Medical Association Board of Science and Education discussed income in terms of supplementary benefit scale rates, which made allowance for differences in people's necessary spending for dependants and housing costs. Using supplementary benefit levels as the poverty line, the discussion paper identified an increase from 12 percent of the population living in poverty in 1979 to 17 percent in 1983, and attributed this increase largely to the growth in unemployment during that period. This paper linked poverty and low income to inadequate housing and reduced spending on food and fuel leading to poor nutrition and cold or damp environments, all of which are identified as health risks. (British Medical Association 1987)

A Canadian study identified that one in five children under 16 lived below the poverty line in 1983. These children were overrepresented in homes headed by:

- single mothers
- unemployed parents
- Canadian Native people
- immigrants

These children had twice the infant mortality rate; were two-and-a-half times more likely to die of an infectious disease; and had twice the rate of accidental death as the children of the nation as a whole. Other problems identified as being associated with poverty were: iron deficiencies, anaemia, chronic ear infection, dental decay, mental retardation, learning disability, poor school performance and increased suicide rate. (Shah et al. 1987)

Four studies attempted to identify which of the socio-economic variables of occupation, income and education had the greatest impact on health. Three of these studies found that income was most significantly associated with poorer health, followed by education and finally occupation. The fourth study found level of education to be a better predictor of good health. Two of these large studies - the Canada Health Survey and that using the Australian Health Survey data - controlled for the effects of age in reaching this conclusion. (Winkleby at al. 1992, Hay 1988, Broadhead 1985, Broom 1984)

A study of health status, health insurance coverage and income in the United States revealed that those with lower family incomes were more likely to assess their health status as poor than those on higher incomes. They were also more likely to make heavier use of primary and secondary health care services. (Rice 1991)
Another American study using a national sample of 680 married couples, and self-reported income data, associated low income with increased levels of depression in both men and women. Depression was measured using a tool designed to identify and quantify the depression of community populations, rather than clinical depression. In this study low income was found to have a stronger impact on the depression levels of men, women’s levels being more sensitive to education and age of children. (Ross and Huber 1985)

**Income Distribution and Income Reduction**

Wilkinson, one of the leading British commentators on income, social class and health, undertook both a cross-sectional and a time-series study of the link between income distribution and life-expectancy in several countries. He concluded:

> "The relation between income distribution and life-expectancy is sufficiently strong to produce significant associations in analyses of cross-sectional data and of data covering changes over time. . . . Overall there is clear evidence of a strong relation between a society's income distribution and the average life-expectancy of its population." (Wilkinson 1992:167)

Most striking amongst the countries included in this research was Japan, which has both the highest life-expectancy in the world, and the most egalitarian income distribution of any country on record. In Britain, by contrast, income distribution has widened since the 1980s and mortality rates amongst working-class people have increased. (Wilkinson 1992)

Wilkinson also examined the relationship between changes in income and the mortality rates of various occupations over a 20 year period. He chose this method as he considered that the relative earnings of different occupations were unlikely to reflect changes in the characteristics of the people in those occupations. He argued that this provided some protection against the results reflecting other personal characteristics of income recipients. He found that as the incomes of some occupational groups declined so the death rates of those groups rose, and that as income increased death rates diminished. (Wilkinson 1989,1986)

**New Zealand Research**

The 1991 Census revealed that within the total population:

- 52 percent of men and 76 percent of women had incomes under $20,000.
- 59 percent of one parent families had incomes under $20,000.
- 8 percent of two parent families had incomes under $20,000. (Department of Statistics 1992a)

Within the Maori population:

- 67 percent of men and 85 percent of women had incomes under $20,000.
- 80 percent of one parent families had incomes under $20,000.
- 16 percent of couples with children had incomes under $20,000. (Department of Statistics 1992c)
The Christchurch Child Development Study, more fully discussed in Chapter Seven, included income as one of the measures of "family economic situation". The study found that rates of hospital admission varied with family economic and material circumstances, and that children from low income families and families with depressed material conditions were at greater risk of hospital admission. Similarly rates of utilisation of preschool health and education services were lowest among children from low income families and families facing financial problems. (Fergusson et al. 1986, 1984)

There are two recent qualitative studies reporting the experiences of those on government benefits, who are consequently in the low income band of the population. Neither Freedom Nor Choice, the Report of the People's Select Committee, presented the views of those affected by benefit cuts and price rises in 1991 and 1992. Hand to Mouth contains interviews with a small number of people about the difficulties of living on a long-term benefit. (Craig 1992, Soloman 1990)

New Zealand data exist on the average proportion by which a man's income drops after retirement. In 1986 the median drop was 30 percent from the annual income earned between 55-60 to earnings between 60-64. There was a further 30 percent cut in this new income level as a man entered the 65-69 age group - a reduction of over 50 percent of his pre-retirement income. This demonstrates that most retired people will be in the lower income bands within 10 years of retirement, and their health status will be influenced accordingly. (Royal Commission on Social Policy Vol I 1988).

Explanations

A review of the possible mechanisms linking poverty to ill-health is included in a Canadian review of childhood poverty. The authors suggest that a lack of parental income could contribute directly to child ill-health in the following ways:

- Unsafe crowded housing could increase the number of accidents and the incidence of communicable diseases.
- Low quality food could lead to nutrition related disorders.
- Lack of money for transportation and child care could affect the use of health care, and lack of money for medicine could affect treatment.
- Inadequate parental supervision and possibly ill-health may arise if parents have to work long hours to maintain their income.
- Lack of income may generate stress related disorders. (Shah et al. 1987)

The explanation favoured by the British Medical Association Board of Science and Education is that families in poverty are likely to have to cut their spending on food and fuel. These, it was argued, are the largest flexible components in the budget of poorer households after fixed costs such as rent and rates. (British Medical Association 1987)
Chapter 4 Education

Key Findings:

- There is substantial evidence that a low level of education is associated with poor health status.

- Those with the lowest levels of educational achievement are disproportionately at risk of poor health.

- The link between education and health is two-way:
  - a low level of education is associated with poorer health
  - poor health can lead to low educational achievement

- The 1991 Census shows that 42 percent of the total population, and 62 percent of the Maori population, left school with no academic qualification.

- Of four large studies ranking of the impact of income, occupation, and education on health, three found income to be most significant, followed by education and finally occupation. The fourth study found level of education to be the best predictor of health status.

Although it is widely accepted that there is a strong association between years of education and health characteristics, research on this correlation proved elusive.

This review draws on the following sources:

- Statistics on the level of educational achievement of New Zealanders from the 1991 Census.
- A United States Government publication presenting and discussing national statistics on education and health.
- Two recent reviews of the literature on the impact of education on health.
- A survey of the association between infant mortality, per capita income and adult illiteracy in developing countries.
- Research into the impact of socio-economic status on health which uses level of education as one of the variables.

Statistics

The 1991 Census revealed the following statistics about the highest qualification with which people left school:

- 42 percent of the total population left school with no academic qualifications. For the Maori population the statistic was 62 percent.
- 21 percent of the total population and 20 percent of the Maori population had School Certificate in one or more subjects.
24 percent of the total population, and 14 percent of the Maori population, had Sixth Form Certificate, University Entrance (in one or more subjects), Higher School Certificate, or Higher Leaving Certificate.

14 percent of the total population and two percent of the Maori population had University Bursary, Scholarship or equivalent qualification. (Department of Statistics 1992a, 1992c)

**Major Studies**

1. In 1991 the National Center for Health Statistics produced a report documenting the relationship between level of education and health in the United States. The data were collected in a nationwide survey by household interview. This report adjusted its data for age, acknowledging that younger people tend to have higher levels of education than older people. The summary of the report included these words:

"For all the measures of health status included in this report, low levels of education were highly associated with poor health and relatively higher levels of education were associated with good to excellent health." (National Center for Health Statistics 1991:2)

The key comparisons from which this conclusion was drawn were:

- Those with little education were substantially more limited in activity due to chronic conditions than were the well educated.

- Short-stay hospitalisations were found to be much more frequent among the poorly educated.

- Self-assessment of ill-health was substantially higher among the poorly educated.

- Lower levels of education were associated with an increased prevalence of chronic conditions, but fewer reported acute conditions. Those with higher levels of education reported the reverse.

- These differences persisted when income was controlled in data analysis.

2. A group of Spanish researchers studied the correlation between infant mortality, per capita income and adult illiteracy in 103 countries which between them contained 90 percent of the world's population. The study found that countries with high rates of adult illiteracy also had significantly higher rates of infant mortality. There was a similarly strong correlation between per capita income and infant mortality. The authors concluded that adult illiteracy can be considered a good predictor of infant mortality in the countries included in this survey. (Tresserras et al. 1992)

**Education as a variable in socio-economic status**

Four large studies attempted to determine which of the three components of socio-economic status - income, occupation or education - had the most powerful effect on health.

1. Drawing on data from the New South Wales Health Survey, Broom found income to be the variable that had the most impact on health; of education she concluded:
"One of the clearest social correlates of several kinds of morbidity is education. For most ages and measures of morbidity there is a clear increase in the proportion of people who are comparatively healthy as we move from lower to higher levels of education." (Broom 1984:914)

2. In a study based on data from the 1977-1978 Australian Health Survey the author found that the correlation between health and affluence was the strongest, and that between health and occupation the weakest. Standardisation for age did not affect these results. Of education he wrote:

"For males, all four of the morbidity indicators show a significant relation to education. It is noticeable that the greatest differences occur between the least educated and the rest, with much smaller differences between the intermediate and most educated categories... Thus the relative disadvantage in terms of health status is disproportionately greater for those with minimum education." (Broadhead 1985:94)

3. The Canada Health Survey included education among the variables on which data were collected. Once again, income was found to correlate most strongly with health status, and occupation least strongly. These relationships remained the same when age was a controlled variable. Of the finding that educational level was associated with poor health, this author wrote:

"Education is a more stable measure of SES than occupation or income. That is, highest educational attainment is usually set fairly early in the life cycle. Education is thus more likely to influence health than vice-versa. Therefore the relationships observed between education and health status are more likely to indicate that social causation mechanisms are at work." (Hay 1988:1322)

4. A recent study of 2,300 people in California found that level of education had the strongest and most consistent relationship with health and showed that higher risk was associated with lower levels of education. The authors ended their discussion with these words:

"There can be no SES measure that is universally valid and suitable for all populations. However, if economics and time dictate that a single parameter be chosen, and if the research hypothesis does not dictate otherwise, this study suggests that higher education, rather than income or occupation, may be the strongest and most consistent predictor of good health." (Winkleby et al. 1992:819)

A study of 700 married couples in the United States explored the different factors that contributed to depression in husbands and wives. The variables explored included income, education, age, and age of children. The authors found an interrelationship between education and income:

"Poverty and lack of education have a synergistic effect on economic hardship, each making the effect of the other worse. A person who is poorly educated needs more money to fend off economic hardship than does a person who is well-educated. Each year of education increases the subjective value of a dollar. Education may provide knowledge and information on how to budget household expenses, where to get the best buy for one's money, when paying less is a good strategy and when it simply buys an inferior product, what foods are nutritious, how to keep the children healthy, and when a visit to the doctor is necessary and when it is not. People who are well educated also tend to have friends who are well educated and are thus better able to help them out with information and support." (Ross and Huber 1985:323)
Explanations

Grosse and Aufrey, in a review of the literature on literacy and health in both developed and developing countries, suggested a number of explanations for the relationship between these factors:

- The possession of literacy, or education, increases the ability of an individual or a community to gain more knowledge and resources. This includes the increased ability of the educated to seek and find work, leading to higher income; and increased expenditure on food, housing and medical care resulting in better health.

- Level of education improves access to health information - most health information comes in written form, making it virtually inaccessible to people with limited literacy. Similarly, people with limited literacy cannot discover how to access appropriate health services, and are too embarrassed to seek help.

- Unhealthy lifestyle practices - people with limited literacy are more likely than others to smoke, take little exercise, have poor nutrition and fail to participate in health screening programmes.

- The link between literacy and fertility behaviour - the connection between the number of children, the intervals at which they are born, and the health of those children is what links fertility to health and, therefore, literacy to health.

- The impact of education on family structure - the education of women greatly changes the traditional balance of family relationships and has a significant impact on child rearing practices.

- The influence of the community - a better educated community will want, demand, and be able to afford better public health facilities.

These authors concluded:

"A strong and consistent association of literacy with mortality has been demonstrated to be significant, independent of culture or level of economic development and where either nations or individuals were the units of analysis . . . . Literacy is a powerful tool for coping. It is a critical factor interacting with others in a complex way in promoting the health of populations." (Grosse and Aufrey 1989:293-294)

A large Canadian review of the literature added two further linking mechanisms:

- Stress and low self-esteem - People with limited reading skills tend to suffer stress and low self-esteem; this compounds their difficulties in finding work, socialising with others and seeking medical help.

- Dangerous work environments - those with limited literacy have a higher than average level of occupational accidents mainly because the types of jobs open to them are more likely to be dangerous.

The author of this study commented:

"Dozens of different types of research studies using a variety of indicators have documented this negative impact on virtually all aspects of health . . . . Furthermore, when the relative contribution to health of different factors is studied, the results indicate that literacy (or education) is the major variable affecting health." (Perrin 1989:2)
Chapter 5 Social Class

Key Findings:

- Social class measurement is based largely on occupation. It is therefore a much less useful measure when considering women, children, the elderly and any other group not "economically active".

- Along with occupation, the other factors often used to determine social class are education, income and area.

- Lower social class is linked with higher death rates overall, and with higher rates of most of the diseases which are the common causes of death.

- Social class differences in mortality are widening.

- There is a substantial body of New Zealand research on social class and health which confirms the findings of overseas studies.

Although it is recognised that social class is a concept which has no single measurement, historically it has been largely determined by occupation (Black 1991, Maskill 1991, Arber 1987). The main reason for this is that occupation tends to be amongst the data reliably recorded on death certificates, and is therefore readily correlated with cause of death.

Much of the research into social class has used the classification system developed by the office of the British Registrar General. This classifies occupations into five classes:

1. Professional
2. Managerial
3. Skilled manual and non-manual (sometimes subdivided into IIIa and IIIb)
4. Partly skilled
5. Unskilled

It is recognised that this system has major drawbacks as it is of limited use when assigning social class to women, who participate in the work force to a lesser extent than men. Nor does it help determine the social class of children, the elderly or the unemployed, few of whom are "economically active".

These drawbacks have led other researchers to develop and use alternative mechanisms for determining socio-economic status or social class. The most common indices to be used instead of, or added to, that of occupation are education and income. (Kawachi et al. 1991, Pearce et al. 1991a, Phillips et al. 1991, Taylor and Quine 1991, Pearce and Howard 1986) Another variable considered by some researchers to be important is the nature of housing tenure. (Williams and Lloyd 1990, Maskill 1991)

The research reviewed in this chapter, however, is largely based on the classification of social class by occupation, and the findings are therefore more pertinent to the health of men, particularly working men, than to other groups in the population.
Overseas Research

The Black Report adopted the Registrar General's classification of social class based on occupation. The report found that low social class was strongly correlated to ill-health. The summary of the report included these comments:

"Most recent data show marked differences in mortality rates between the occupational classes, for both sexes and at all ages . . . . A class gradient can be observed for most causes of death, being particularly steep in the case of diseases of the respiratory system. Available data on chronic sickness tend to parallel those on mortality . . . . Inequalities exist also in the utilisation of health services, particularly and most worryingly of the preventative services." (DHSS 1980)

The Health Divide included occupational class and other indices in its definition of socioeconomic class and concluded:

"Whether social position is measured by occupational class, or by assets such as house and car ownership, or by employment status, a similar picture emerges. Those at the bottom of the social scale have much higher death rates than those at the top. This applies at every stage of life from birth through to adulthood and well into old age.

Neither is it just a few specific conditions which account for these higher death rates. All the major killers now affect the poor more than the rich (and so do most of the less common ones). The less favoured occupational classes also experience higher rates of chronic sickness and their children tend to have lower birth weights, shorter stature and other indicators suggesting poorer health status." (Whitehead 1987:351-352)

Marmot and Rose conducted a study of British civil servants in the mid 1960s to compare the association between social class, as assessed by grade of employment, and mortality from a wide range of diseases. They found a steep inverse association between mortality and social class defined in this way. The research design was repeated with a new sample between 1985 and 1988 and very similar results were achieved. These studies were unique in that all of the sample were in stable employment and in non-manual jobs. Nevertheless, strong social class differences were observed within this population. (Marmot et al. 1991, Marmot 1986)

In a review of almost 100 pieces of research conducted since 1980, and examining the link between socio-economic indicators and health, Smith, Bartley and Blane came to the following conclusions:

- Social class differences in mortality are widening.
- Better measures of socio-economic position show greater inequalities in mortality.
- Health inequalities have been shown in all countries that collect the relevant data.
- Social selection and measurement artefacts do not account for mortality differentials.
- Social class differences exist for health during life as well as for length of life.
- Trends in the distribution of income suggest that further widening of mortality differentials may be expected. (Smith et al. 1990)
Other studies covering Australia, Britain, Scotland, Canada, Sweden and the United States confirm some or all of the above conclusions. These studies contain examples of aggregate, cross-sectional and longitudinal methodologies. All of the studies use large sample sizes from 2000 to 1.5 million. (Bell and Lumley 1992, Skurray and Ham 1992, Kreitman et al. 1991, Kogevinás et al. 1991, Power 1991, House et al. 1990, Vagero and Ostberg 1989, Hay 1988; Miller and Wigle 1986, Wilkinson 1986, Broadhead 1985)

A study of health and social inequities in Switzerland, which has standards of living and life expectancy amongst the highest in Europe, revealed substantial health differences based on socio-economic status. The Swiss results are of political and scientific interest in that they suggest that the average wealth of a community has little bearing on its health differentials. (Lehmann et al. 1990)

**New Zealand Research**

There has been a considerable body of New Zealand research on the effects of social class on health. Publications by Neil Pearce and others not only confirm the findings of overseas studies, but give an indication of the extent of social class inequalities in health status.

In a three part study of research based on statistics from the years 1975-1977 Pearce, Davis, Smith and Foster examined the association of male mortality with social class. They used both the British Registrar General's system of social class classification, and the Elley-Irving scale which gives a heavier weighting to income from employment than does the British system. Comparing national mortality data with social class derived from census data, the authors found that:

- The lower social classes had mortality rates significantly higher than those of the upper social classes.
- The mortality rate of the lowest class was approximately twice that of the highest class, a bigger differential than that identified in British research.

This analysis was repeated using data from 1985-1987, at which time the authors found that social class mortality differences were undiminished despite the continuing decline in overall mortality. (Pearce et al. 1991, Paul 1985, Pearce and Howard 1985, Pearce et al. 1984, Pearce et al. 1983a, Pearce et al. 1983b)

In their 1986 paper on occupation, social class and male cancer mortality, Pearce's and Howard's findings were generally consistent with those of recent British studies, with the mortality of most cancers (liver, larynx, lung, buccal cavity, stomach) being more prevalent amongst lower socio-economic classes, but mortality from some cancers (multiple myeloma, malignant melanoma, and lymphatic leukaemia) was particularly high in upper social classes. (Pearce and Howard 1986)

Kawachi, Marshall and Pearce examined the impact of the overall decline in mortality from coronary heart disease on the distribution of this disease amongst social classes. They concluded that the greatest declines in coronary heart disease over the past decade had occurred in the upper socio-economic groups which had the lowest death rates to begin with; and that the disparity between social classes in death rates from this disease had actually increased. (Kawachi et al. 1991)

This line of research was further developed in a study designed to investigate whether class differences in access to cardiac surgery could explain social class inequalities in mortality from coronary heart disease. This was done by assigning a socio-economic status to patients who had undergone cardiac surgery at Dunedin Hospital in the three year period 1987-1989. The authors concluded that social class inequalities in access to
cardiac surgery did not appear to explain the observed inequalities in mortality from coronary heart disease. (Phillips et al. 1991)

The effect of ethnic group on the social class differences in male mortality was examined by Pearce and others. The researchers analysed data from three groups of men, Maori, Pacific Island Polynesian and other New Zealand men. They found strong social class mortality gradients within each group with Maori mortality rates being approximately 50 percent higher than those in the "other" group. The rates for Pacific Island Polynesians were between those of the other two groups. (Pearce et al. 1984)

Explanations

The Black Report proposed four types of theoretical explanation of the relationship between health and inequality based on social class. These have been the basis of much comment in subsequent literature. The four theories are:

1. **The artefact explanation** which suggests that the apparent relationship between health and socio-economic factors is merely a feature of the way they are measured. The failure of health inequalities to diminish over recent decades is explained by the lower social classes having reduced in size by virtue of their healthier members becoming upwardly mobile.

2. **Natural and social selection** suggests that one of the key determinants of social class is health status, that those with better health are more likely to be found in the upper classes and those with poorer health in the lower classes. In this explanation of inequality, social class and health are causally linked, with social class dependent upon health.

3. **Materialist or structuralist explanations** define the relationship between social class and health as causal, with health being the dependent variable. Class differences in health are attributed to structural factors such as the production and consumption of wealth. These explanations require changes in the way society gives access to resources, and both uses and rewards labour, if inequalities are to be addressed.

4. **Cultural/behavioural explanations** also define the relationship between social class and health as causal, and as with the previous theory, identify health as the dependent variable. From this point of view class gradients in health are the result of social class differences in behaviours such as diet, drinking, smoking, exercise, vaccination, ante-natal care etc. The remedy for the ill-health of those in lower socio-economic classes lies largely in the hands of individuals and the medical profession as health educators. (DHSS 1980)

Other commentators have attempted to evaluate these theories against research and available data. In *The Health Divide* Margaret Whitehead argued that cultural and behavioural theories go some, but not all, of the way to explaining the relationship between socio-economic factors and health. Her review of the evidence led her to the conclusion that material and structural factors such as housing and income were also very important in an understanding of health inequalities. Whitehead wrote:

"The weight of evidence continues to point to explanations which suggest that socio-economic circumstances play the major part in subsequent health differences. . . . But can such life-style factors account for all the observed differential in health between different social groups? The short answer is: no. When studies are able to control for factors like smoking and drinking, a sizeable proportion of the health gap remains and factors related to the general living conditions and environment of the poor are indicated." (Whitehead 1987:304)
A similar exercise of reviewing the evidence against the four explanations proposed in *The Black Report* was undertaken by Blane. As Whitehead did, he dismissed the first two theoretical positions as not being substantiated by the evidence, and found that the truth lay in some combination of the latter two theories. Blane argued that although the cultural/behavioural explanations are usually considered to be of greater importance, this is because some behaviours have been taken out of their social context. His conclusion is that both the cultural/behavioural and the materialist explanations are supported by the research. (Blane 1985)

Fox, Goldblatt and Jones analysed British data on occupation, employment, and mortality from 1971-1981, and compared their findings with the theories outlined above. They concluded that:

"... the major explanations for such differentials should not be sought among artefactual or selection theories. ... the observations we have made, for example about health-related selection, should encourage those searching for explanations of class differentials for particular causes of death to look to environmental and behavioural factors rather than to social mobility." (Fox, Goldblatt and Jones 1986:47)

Wilkinson, who has researched and written extensively in the area of class and health, also examined available research for evidence to indicate which of the above theories came closest to the truth. His review focused particularly on the research on mortality differentials. He had this to say about the first two theories:

"We can sum up the evidence on selective social mobility by saying that although there is evidence that social mobility is affected by ill-health and/or health potential, its contribution to observed class differences in health is probably always small in relation to the overall size of mortality differentials. At older ages, the contribution may become almost insignificant." (Wilkinson 1986:10)

Wilkinson went on to examine mortality differentials and the trends in them, and argued that the Registrar General's system of classification of occupational classes actually allows the full extent of inequity to be understated. (Wilkinson 1986)

In a paper exploring the aetiology of inequalities in health, Hart reviewed the explanatory theories as being distinguished by the role they assign to the individual as opposed to the environment and external factors. This review of research found that selection and cultural/behavioural theories, resting as they do on individuals' intrinsic qualities or behaviours, were an inadequate explanation for health inequalities. This author found strong support in subsequent research for *The Black Report's* conclusion that the socio-economic environment was the principal source of health inequality. (Hart 1986)

In summary, *The Black Report* concluded that structural aspects of the way society is organised were the most likely explanation for inequalities in health, supported by cultural/behavioural theories. Subsequent reviews have concurred that these two explanations are those best supported by the evidence, although there is some disagreement about which is the more potent explanation.

New Zealand researchers Pearce, Davis, Smith and Foster offer some possible explanations for the social class differences in mortality revealed by their research. These authors claim that mortality patterns appear to be directly or indirectly related to a number of factors, which can be grouped into three categories:
1. **Access to and utilisation of health services.** These factors they summarise by quoting Hart's inverse care law, "the availability of good medical care tends to vary inversely with the need of the population served." (Hart 1986)

2. **Specific occupational hazards** including the danger of accidents and occupational exposure to industrial chemicals.

3. **Lifestyle factors.** This includes those which have a direct causal effect on mortality and morbidity such as smoking, diet and exercise; and those with an indirect effect such as housing, nutrition, living and working conditions and psychosocial factors. (Pearce et al. 1983)

**Strategies Addressing Inequities in Health**

Most of the literature reviewed in this report does not contain discussion of possible strategies to alleviate the inequalities in health, but rather restricts itself to the research question of whether in fact such inequalities can be proved to exist, and what the processes of causality might be. The discussion of ways of reducing health differentials belongs in the arena of social policy rather than social science research. However, each of the theories of the causes of health inequality outlined in *The Black Report* does point towards certain approaches to address those inequalities.

- Cultural/Behavioural strategies focus on the individual, attempting to influence such health risk behaviours as smoking, drinking, poor diet, or lack of exercise. These strategies are based on the assumption that cultural/behavioural factors are primarily responsible for health inequalities, and that to change individuals' behaviour is the most effective way of reducing these differentials.

- There are strategies that start with a particular health problem known to be more prevalent in some sectors of society than others. This may lead to a health policy action programme for, say, cardiovascular disease, which might include information on preventative measures, availability of treatment services, and health education.

- Materialist or structural strategies are based on an acceptance of structural and environmental features of society and include what Dahlgren and Diedrichsen call "sectoral" strategies. These are designed to address causes of ill-health related to particular sectors in society such as the housing sector, the labour market, or the transport sector. Strategies include providing the decision-making bodies of each of these sectors with relevant facts about the linkages between ill-health and whatever is known about its causes and distribution. (Dahlgren and Diedrichsen 1986)
Chapter 6 Unemployment

**Key Findings:**

- The unemployed have higher subjectively and objectively assessed levels of physical and mental ill-health.

- Unemployed men have a significantly higher mortality rate than the male population as a whole. The wives of unemployed men also have higher mortality rates.

- The mental health of those school leavers who do not gain employment is significantly worse than that of those who find work.

- The "sick" amongst the unemployed are not a static group.

- Suicide and deliberate self-harm are associated with unemployment.

- Death rates increase during times of economic recession, and decrease during times of economic growth.

- People often appear to recover from the initial shock of job loss, but mental health deteriorates if the period of unemployment goes beyond about three months.

- There is little New Zealand research into the impact of unemployment on health. What exists is small scale and often unpublished but findings generally support overseas research.

The effects of being without paid employment have been studied most aggressively during periods of high unemployment - the depression of the 1930s and the economic recession of the 1980s.

The seminal research on the effects of unemployment on health was undertaken in the years of the depression of the 1930s. Although it is apparent that some associations are the same as those found in later research, the effects of unemployment upon income were clearly much greater in the 1930s when little or no government support was available (O'Brien 1986). For this reason the current review concentrates on later studies as it is considered they bear closer relation to today's experience.

The literature on the comparative health of women in the paid workforce and those who work caring for children and managing homes has also not been included in this review of the effects of unemployment. Statistics on women's employment status are much less readily available and most commentators consider those that are available to be somewhat misleading.

With the rising level of unemployment in New Zealand and other countries during the past decade stimulating increased research, it has become clear that "the unemployed" are a far from homogenous group. The unemployed include:

- Those who have experienced periods of unemployment whilst between jobs
- Those who have been consistently unemployed for over a year and are considered to be long-term unemployed
• Younger people who have never had a job and have no immediate prospect of one. (Easton 1990, Shirley et al. 1990, Royal Commission on Social Policy Vol I 1988, Smith 1988).

In New Zealand in 1990 45 percent of the total unemployed were under the age of 25. Rates of unemployment for Maori were three times those for Europeans, and slightly higher than those for Pacific Island Polynesians (Easton 1990). Research indicates different health impacts for each of these groups. (Banks and Ullah 1988, Warr 1987, Warr and Jackson 1985)

**Major Studies**

There are a small number of key studies on the health effects of unemployment which are widely quoted and discussed.

• A major piece of British research is known as The OPCS Longitudinal Study. This looked at the mortality of men aged between 15 and 64 who were seeking work in the week prior to the 1971 census. The data were collected by the Office of Population Censuses and Surveys which followed up a one percent sample of the population of England and Wales for the 10 years following the census. In 1971 four percent of the one percent sample were unemployed - about 6000 men. The mortality of these unemployed men in the years between 1971 and 1981 was 36 percent higher than for men in the sample as a whole (standardised mortality ratio 136). Perhaps even more striking was the fact that the mortality rate of the wives of men who were unemployed was significantly higher than that of all married women in the sample (standardised mortality ratio 120). These disparities existed even when allowance was made for the effects of age and social class on mortality. (Moser et al. 1984)

A follow-up study was completed by the same researchers three years after the 1981 census, to determine whether the change in the size and structure of the labour force between 1971 and 1981 had made any difference to the higher mortality rate of the unemployed. The results of this survey were similar to those of the earlier research. (Moser et al. 1987)

• The British Regional Heart Study was a prospective study of cardiovascular disease in over 7,000 middle-aged men selected at random from general practices in 24 towns around Britain. Each man was asked about his employment history, occupation, and the duration of his current employment or lack of it. If he was unemployed he was also asked whether this was for health reasons - the answer to this question subdivided the unemployed group into those who said they were unemployed because of ill-health, and those who regarded their unemployment as unrelated to illness. As was expected, the "ill unemployed" group showed a greater prevalence of the three health indices of chronic bronchitis, obstructive lung disease and ischaemic heart disease than either of the other groups. The "well unemployed" had higher rates of ischaemic heart disease when compared to the employed group. (Cook and Shaper 1984, Cook et al. 1982)

• The British DHSS Cohort Study was based on a national sample of 2,300 men who became unemployed in the autumn of 1978. Personal interviews were held with 72 percent of men in the sample group one month after they registered as unemployed, and again after three months. Sixty-five percent were successfully re-interviewed after 12 months, during which 12 percent of those interviewed had been continuously unemployed. While the study was not specifically designed to look at the effects of unemployment upon health, questions were asked at all three interviews about any disabilities or health problems that might affect respondents' availability for work. At
the second and third interviews additional questions were asked about the use of health services, and subjective judgements of changes in health since registering as unemployed. This study proposed a number of tentative conclusions:

- The 'sick' amongst the unemployed were not a static group. There was movement up and down the health scale with the number of improvements matched by the number of deteriorations.

- There was little evidence of a decline in health standards even for those continuously registered.

- The unemployed tended to use health services more than the population as a whole; there was little difference in usage between short-term and long-term unemployed. (Moylan et al. 1984)

- The Canada Health Survey provided a cross-sectional analysis of the physical and emotional well-being of employed and unemployed workers. The sample of respondents who were usually active in the work force was 14,313 which included 1,803 (12.6%) who were unemployed. The survey used three main data collection methods: interview, self-administered questionnaire and physical measurement. In this survey, the unemployed group showed significantly higher levels of distress; had greater short-term and long-term disability; reported a higher number of health problems; and made greater use of health services. The blue collar unemployed were found to be significantly more vulnerable to physical illness, whereas the unemployed with a professional background reported more psychological distress. (D'Arcy and Siddique 1985)

- The British General Household Survey is an annual representative sample of about 15,000 private households which provides self-reported data on a range of topics including employment and health. These data have been analysed in a number of ways to test the strength of the link between unemployment and ill-health (Townsend and Davidson 1988). Arber, using data from the 1981 and 1982 surveys, concluded that the unemployed reported consistently poorer health than those in paid work, and furthermore that social class variations in health were more marked amongst the unemployed than the employed. (Arber 1987)

- M Harvey Brenner undertook a number of studies comparing mortality rates and patterns of economic growth in different countries. He found that both for mortality rates from specific diseases, and for overall mortality there were close correlations with indices of economic growth. If the economy was growing death rates were lower, but in times of recession death rates increased.

- Platt's 1984 review of 156 studies found that suicide and deliberate self-harm were more prevalent amongst the unemployed. Undertaking some research of his own in Edinburgh the following year, Platt found the suicide rate for unemployed men to be 29 times that for men in paid work. Moreover, the rate of suicide was strongly related to the length of unemployment, suggesting that people recovered from the initial shock of redundancy, but then became steadily more distressed if they did not find work within a year. (Platt 1984, Platt and Kreitman 1985, both cited in Shirley et al. 1991)

- Factory closure studies. There is a significant body of research on the effects of factory closure on the redundant workforce. In a recent review article Morris and Cook examined ten studies of the effects of factory closure on the health of redundant workers. The authors conclude that:

  - The short-term mental health of employees was clearly adversely affected by loss of employment.
- Mental health appeared to improve on regaining employment.
- Any effects on physical health were likely to become apparent only in the long-term and were thus not detected by these studies. (Morris and Cook 1991)

The findings of these major studies have been supported by a large number of smaller studies conducted in the United States, the United Kingdom, Denmark, and Finland. (Franks et al. 1991, Briggs et al. 1990, Martikainen 1990, Lee Hamilton et al. 1990, Eales 1988, Dowling et al. 1987, Kessler et al. 1987, Iversen et al. 1987, Westcott 1987, Beale and Nethercott 1985, Linn et al. 1985, Stokes 1984)

**Youth Unemployment**

Rapid increases in unemployment have fallen disproportionately upon some groups in society. Young people are one such group, and the effect is exacerbated if they have few qualifications. In New Zealand in 1990 45 percent of the unemployed were under the age of 25 (Easton 1990). The impact of unemployment on those who may never have had a job has been studied by a number of researchers, most of whom have concentrated on mental health indices rather than physical health, as physical health in teenagers tends to be good. A longitudinal study currently underway in Ireland is looking at the physical as well as the mental health of unemployed young people. (Cullen et al. 1987)

During 1978 and 1979 Banks and Jackson administered the General Health Questionnaire to 1,750 teenagers who had only modest academic achievement, at the point of school leaving. Each respondent was followed up 12 months, and again 18 months, after they had left school. The follow-up indicated that those teenagers who had found paid work, or who had gone on to further education, had better mental health than those who were unemployed, although there had been no difference in the mental health scores of the two groups while at school. The teenagers who subsequently found work demonstrated better mental health in the follow-up testing than they had while at school; whereas the other respondents showed a deterioration in their psychological well-being. (Banks and Jackson 1982 cited in Banks and Ullah 1988)

Banks and Ullah undertook another large study of youth unemployment in 1982 and concluded that:

- Prolonged periods out of work did not affect people's desire to work nor increase their acceptance of their unemployment.
- In young people there was no evidence that longer-term unemployment had a more deleterious effect on mental health than shorter spells.
- The factors that further reduced the mental health of those out of work were:
  - financial worries
  - social isolation
  - lack of activity
  - continually frustrated efforts to find employment.
  (Banks and Ullah 1988)

A 1982 study of comparable design involving 800 school leavers had similar findings - the mental health of school leavers who subsequently found a job was considerably better than of those who became unemployed upon leaving school. (Donovan et al. 1986)

A prospective Swedish study which followed up 1000 pupils from their last year of compulsory education until two years later established that those who had not found work demonstrated:
• An increase in psychosomatic and psychological symptoms.
• A decrease in organised social activity.
• Increased abuse of alcohol and narcotics.
• Increased utilisation of health care services.

This study also found that girls were more exposed to unemployment, and that unemployment led to more negative effects among them. (Hammerstrom et al. 1988)

**Long-term unemployment**

Warr provides the information that in 1986 in Britain, 40 percent of the officially counted unemployed had been continuously out of paid work for more than a year. Analysing New Zealand statistics, Easton noted a nine percent increase in those unemployed for six months or longer from 16 percent in 1981 to 25 percent in 1987. (Warr 1987, Easton 1990)

Warr summarised his review of the literature on the health effects of long-term unemployment, which included his own research, with these comments:

"Research has indicated that the impact of job loss is typically rapid, so that affective well-being is typically impaired at an early stage. Further deterioration is likely in the period after job loss, until a plateau of particularly poor mental health is reached after between three and six months." (Warr 1987:232)

People who were continuously unemployed throughout the 12 months of the DHSS Cohort Study experienced a drop in income of approximately 10 percent during the year of their unemployment, largely as the result of a decrease in eligibility for unemployment-related benefits. This drop in income level further exposed them to the health risks of poverty, as well as to those of unemployment. (Moylan et al. 1984)

A study in Sweden over a two year period compared the psychological and physiological health indicators of four groups of women: those who had become unemployed and had been offered a programme of organised social support, activities and training; those who had become unemployed but not been offered such a programme; those employed in insecure jobs, and those employed in secure jobs. Each group contained 100 respondents. This study concluded that job loss has a significant impact on both mental and physical health, but that the effects of long-term unemployment are mainly of a psychological nature. (Brenner and Levi 1987)

**Moderating variables**

The literature on the impact of socio-economic variables on health indicates that not all the unemployed, those on low incomes, or those in the lower social classes have poor health. This has led some researchers to an examination of what might be called the "moderating variables", those things which make people less likely to suffer the ill-health effects of social and economic disadvantage.

These things have been found to reduce the impact of unemployment on health:

• Younger people and those nearing retirement were not as badly affected by unemployment as the middle-aged.
• Short rather than long periods of unemployment.
Financial security.

Absence of other major life stresses.

A supportive social environment. (Banks and Ullah 1988)

In writing about the effects of unemployment, Payne, Warr and Hartley reviewed literature which concluded:

- Age is one of the important factors in the impact of unemployment, with greatest ill-health being among the middle-aged unemployed.
- Length of unemployment seemed to be important, with the longer-term unemployed suffering poorer health than those out of work for less than six months.
- People of higher social class did not appear to cope with unemployment any better or worse than those of lower social class. (Payne et al. 1984)

Kessler, Turner and House examined the intervening processes in the relationship between unemployment and health by examining the effects that other stressful life events, and financial stresses, had on the health of unemployed people. They found that unemployed people who did not experience financial stress were in better health than those who did, and that if people were not under financial stress, the impact of another stressful life event was no more for the unemployed than for the employed. (Kessler et al. 1987)

In a study undertaken in the Federal Republic of Germany, Frese found that the mental health of the unemployed improved if they retired from unemployment (i.e. reached retirement age and no longer sought work), to the same degree as it improved if they got another job. His study confirmed the impact of financial stress on the health of the unemployed, with those who were not under financial stress demonstrating better health. (Frese 1987)

Analysis of the Canada Health Survey data led researchers to the conclusion that both high income and high education were moderating variables which buffered the psychosocial distress that accompanied unemployment. Additionally these two factors prompted an active use of the health service in response to the distress that did accompany unemployment. (D'Arcy and Siddique 1985)

Brenner and Mooney identified two factors which directly exacerbated, or alternatively reduced, the stressful implications of unemployment in their sample group. These were:

- Additional stressful life changes or events.
- The presence or absence of a highly supportive social environment. (Brenner and Mooney 1983)

**New Zealand Research**

The 1991 Census showed that 10.24 percent of the total male labour force was unemployed and actively seeking work, as was 10.77 percent of the total female labour force. For the Maori population the figures are 24 percent for men and 25 percent for women. (Department of Statistics 1992a, 1992c)
Shirley and others in their 1990 book *Unemployment in New Zealand* found very little New Zealand research into the impact of unemployment on health, and based their discussion in this area largely on a review of overseas research. Bethwaite, Kawachi and Pearce found New Zealand research in this area to be "sparse and small scale". In a 1988 paper on the health consequences of unemployment, Baker found seven indigenous, but often small and unpublished studies, the findings of which supported overseas research. Reinken, McLeod and Murphy, writing on health and equity in 1985, also found scant New Zealand quantitative research. (Shirley et al. 1991, Bethwaite et al. 1990, Baker 1988, Reinken et al. 1985)

In 1982 Macdonald and others examined whether recent rises in unemployment had been reflected in this country's health statistics. The authors compared rates of unemployment with rates of suicide and self harm, admissions to psychiatric hospitals, homicides and post-neonatal infant mortality. They found that while the results were not dramatic, increases in unemployment were associated with an increase in indices of ill-health and distress. (Macdonald et al. 1982)

A review of suicide and deliberate self-harm was undertaken in Wellington in 1978. The sample was quite small, comprising 32 suicides and 306 admissions to hospital for deliberate self-harm. For both suicide and non-fatal injury, the occupational group most at risk was found to be the unemployed, with men more at risk of fatal injury and women of non-fatal injury. (Howell et al. 1980)

Langley and Johnston reviewed 1984 mortality and morbidity data relating to deliberate self-harm. They found that while mortality data included information about occupation, morbidity data did not, making conclusions about the role of unemployment in deliberate self-harm hard to ascertain. The authors found that:

- Death rates from deliberate self-harm were higher among men, older age groups and non-Maori.
- Hospitalisation rates from this cause were higher for women, peaked among those 15-20 years old and were higher for Maori. (Langley and Johnston 1990)

Explanations

Four New Zealand researchers working as the Public Health Association Task Group discussed the links between unemployment and illness and summarised the possible explanations for the associations:

"The pathways that lead from unemployment or threatened job loss to ill health remain speculative. The simplest hypothesis links unemployment to a low standard of living. Reduced income impacts adversely on lifestyle and health seeking behaviours. The evidence on alcohol use is conflicting, with the unemployed having a different drinking pattern rather than consuming more alcohol. The unemployed smoke more cigarettes than the employed, they may use more illicit drugs, and, in the UK at least, have a compromised diet.

The damage to psychological health is easier to grasp. The importance of work to our well-being over and above its financial rewards, has been well documented. The unemployed have restricted social contacts, lack a time structure to their day, have reduced scope for their decision making and lessened satisfaction from achievements. Furthermore the unemployed experience a reduction in social position and status with a component of humiliation and frustration associated with job seeking and rejection." (Bethwaite et al. 1990:48)
Chapter 7 Gender

Key Findings:

• Men have a shorter life expectancy than women and have higher mortality rates at all ages.

• Women experience more ill-health than men, when ill-health is measured by incidence of disease, use of health services, or self-report.

• Maori women have significantly worse health statistics than non-Maori women.

• Women live longer and are therefore more vulnerable to the health problems associated with age.

• Excluding matters related to reproduction, women are hospitalised at lower rates than are men.

The analysis of the health impacts of unemployment, income and social class draws almost exclusively on data relating to men. In an attempt to redress this imbalance, this section will concentrate largely on the health status of women.

The research comparing the health status of women to that of men consistently reveals two things:

1. That women live longer

2. That women experience more ill-health

These statements remain true whether health is measured by incidence of disease, use of health-care services, or self-reported ill health. (Bird and Freemont 1991, Kandrack et al. 1991, Verbrugge 1989, Bunnell 1987, Waldron 1983)

Statistics

New Zealand statistics show women's health status, compared with that of men, to be very similar to the patterns identified overseas. In her report Women's Health in New Zealand: A Statistical Overview 1968-1983, Bunnell found that:

• Women's life expectancy is greater than men's, and non-Maori women have a higher life expectancy than do Maori women.

• Female mortality rates have declined over the past 15 years. The groups that have benefited most from this decline are Maori women, infants and the elderly.

• At every age female mortality rates are lower than those for men.

• For women the leading causes of death are:
  - circulatory system disease
  - cancers
  - respiratory system diseases
  - accidents
Breast cancer is responsible for most years of life lost for women and is a major cause of death for women under 45.

Women are hospitalised at a higher rate than men between the ages of 15-44. Much of this is for care related to reproduction. Outside of these years women show lower rates of hospitalisation than do men.

Women consult general practitioners at a higher rate than men, particularly during the reproductively active phase of life and when elderly. This over representation of women is due in part to conditions specific to women such as antenatal care, family planning and genitourinary system disease. However, women also present in disproportionate numbers with psychological conditions, general symptoms and musculoskeletal conditions.

Women's rates of disability are higher than those of men - largely because rates of disability increase with age.

Women are admitted to psychiatric hospitals at a slightly lower rate than are men. In 1983 the major reasons for women's first admission to psychiatric hospitals were:
- neurotic depression
- alcohol dependence or abuse
- stress and adjustment reactions

In 1983 Maori women were admitted to psychiatric hospital at a higher rate than non-Maori women, and were readmitted at a substantially higher rate.

Alcohol dependence or abuse is increasing as a reason for women's first admission to psychiatric hospital. (Bunnell 1987)

Commenting on these statistics, the Women's Health Committee Report 1985-1988 argued that while they capture a point of contact with the health system, these statistics do not provide details of the health experience of women. This, the report asserted, is because women's health concerns are qualitatively different from those of men, and much of the health care received by women is related to reproduction rather than to illness. A full consideration of women's health needs to move beyond the health statistics that are currently available. The Australian Institute of Health made very similar recommendations about collecting data on women's health. (Women's Health Committee Report 1985-1988 1988, Lee 1988)

Explanations

As gender is an intrinsic rather than an acquired characteristic, the literature discussing gender and health does not debate the direction of causality in this relationship. Rather, attention is directed towards identifying why women should have such different patterns of health from men. Research tends to have moved from looking for biologically oriented explanations such as genetic or hormonal differences, to socially oriented explanations such as differences in socialisation and social roles.

Arber described the research into the gender differences in health status this way:

"The British tradition of analysing differences in health has been dominated by class, with women belatedly entering this debate. The American tradition has been dominated by role analysis, with women's health considered primarily in terms of their marital, parental and employment roles . . . Research in both traditions has reached an impasse." (Arber 1991:425)
Arber used data from the British General Household survey in an attempt to synthesise these two approaches and concluded:

"... The way in which family roles are associated with women's health status is determined by material circumstances, but the material circumstances cannot be captured by occupational class alone. ... occupational class and paid employment are the most important attributes associated with health status for women and men. Family roles are important for women; women without children and previously married women have particularly poor health status especially those not in paid employment and living in local authority housing." (Arber 1991:425)

Pursuing the American tradition of research, Verbrugge identified three kinds of risk factors which help to explain women's higher morbidity and increased use of health services:

1. **Acquired risks** - the risks inherent in the different roles women fulfil in society; the stresses in women's lives; and the lifestyle practices that differ between men and women.

2. **Psychosocial aspects** - how men and women perceive and evaluate symptoms, and their readiness and ability to take therapeutic action.

3. **Health reporting behaviour** - that the different extent to which, and language with which, men and women report their health problems leads to different diagnoses and treatments.

This author concluded that the most powerful explanation is the first one with some support from the different health attitudes held by men and women. This conclusion was supported by the finding that when role differences were controlled in research, both morbidity and mortality data suggested a disadvantage for men. (Verbrugge 1989, 1985)

Bird and Freemont also found that the key to the different health status of men and women lay in the different roles they occupied in society. In general women occupied social roles that had lower status, longer hours, lower wages, higher components of unpaid work, social and emotional responsibilities, and fewer hours of leisure and sleep. When gender differences in social roles were controlled, being male was associated with poorer health than being female. These authors concluded that if gender roles were more equal, women would experience better health than men, consistent with their greater longevity. (Bird and Freemont 1991)

Further research compared the health of women in one or a combination of three roles - full-time or part-time labour force participant, spouse and parent. Three studies concluded that involvement in more than one of these roles generally contributed to better health for women. (Ross et al. 1990, Arber 1991, Waldron and Jacobs 1989, Herold and Waldron 1985)
Chapter 8 Family structure

Key Findings:

- The proportion of families comprising two parents and children has been steadily falling in New Zealand.
- The fastest growing family type is the single parent family.
- Children in single parent families are at greater health risk than other children.
- Overall, the married are in better health than the non-married.
- The health of the childless is better than that of parents.

The body of research on the effects of marital status and family structure on health is part of a wider body of literature on the relationship between social networks and health status. This review will concentrate on the health impacts of different family structures.

Although there are many different kinds of functioning families, this chapter reviews literature discussing the impact of fairly traditional families on health. The National Summary of the 1991 Census defined a family in this way:

"A family consists of a couple (from a legal or defacto marriage) with or without a child(ren), or one parent with a child(ren) usually resident in the household. Hence, a brother and sister only is described as a ‘Non-family household.’" 

(Department of Statistics 1992a:64)

Statistics

Data from the 1991 Census show that New Zealand had a wide diversity of family structures:

- The most commonly occurring household size was two people.
- The category that had grown fastest from the 1986 Census was that of one-parent families.
- 33 percent of households were comprised of husband, wife and child or children.
- 20 percent of households were one person households.
- 7 percent of households were made up of combinations of families, or one family and other adults.
- Of the total number of families with dependent children, 18.5 percent were one parent families in 1986; by 1991 this had risen to 24.5 percent.
- 21 percent of children were being reared in one-parent families. (Department of Statistics 1992a)
The New Zealand Family Planning Association provided the following statistics:

- Maori fertility rates are higher than rates for non-Maori. Maori women tend to have their babies younger than non-Maori women, which in combination with the younger age structure of the Maori population, means that the proportion of Maori in the population of New Zealand is increasing.

- Abortion rates have climbed over the past ten years. Abortion rates are different within the main ethnic groups in New Zealand. Pacific Island Polynesians have the highest rate followed by that for Maori and non-Maori. (Barwick and Mackay 1990)

New Zealand Research

The Christchurch Child Development Study team has collected, and continues to collect, data on a cohort of 1,265 children since they were born in the Christchurch urban region during mid 1977. One of the variables examined in the study is the effect of family background on the health of the children in the sample. The authors measure family background in the following ways:

- They construct a profile of "social background" which includes:
  - level of parental education
  - socio-economic status
  - ethnicity
  - one or two parent family
  - age of mother
  - Family income levels
  - Family material conditions
  - Exposure to adverse life events

Fergusson, Horwood and Shannon found that:

"Children who entered single parent families at birth were subject to a systematic pattern of disadvantage including poor preventative health care, greater risks of morbidity, depressed levels of childhood experience and exposure to preschool education, impaired mother/child interaction patterns, depressed living standards and greater family instability. . . . In particular, single parent families had lower income levels, higher residential mobility, mothers in these families reported more problems and difficulties with child rearing, experienced a greater number of adverse life events and were less satisfied with life in general. In addition, women with no formal educational qualifications and women of Maori or Pacific Island ethnic origin were over-represented in the population of single parent families." (Fergusson et al. 1981a:315)

Statistical control for family social background, maternal age, ethnic status, family size and changes of residence reduced the size of the observed differences between children from one parent families and other children. However, even when the results were controlled for these factors, children in single parent families still had depressed rates of preventative health care and higher rates of hospital admission. (Fergusson et al. 1981b)

Both family social background and family life events made a significant contribution to the variability in the risk of hospital admission.
"There was a clear tendency for children from socially disadvantaged backgrounds to experience higher rates of admission. As a general rule, children of Polynesian ethnic status, children from single parent families, children of poorly educated mothers, children of young mothers and children from families of low socio-economic status had the greatest risk of admission for both accidents and infections. (Fergusson et al. 1986:52)

Another study looking at the utilisation of preschool health and education services found that:

"... the child's family social background and family composition made the largest direct contributions to variations in rates of service utilisation." (Fergusson et al. 1984:1173)

A more recent study found that variations in family social background had a strong influence on "the child's generalised vulnerability to a wide range of problems", including health problems measured by use of health services. Those children with the most disadvantaged social backgrounds had the highest vulnerability to health and other problems. (Fergusson et al. 1990)

Another study undertaken by this team sought to examine the extent to which levels of childhood well-being varied with family ethnic composition. Using 10 measures of child health, education and home conditions the authors found:

"As a general rule children with two Pakeha parents fared best, from the material point of view, in most comparisons whereas those with two Maori or Pacific Island parents fared worst; the group with one Polynesian and one Pakeha parent had results which lay between these extremes. The most compelling aspects of the findings are not the differences on the individual measures but rather the way in which nearly all measures show a consistent rank pattern, with children of Pakeha parents faring best materially and those with two Pacific Island parents faring worst." (Fergusson et al. 1981c:174)

Controlling for social and familial factors made some adjustments to the results, but did not entirely explain the correlation between family ethnic composition and childhood disadvantage. (Fergusson et al. 1981c)

Research conducted on a random community sample of New Zealand women assessed the prevalence of psychiatric disorder. Incidence of psychiatric disorder was compared between mothers who were married or widowed, and those who had never married and/or were childless. The findings were somewhat in contrast to other studies in that the mental health of the group who had been, or were, married and had children was found to be better than the group of unmarried and/or childless women. The authors explained these findings in this way:

"While the findings of this project contradict most previously reported studies, they can be explained by the social conditions prevailing in New Zealand society which shape the experience of motherhood . . . . In New Zealand, children rather than isolating their mother from society, facilitate contact at least with other mothers through pre-school and school activities." (Romans-Clarkson et al. 1988:989-990)

Adolescent childbearing has been associated with adverse consequences for both child and mother. The proportion of infants with low birth weight is substantially higher among infants born to young mothers, and both neonatal and post neonatal mortality are higher among this group. (Taskforce on Adolescent Sexuality 1990)
Although overseas research finds that the married experience better health than the unmarried (Ross et al. 1990, McDonald et al. 1992), these studies do not address the issue of domestic violence. While it is widely recognised that family violence is a threat, particularly to women and children, reliable statistics are very hard to gather. Acknowledging this, Good of the Family Violence Prevention Co-ordinating Committee wrote:

"What is known is that over half the murders are 'domestic'; that the police were called to over 20,000 'domestic disputes' last year; that Refuges provided shelter to over 12,000 calls for help; that the Department of Social Welfare attends to more than 20,000 notifications of child abuse and neglect; that thousands of incest survivors seek help (often as adults) from Rape Crisis, HELP Centres and the ACC; that the Family Courts and Marriage Guidance deal with many hundreds of cases." (Good 1992: 4-5)

Overseas Research

A review of 180 papers written between 1980 and 1990 examining the health of adults in different family circumstances was summarised in this way:

"Overall, the married are in better health than the non-married, but parents are not better off than non-parents. Women's employment and high family socio-economic status tend to be associated with good physical and psychological health." (Ross et al. 1990:1059)

These reviewers found that marriage generally protects and improves health both in terms of physical and mental health. They concluded that the explanations for these findings were based on:

- Social support - the commitment, caring, advice, and aid provided in personal relationships. Although these are not always provided within marriage, they are more available to married people than to the unmarried.

- Economic well-being - married people have higher household incomes than the non-married. The economic benefits of marriage hold for both men and women although they are greater for women.

In terms of parenthood, the authors found that children improved neither the physical nor the psychological health of their parents. They explained these findings in this way:

- Children increase economic hardship on families.

- Children decrease the amount of emotional support that spouses receive from each other.

Employment outside the home seems to mitigate these impacts for some women - those who are earning enough to clearly improve the family's economic well-being - by decreasing economic hardship and providing more social support. (Ross et al. 1990)

The health of lone parents was explored using data from the 1980-1982 British General Household Surveys. The researchers found that:

- Lone parents reported themselves to be in poorer health on all the health measures available than parents living in couples.
Women parenting alone tend to have worse health than men. This is largely explained by gender differences in socio-economic circumstances: lone mothers are less likely to be in employment or to be homeowners than lone fathers, and they are much more likely to be living on low incomes. The authors summarised:

"In consequence while most lone fathers are in employment, most lone mothers are full time houseworkers. Since employment is the main means of escaping from the poverty trap, as well as providing other types of benefits, many lone mothers with young children are unable to improve their situation and may remain in a vicious cycle of poverty and social isolation." (Popay and Jones 1990:530-531)

The effect of family structure on the health of children was examined within a sample of 17,000 children drawn from the National Health Interview Survey, an ongoing survey of households in the United States. In 1988 one of the special health topics in the survey was child health. Findings were that children living with single mothers, or with mothers and step-fathers were at increased risk of emotional, behavioural, social and health problems. They also had an increased risk of unintentional injury. The following explanation was offered:

"These findings are consistent with the hypotheses that children are adversely affected by the emotional trauma and stress that precede and accompany parental separation and divorce, and by the relative lack of attention, supervision, and opposite-sex role models provided by single parents, regardless of marital status." (Dawson 1991:580)

Three studies comparing the health of the separated and divorced with that of the married or partnered found that marriage breakdown had a definite negative impact on health:

- Research which controlled for the effects of age and social class found that married women experienced better health than women "cohabiting", and that women "on their own" had worse health still. (McDonald et al. 1992)

- A study found that while the health of both men and women suffered after marriage breakdown, men suffered the more severe impacts of mortality and hospitalisation, while the women had more of the less severe physical health problems, as well as more mental health problems. (Riessman and Gerstal 1985)

- A comparison of the stress levels of the married, those within two years of divorce and those divorced for longer than two years, found that divorce significantly raised stress levels for up to two years after divorce, beyond which time they returned to pre-divorce levels. (Booth and Amato 1991)

Explanations

The authors of the Christchurch Child Development Study found the children of single parent families to be disadvantaged on a number of health measures. The authors offer the following points in explanation of their findings:

- Some of the difference is explainable by socio-demographic characteristics, that is, children of single parent families have a similar experience to those from two parent families of equivalent social background.
• A "cycle of disadvantage" hypothesis centering around the view that childhood disadvantage is to some extent transmitted inter-generationally.

• The prevalence of social, economic and other stresses in single parent families. (Fergusson et al. 1981b)

The authors of an extensive review of the comparative health status of the married, and those with or without children, explained the better health of the married and the childless. They concluded that health status was positively affected by social support and economic well-being - both of these were found to be more possible within marriage, and less possible when parenting children. (Ross et al. 1990)
Chapter 9 Area

Key Finding:

- Areas defined as being of lower socio-economic status have residents with poorer health than higher socio-economic status areas.

Most of the research on the relationship between social and economic factors and health status has been based on the characteristics of individuals and groups. Another way of examining the effects of socio-economic factors on health is to investigate the extent of health and social need within a geographic area. This approach, often called "small area analysis", compares relative need area by area, and may provide a valuable regional perspective in the planning of health services. This review has located studies on the relative deprivation of geographic areas in Australia, Britain, Italy, the United States and New Zealand.

Overseas Research

Brenner and Mooney reviewed some such studies to examine the relationship between health status and economic growth. They concluded that the results were similar to comparisons between countries, and that populations living in areas "less exposed to the benefits of economic growth" had higher mortality rates and an increased incidence of some common diseases. (Brenner and Mooney 1983)

Two studies conducted in Brisbane divided that city into five areas of roughly equal population on the basis of a "socio-economic suburb score" derived from aggregate census data; factors taken into account in ascribing the status included education, income and occupation. In the first study the overall mortality rates for each of these areas were compared; in the second study, infant mortality rates were the basis of the comparison. The findings of the studies were:

- The lower ranked suburbs had higher overall mortality rates.
- The lower ranked suburbs had higher rates for death from circulatory and respiratory diseases and accidents.
- Deaths from cancers, with the exception of lung cancer, were not found more frequently in the populations from the lower ranked suburbs.
- Significantly higher infant mortality rates were found in the lower ranked suburbs. (Siskind et al. 1987a, Siskind et al. 1987b)

Another Australian study, comparing the health of workers within the Australian petroleum industry by their area of residence, found death rates to be higher amongst those living in suburbs of lower socio-economic status. (Gordon et al. 1989)

An Italian study compared the health indices of mortality, morbidity, invalidity, use of services and life-style according to socio-economic grouping. The authors found that lower socio-economic groups identified by level of education, occupation and region of residence continued to score worse on the different health measures despite an overall improvement in the health of the population. Furthermore, some southern regions of Italy
accumulated a higher concentration of ill-health conditions which contributed to their becoming multi-problem areas. (Piperno and Di Orio 1990)

Research from the United States analysed rates of infant mortality in the years 1979-1981 for eight cities in Ohio. The indicator of socio-economic status was the mother's usual address which was ranked according to the percentage of low income families in that area at the time of the last census. The authors concluded:

"In spite of some very substantial declines in the overall level of infant mortality in recent decades, there continued to be a pronounced inverse association between the aggregate economic status of an area and the probability that a newborn infant will not survive the first year of life." (Stockwell et al. 1988)

A British study conducted in three districts in the London area reached very similar conclusions. (While 1988)

New Zealand Research

Roger Marshall of the Auckland School of Medicine analysed the mortality rates of the major causes of death of those under 65, by area, in Auckland for the years 1977-1885. Marshall did not supply socio-economic indices for different areas of Auckland, relying instead on "a familiarity with Auckland's neighbourhoods". He found overall mortality rates to be higher in south Auckland; around Grey Lynn; and from Glen Innes to Onehunga. As well as higher overall mortality rates, he found higher death rates from heart disease, strokes, cancer and respiratory diseases in these areas. (Marshall 1989)

Reinken, McLeod and Murphy debated the issues of area deprivation in their 1985 report Health and Equity. Using the variables of age, ethnicity, marital status, occupational class, employment status, car ownership, income, housing costs and latitude, the authors developed a health index which they used to identify areas of need or "at risk neighbourhoods". They did this to determine which were the communities with particular need of preventive health programmes.

Hoskins tested the validity of the health index developed by Reinken, McLeod and Murphy in his study of hospital admission rates from census area units within the Auckland region. He concluded:

"This study shows that an admission rate for a neighbourhood is closely associated with its census characteristics. More needy neighbourhoods have higher admission rates. The health index is validated as a measure of morbidity. The use of an area's health index to infer a resident's socio-economic status and to estimate a neighbourhood's need is also supported by this result." (Hoskins 1990:585)

A number of community health surveys have been conducted in different parts of New Zealand, the purpose of which has been to gather perceptions of health and health care services specific to each community.

The 1988 Health Status Profile of the Wellington region included the results of a number of such surveys carried out in communities around the Wellington area. One of the recurring themes was the isolation of those in the suburbs, felt particularly strongly by special needs groups with limited income and poor access to transport. (Health Development Unit 1988)

Explanations

Reinken, McLeod and Murphy discussed the processes which give rise to some areas being deprived and identified some of the possible contributing factors:
• Poor urban planning that militates against the development of a community, and makes scant provision for services.

• Nature of housing tenure, with rented housing leading to greater turnover and therefore less opportunity for the development of formal or informal supportive networks.

• Local pollutants.

• The prevalence of behaviours affected by local culture such as smoking and drinking. (Reinken et al. 1985)

Siskind, Najman and Copeman studied comparative disadvantage in areas of Brisbane. Finding that suburbs ranked as being of low socio-economic status had higher mortality rates than other suburbs, they discussed the possible explanations. These fell into four categories:

• Access to different medical services.

• Environmental hazards.

• Lifestyle.

• The general consequences of social and economic inequality.

The authors concluded that for their study the first explanation had little weight, whereas the other three each provided partial explanation of their findings. (Siskind et al. 1987b)
Chapter 10 Housing

Key Findings:

- Housing has three types of direct impact on health, these stem from:
  - the condition of the dwelling
  - the location of the dwelling
  - the cost of the dwelling

- Housing problems can lead to health problems; health problems may also lead to housing problems.

- Lack of housing puts people, particularly children at serious health risk, which may last well beyond their period of homelessness.

- Overcrowded living conditions are linked with a wide range of physical and mental health problems, and are perceived as the greatest of their housing problems by many people.

- Damp and cold living conditions are shown to be associated with a wide range of respiratory ailments, particularly in children.

- Substandard housing is a particular problem for those with least choice in the housing market such as Maori and Pacific Island Polynesians.

- Those with mental health problems have added difficulty in obtaining adequate housing.

- There is geographical variation in both housing status and health status. Research has shown the correlation between these to be extremely high.

The relationship between housing conditions and health has been accepted since the nineteenth century. Shelter is amongst the most basic of human needs, which until it is satisfied prevents other needs being met. Housing has three key functions, to provide:

- Protection from physical adversity - ideally to be a place of safety and comfort.

- A place of refuge from interference from individuals and institutions.

- A base from which to begin and maintain interaction with the wider community.

It is when one or more of these functions is not being provided by housing that the impacts on both physical and mental health begin to become evident. The health effects of housing can be generated in two distinct ways. On the one hand, ill-health can arise from aspects of the dwelling itself; on the other hand ill-health can be precipitated or exacerbated by the location of the dwelling.

There is a two-way relationship between housing and health. Most obviously housing deficiencies can lead to or worsen physical and mental health problems. There is also the fact that those with poorer health - particularly poorer mental health - are likely to end up in the worst housing.
Research has shown the key aspects of housing which affect health to be:

1. Substandard housing
2. Homelessness
3. Geographical location

This chapter will review the evidence in each of these areas.

Substandard Housing

1. Damp and Cold

The literature on the health effects of the housing environment concentrates most strongly on the ill-effects of damp housing. In their study of people in serious housing need in Auckland and Christchurch, Smith, Kearns and Abbott found some association between reports of health problems including running noses, colds, rheumatism, headaches and asthma symptoms, and reports of dampness and cold in the homes of sufferers. Somewhat surprisingly, this was reported more frequently amongst the Auckland sample than from those in Christchurch. Close analysis of the data revealed socio-economic status to be a factor leading to an inability to afford heating. (Kearns et al. 1991, Smith et al. 1992)

In the light of international research linking dampness to poor health, another New Zealand study explored the links between dampness, poor ventilation, inadequate heating and minimal insulation. The author concluded that these four factors were closely interrelated and that it was simple, low-cost housing that was most likely to be too airtight and thus create problems of dampness. (Bassett 1992)

Housing New Zealand, the 1988 National Housing Commission Survey, canvassed the views of 104 agencies throughout the country chosen for their knowledge of housing problems in their area. Virtually all respondents, but particularly those from the health sector, linked poor housing with poor health and identified dampness as being associated with asthma, chronic ear, nose, throat and chest ailments. (National Housing Commission 1988)

Studies in other countries confirm New Zealand findings that damp housing has a negative impact on health. Research undertaken in the United Kingdom and the Netherlands showed that dampness was clearly linked with a range of ailments, particularly respiratory ailments. (Hyndman 1990, Platt et al. 1989, Waegemaekers et al. 1989) A large Canadian study found an association between exposure to home dampness and respiratory diseases in adults. (Dales et al. 1990)

Children have been shown to be particularly vulnerable to the effects of damp housing with a number of studies revealing strong associations between respiratory problems in children and damp, mouldy houses. Recent studies in Canada, Ireland, the United States and the United Kingdom all found that children from damp houses had more ill-health than those whose environment was not damp. The predominant links were with respiratory problems, but increased associations with fever, vomiting, headaches and psychological distress were also identified. Some of these studies controlled for other variables such as smoking and found that the association remained. (Dales 1991 & 1990, Dekker et al. 1991, Brunekreef et al. 1989, Blackman et al. 1989, Martin et al. 1987)

A study of two large housing estates in Northern Ireland, both located in areas of widespread poverty and unemployment, found that the inhabitants of one suffered considerably worse health than those who lived in the other. The two estates were comparable in most respects and the disparity in health status was linked primarily with
cold and dampness, and to a lesser degree with overcrowding. (Blackman et al. 1989)

A study of seasonal mortality rates in New Zealand has revealed that in winter there are nine percent more deaths than would be expected if deaths were independent of climate, and that the increase is greatest in deaths of those over 65. The study indicates a number of possible reasons for this higher winter death rate:

- The misperception that New Zealand's climate is warm enough for only minimum building controls over the provision of insulation.
- The low level of thermal insulation in New Zealand homes, with newer homes, the ones most likely to be insulated, being occupied by those in younger age groups leaving the elderly in poorly insulated buildings.
- Many of the elderly are on low incomes, and have difficulty providing themselves with adequate diet and heating, both of which would provide some protection against the effects of cold. (Isaacs and Donn 1991)

These conclusions are supported by research questioning excess deaths in winter in the United Kingdom. (Lowry 1989b, Boardman 1986)

2. Overcrowding

There is controversy in the research about the degree to which overcrowding affects health.

In their study of housing need in Auckland and Christchurch, Kearns, Smith and Abbott found that in both cities lack of living space was the most frequently reported problem. The authors link this, and the other two frequently mentioned problems of coldness and expense, with health problems.

"These problems appear to have produced, or at least they are related to, some identifiably different health and mental health problems among the respondents and their families, as well as some variations in patterns of coping behaviour."

(Smith et al. 1992:9)

Housing New Zealand also found overcrowding to be the housing problem which caused people the most distress; this was considered to be particularly the case in areas with high Maori and Pacific Island Polynesian populations whether they were urban or rural dwellers. The overcrowding was linked to the spread of infectious diseases, respiratory problems and mental health problems. Overcrowding was found to contribute to other social problems such as poor educational achievement. Frequently moving house was seen as a factor contributing to poor development of social networks. (National Housing Commission 1988)

In Whangarei a study supervised by Pomare found diseases of the ear to be more common in children from overcrowded homes. Pomare made some comparisons between Maori and non-Maori health, and the study linked higher Maori mortality rates, particularly in the 0-4 age group, with high density and inadequate housing. (Pomare 1988)

A study of the prevalence of hepatitis B infections in Kawerau found that the rates of infection in that community were high, and that the problem was predominantly one of childhood. The authors found that having more than five people in the household was one of the factors associated with infection. (Milne et al. 1987)
A small study in the Hutt Valley conducted by Kerr, linked overcrowding with an increased prevalence of respiratory illness among children. (Kerr cited in Pomare 1988)

The 1991 Census showed that the average number of members per household in New Zealand was 2.75, the average number of members in Maori Ethnic Group households was 3.45. (Department of Statistics 1992a, 1992c)

The recent report of the Maori Women's Housing Research Project confirmed that many Maori families, particularly those in rural areas, were living in substandard and grossly overcrowded conditions. The project team linked overcrowding with increased rates of bronchial and asthmatic conditions in children, family stress and domestic violence. (Maori Women's Housing Research Project Report 1991)

Overseas research is conflicting. Some overseas studies suggest that there is little evidence to support the link between overcrowding and ill-health. (Lowry 1990b, Duvall and Booth 1978, Booth and Cowell 1976) Other studies found overcrowding was implicated in an increased risk of spread of infection and household accidents, and the poor mental health of children. (Lowry 1989b, Blackman et al. 1989)

Gabe and Williams identified two types of overcrowding that could be detrimental to health - internal density and external density. The internal density is the dwelling space per person or the degree of crowding in a home; external density refers to the number of people occupying a residential area. Their review of the literature on overcrowding led them to conclude that external density is strongly linked with poor mental health in a number of studies, whereas internal density is at best only weakly associated with such measures. These findings are supported by other research. (Gabe and Williams 1986, Neil 1991, Lowry 1989b, Booth and Cowell 1976)

It is clear that the reason people continue to live in substandard housing is their inability to meet the cost of accommodation that would be adequate to their needs. The difficulty of finding and affording private rental accommodation was the problem, second only to overcrowding, identified by most respondents in the National Housing Commission Survey. (National Housing Commission 1988)

Both Women's Views on Housing and "... for the sake of decent shelter..." identify cost as being the reason why women generally, and Maori women in particular, have very limited participation in the private rental or ownership housing markets.

"The excessive rents and bonds required by private landlords take this option of housing totally out of the reach of Maori women given the low income bracket the majority fall into. Families are often forced to spend almost all of the family income on rent alone with very little left over for other basic needs such as power, food and clothing. Non-working sole parents or couples with one or two children prior to April 1991 received between $213 and $255 net per week. The average weekly market rental for a two bedroom flat was $149, this meant that between 58 and 70 percent of their net income was spent on rent." (Maori Women's Housing Research Project Report 1991:26)

The Christchurch Child Development Study examined the pattern of home ownership amongst the parents of the children in the sample group. The authors found:

- Independent of family income and other social factors, Polynesian families were less likely than other families to own their own homes.
- Rates of home ownership were low for those with weekly incomes of less than $250.
The probability of home ownership increased steadily with the age of the principal earner.

The authors suggested a number of possible explanations for lower rates of home ownership amongst Polynesian families:

- Racial discrimination in the housing market - that house vendors, real estate agents and finance companies give less support and encouragement to Polynesian people.
- Polynesian and Pakeha families may give different priority to the goal of home ownership.
- The different rates of home ownership may in part reflect a tradition of a lack of home ownership amongst Polynesian people. (Fergusson et al. 1986)

The issue of racial discrimination in the housing market was also found by McDonald, and described in her paper *Racism and Rental Accommodation*. (McDonald cited in Kearns et al. 1991)

3. Substandard Housing and Mental Health

In their report *Exploring the Relationship Between Housing and Mental Health in Two New Zealand Cities*, Kearns, Smith and Abbott researched the impact of serious housing need on the mental health of two populations in Auckland and Christchurch:

- Those with established psychiatric disorders
- Those on the waiting list for state housing

The authors found that amongst the psychiatric respondents the condition of their housing was the strongest predictor of well-being; of those on the waiting list, the people housed by the Housing Corporation experienced the most improved mental health over a six month period. (Kearns et al. 1991)

Most of the literature on substandard housing focuses on the lack of suitable quantity or quality of housing for special needs groups, recognising that members of such groups are frequently left with only the option of the poorest of the housing stock.

*Housing New Zealand* found serious shortcomings in the amount and standard of housing available for disabled people. The authors estimated that up to 35 percent of those with chronic mental illness living in the community occupied either inappropriate or substandard housing, or, were homeless. Serious shortcomings in the form and quantity of housing available for groups such as physically and mentally disabled people; young single people; and Maori and Pacific Island Polynesian families were identified by this report. (National Housing Commission 1988)

The National Mental Health Consortium Report identified good accommodation as a crucial part of the move to community care for the mentally disabled. The report reviewed studies which showed that if such care is not a planned part of deinstitutionalisation, ghettos of socially disadvantaged people develop, and the number of homeless people, particularly in cities, rises. Cost, low social status and intermittent hospitalisations were identified as being the factors that militated against the mentally disabled finding suitable accommodation. Research undertaken in Auckland compared psychiatric admission rates for different areas of the city. The authors found the highest admission rates were from particular central city areas, reflecting the presence of deinstitutionalised patients with chronic mental disorder. (National Mental Health Consortium 1989, Kydd et al. 1991)
Research from Britain, Canada and the United States all concluded that poor housing significantly affected the ability of mentally impaired people to cope in the community. (Marshall and Gath 1992, Baker and Douglas 1990, Elliott et al. 1990, Earles and Nelson 1988)

**Homelessness**

Homelessness is the most extreme form of housing difficulty. There is little New Zealand research on the extent of this problem, and the nature of homelessness makes accurate statistics very difficult to gather. There is no official definition of homelessness in New Zealand which makes measurement even more difficult. The British Housing Act (1977) definition of those eligible for assistance with housing includes not only those technically without shelter, but also those "threatened with homelessness" and those in "priority need" by virtue of grossly inadequate accommodation. (Lea and Cole 1983)

The Christchurch Housing Research Unit Study included 345 households from which a member had approached a social service agency for assistance. Seventy-seven percent of the sample would have been homeless, or threatened with homelessness had the definition of homelessness in the British Act been applied. The vast majority (85%) of the sample households comprised three people or less. This study did not consider the health impacts of homelessness. (Lea and Cole 1983)

There is little evidence of the impact of homelessness on the physical health of adults. Three studies found that the homeless suffer no worse physical health than other low-income groups (Ferenchick 1991, Vladek 1990, Shanks 1988). Other studies found an increase in the extent of physical health problems among the homeless. (Breakey et al. 1989) The prevalence of alcoholism, alcohol dependence and substance abuse amongst the homeless is very high (Reed et al. 1992, Ferenchick 1991, Breakey et al. 1989). An Australian study found that the homeless were more likely than other members of the population to have come from groups that have poor health status to begin with - low income, low socio-economic class, minority ethnic grouping, never married, low level of education and increasingly, with a psychiatric background. (Darnton-Hill et al. 1990)

The mental health of homeless adults is found to be poor in research conducted in the United Kingdom and the United States, although it is difficult to determine whether poorer mental health precedes or follows homelessness. (Reed et al. 1992, La Gory et al. 1990, Breakey et al. 1989, Timms and Fry 1989)

There is clear indication that homelessness affects children's health badly. Children born to homeless parents have lower than average birth weights and are more likely to miss out on their immunisations than other children. These children are more likely to be of shorter stature and lower weight than other children of their age. The children often have less adequate diets and are more at risk of infectious diseases from poor sanitation. Accidents are common amongst homeless children. (Parsons 1991, Conway 1991, Lowry 1990a, Wood et al. 1990)

It is recognised that those who are homeless, or inadequately housed also move more frequently than those in more stable living situations. This makes linking into both personal and institutional support networks more difficult. It militates against continuity of health care, and in particular against aspects such as antenatal care and immunisation. (Shanks 1991, Lowry 1990a)
Geographical location

In their study of inadequate housing in Auckland and Christchurch, Smith, Kearns and Abbott drew on the work of the National Housing Commission for this comment:

"It is also evident that there are some significant geographical variations in the distribution of the poorly housed across New Zealand. The major concentration of inadequate housing can be found in the Maori and Pacific Island dominated neighbourhoods of central and south Auckland as well as in the heavily Maori urban and rural areas of the North Island (especially Northland, Rotorua/Whakatane and the East Coast Region)" (Smith et al. 1992:3)

In her paper Residential Location as Gateway to Health Care Curtis analysed demographic data and health service provision in the United Kingdom. She found that the areas of lowest quality housing where significant health need could be identified, were the very areas with fewest health services:

"These are groups which are often disadvantaged in terms of housing and other aspects of welfare so that constraints on access to the best and most appropriate health care are likely to be compounding their disadvantage." (Curtis 1991:39)

The Social Health Atlas of Australia documents the socio-economic status of that nation by local government area and compares the health status of the residents. The data contained in the Atlas shows that on both objective and subjective measures wealth equals health, and that wealth and poverty are to be found in discreet areas. The Atlas graphically maps the areas where there are high proportions of single-parent families, where many families are reliant on social security, where unemployment is high and where people leave school early. These maps match those of the areas where people die younger, suffer from lung cancer, or are admitted to hospital because of accidents. Interestingly, health appears to have little to do with use of health services in Australia. If anything, the poor use primary health services more often than the rich. (Ragg 1992)

Urban Density

A study based on New Zealand statistics found support for the proposition that population density is directly related to stress pathologies:

"Our evidence, then, suggests that density is an important factor in the aetiology of psychological disorders. That density and not crowding exerts a positive influence on psychological morbidity rates highlights the importance of specifying the spatial parameters used to indicate environmental stress." (Collette and Webb 1976:190)

In their discussion of internal and external density, Gabe and Williams concluded that external density is strongly linked with poor mental health in a number of studies. This suggests that low cost high-rise housing schemes, which frequently house those already disadvantaged by their socio-economic status, will further impact negatively on the health status of residents. (Gabe and Williams 1986)

There have been a number of studies of housing areas considered to be particularly detrimental to the health of their residents. Foremost among these are studies of the Divis flats in Belfast, described as "the youngest slum in Europe" (Lowry 1990b, Blackman et al. 1989). These were built in the 1960s as part of Belfast's slum clearance programme but by the early 1970s were recognised to have major structural problems; and by their design have created major social problems. The authors of this research wrote:
"We have demonstrated clear links between high levels of ill-health and living in Divis flats... given the findings of research summarised in our introductory discussion, the problems of Divis may be seen as one, extreme, manifestation of a wider problem of ill health in low income 'mass housing' areas." (Blackman et al. 1989:24)

Explanations

The primary links between substandard housing, homelessness and ill-health are assumed to be fairly direct ones and are implicit, rather than explicit in the literature reviewed for this report.

The explanations for the association of geographical location with ill-health are those reviewed at the end of Chapter Nine.
Chapter 11 Transport

Key Findings:

- Being without private transport, or without access to public transport, impacts on health in two ways:
  - directly, by limiting access to health services
  - indirectly, by limiting social networks beneficial to good health
- These impacts are most severely felt by groups which are already disadvantaged.

There are two main ways in which transport impacts upon health:

1. Death, injury and distress resulting from road traffic crashes
2. The role transport plays in people’s access to services and facilities which may maintain or improve their health status.

It is recognised that road traffic crashes are a huge problem in New Zealand. The rates of death and injury from these crashes vary amongst different ages, genders and social classes. This problem has been given considerable attention in the literature, and this report will not duplicate that work. Instead, this chapter will review literature on the impact that access to transport, or lack of it, has on health.

In a discussion paper entitled *Public Health versus Public Policy* Wolff and Gillham reviewed the effects that the increased reliance on road transport of the past 20 years has had on health:

- Wide, fast, inaccessible roads in populated neighbourhoods limit the mobility and access to social support networks of those who live in that neighbourhood. Low levels of social support are linked to increased mortality rates from all causes.

- The centralisation of shops into shopping centres increase difficulties of access for those without transport. There was a 32 percent drop in retail outlets in the United Kingdom between 1971-1980, during which period consumption of fruit and vegetables by the lowest income group decreased. The authors wrote:

  "Those on lower incomes may well know what constitutes a healthy diet, but appear to be often prevented from obtaining it for reasons of accessibility."
  (Wolff and Gillham 1991:217)

This paper provides the statistic that in 1991 38 percent of households in the United Kingdom did not have access to a car. Ninety-five percent of the households headed by a professional had a car, but only 38 percent of those headed by a manual worker had access to a car.

- The relocation of services such as hospitals into larger units further apart.
- The negative health impacts of the air and noise pollution directly resulting from the widespread use of private vehicles.
- The economic and human cost of road traffic crashes.
They concluded that increased safety for some (drivers) may well be matched by increased danger for others (non-drivers). (Wolff and Gillham 1991)

Access to Transport

Research indicates that the effects of being without private transport, or without access to public transport are most severely felt by groups which are already disadvantaged.

A study of the data collected by the General Household Survey in the United Kingdom found an association between low use of hospital outpatient and inpatient services and the lack of car transport; this was particularly marked amongst respondents from rural areas. A further finding was that amongst a relatively disadvantaged group - sick people living in rented accommodation - the lowest usage rates of health services were for those who had no car available. (Haynes 1991)

A paper exploring the health status of rural women found that the problems of low income and distance from services were exacerbated by the absence of public transportation and low rates of private car ownership. (Richardson 1987)

The elderly are another group, already disadvantaged in health status by frailty and income, which has diminished access to health services and social networks through reduced rates of private vehicle ownership.

"The elderly in our society are one group with reduced access to the motor car. In a society based on the motor car, this results in an induced dependency. Further, their social networks are weakened and their social power correspondingly reduced... For the frail elderly difficulties caused by lack of car transport are even greater than those of the rest of the population. Restricted walking ability and the ability to climb stairs into buses or railway stations, together with uncertain balance curtails the use of public transport by the frail." (Cant 1989:11)

New Zealand Research

The Horowhenua Hospital Development Study of 1985 canvassed the opinions of key people in the Horowhenua Hospital district about their health services and any problems associated with them. As well, the authors of this study conducted a random sample of households in the study area. Although not addressed by the questionnaire used in this survey, the issue of transport was raised spontaneously by many of those interviewed for the study. The concern of the community was particularly for the elderly, and families with young children. The catchment area of the Horowhenua Hospital was quite large and included low-rental housing in beach areas. The respondents in this survey felt that the inhabitants of such housing seldom had private transport, were not served by public transport, and therefore had particular difficulties of access to their hospital. (Davey and Neale 1985)

The 1979 Porirua Community Health Survey used statistical data and personal interviews to develop a health profile of the Porirua area. From their data the researchers determined that 40 percent of the people in Porirua never had access to a car to visit the doctor, and that those least well off in terms of money were the most likely to have to use a taxi because they were also the group that lived far from public transport. Once again, this problem was felt most acutely by those with young children who needed frequent access to their doctor.
This survey attempted to determine how much worrying over transport problems was a contributing factor to health problems and concluded:

"It is not simply poverty which exacerbates worry over symptoms for poorer women; it is the fact of being housebound (isolated) for lack of transport . . . . In fact, when we consider women and men separately, the excess of worry among women is due, in large part, to transport problems." (Salmond et al. 1979:163)

A survey of the Hawke's Bay, another area poorly served by public transport, revealed that in Hastings, Napier and Wairoa, almost 15 percent of dwellings were without access to a motor vehicle. The authors argued that this jeopardises the health of those who are left without a means of transport in the event of their needing medical attention. (Napier Health Development Unit 1989)

The 1991 Census showed that 12.5 percent of private dwellings were without a motor vehicle. (Department of Statistics 1992a)

**Explanations**

The lack of access to transport impacts upon health directly in reducing access to health care services offering both prevention and treatment. It has a less direct impact in restricting access to social support networks considered to be important to good health. (Haynes 1991, Cant 1989, Davey and Neale 1985, Salmond 1979)
Chapter 12 Ethnicity - Maori

Key Findings:

• The Treaty of Waitangi provides the constitutional basis for equity of health outcomes between Maori and non-Maori.

• Maori children aged between 1 - 14 have a lower risk of dying than non-Maori children.

• Life expectancy in Maori is considerably less than non-Maori but the difference between Maori and non-Maori has decreased.

• The extent of Maori morbidity and mortality may well be under-reported because of difficulties with classifying ethnicity.

• Some but not all of the excess of morbidity and mortality in Maori is explained by differences in socioeconomic status.

• Other explanations have focused on problems of access to culturally appropriate and safe health care.

It has long been known that there are major differences in morbidity and mortality between Maori and non-Maori in New Zealand. The purpose of this chapter is to review the evidence for these differences, and to briefly discuss the interrelationships between health, ethnicity and other factors which impact on health. The major focus will be on Maori ethnicity.

Classification of Ethnicity

Early New Zealand demographers classified ethnicity on grounds of descent or "degree of blood", and this approach persisted until recently. A number of Maori authors (eg. Pomare et al. 1991) have argued that this approach reflected attitudes to ethnicity at the time of New Zealand's colonisation, as well as more recent beliefs in the "genetic" basis of illness and health status. These authors have argued that health status is more closely related to social, cultural and environmental factors, and that the classification of ethnicity should therefore be based on self-identification.

Systems based on self-identification have gained support in recent years, but there are still inconsistencies in the classification of ethnicity in New Zealand's data collection systems. The limited studies undertaken looking at this problem suggest that Maori numbers are underestimated in morbidity and mortality statistics (Brown 1983, Pomare and de Boer 1988, Kilgour and Keefe 1992). An Auckland study suggested that Maori deaths from coronary heart disease may have been underestimated by up to 80 percent (Graham et al. 1989). Likewise a small Wellington study found that ethnicity is underreported in hospital admission data by about 30 percent (Pasupati et al. 1980).

Accordingly, it is probable that the differences in health status between Maori and non-Maori (discussed below) are actually wider than indicated in official statistics.
The Maori Population

Numbers and iwi affiliation

At the 1991 Census, 511,278 New Zealanders (15.1%) stated that they were of Maori descent; 434,848 (12.9%) identified their ethnicity as Maori or "part-Maori". Of the people of Maori descent, 370,248 (72.8%) were able to specify at least one iwi affiliation. Of those who did not specify their iwi affiliations, nearly 80 percent stated that they did not know them; this group largely comprised those New Zealanders of Maori descent but who did not ethnically identify as Maori (Department of Statistics 1992b).

Demographics

About two-thirds of Maori people live in the northern half of the North Island. The Maori population has proportionally more young and fewer old people than the non-Maori population. The 1991 Census reported 62.5 percent of the Maori population was aged under 30 years, compared with 42.3 percent of non-Maori (Department of Statistics 1992b).

There has been an unprecedented decline in Maori fertility between 1962 and 1985 to a current rate slightly above replacement level. This decline has been demonstrated in all age-groups except teenagers who are typically the most resistant to a population fertility decline (Reid 1991).

Maori women are almost twice as likely as non-Maori women to give birth under age 25 (Pomare and de Boer 1988).

Socioeconomic status

There are major differences in employment, income, education, and social class between Maori and non-Maori in New Zealand.

Employment: Since 1988, the Maori unemployment rate has risen more rapidly than the non-Maori rate. Between June 1988 and March 1990, the unemployment rate for Maori women doubled from 11.3 percent to 22.6 percent, more than three and a half times the rate for non-Maori women (Department of Statistics and Ministry of Women's Affairs 1990). In 1990, the total Maori unemployment rate was 18.8 percent, compared to 6.3 percent for non-Maori. Maori women had an unemployment rate of 19.9 percent compared to 6.1 percent for non-Maori women. In some regions, particularly Northland and the East Coast, these rates are even higher. Among Maori youth, 15-25 years, 48.5 percent are unemployed. Twenty percent of the Maori working age population was made redundant in the two years from March 1987 to March 1989 (Malcolm et al. 1991).

Income: Among full-time employed women, Maori women are the most likely to be in the low paid group (defined as less than 68 percent of the mean adult wage) (Malcolm et al. 1991).

Education: According to the 1986 Census 69 percent of Maori women had no school qualification compared with 46 percent of non-Maori women (Malcolm et al. 1991). It also documented that in Auckland city, 18.6 percent of Maori had a tertiary qualification and 38.8 percent of non-Maori (Walker 1990). In 1990, 62.1 percent of Maori students left secondary school with a qualification compared with 87.5 percent of non-Maori (Ministry of Education 1991).
In an attempt to address this issue of educational underachievement, together with the threat of non-survival of the Maori language, the Kohanga Reo movement was started ten years ago. Now, 13,500 mokopuna attend 719 Kohanga Reo, which have a proactive smokefree policy. There are 13 Kura Kaupapa Maori (Maori medium schools) with 336 children attending, and 6 more Kura Kaupapa Maori have been approved for 1993. Three thousand, three hundred and eighty three children attend Maori medium classes in bilingual schools at primary level, and 502 at secondary level (Brill 1992).

Social class: Two-thirds of Maori people occupy the two lowest socio-economic classes - over twice the figure for the non-Maori group (Pearce et al. 1984).

Housing: Less than 50 percent of Maori people own their own homes compared to 75 percent of non-Maori people. Twenty three percent of Maori households consist of sole parents compared with 9 percent non-Maori (NZ Planning Council 1990). Two-thirds of Maori, compared with about one quarter of all New Zealanders, are in living in crowded accommodation (defined as more than one adult per room, excluding toilet, laundry and bathroom) (Malcolm et al. 1991).

Maori Concepts of Health

Apart from definitional problems with ethnicity, there is a deeper problem with the measures of health status usually used to reflect Maori health. Many Maori feel that statistics of morbidity and mortality do not reflect fully a Maori reality.

"There has yet to be devised an appropriate wellness scale for Maori people, and while statisticians are concerned about ethnic origin, Maori health planners are concerned about tribal origin, fluency with Maori language, indicators of spiritual awareness, involvement in marae activities and integration within a family." (Durie 1987: 209)

"Health for Maori people places emphasis on the wairua (spiritual), whanau (family), hinengaro (mental) and tinana (physical)...Unlike the traditional definition of health which places emphasis on the absence of disease, health from a Maori perspective is both all-embracing and holistic." (Ministerial Planning Group 1991: 36)

"From the Maori viewpoint, issues involving te whenua (land), te reo (language), te ao turoa (environment) and whanaungatanga (extended family), are central to the Maori culture, central to health and deeply rooted in the principles of the Treaty of Waitangi. (Pomare et al. 1991: 12).

Maori Parameters of Health

Many Maori authors have argued that reviews of health statistics should include information on issues such as land, language, and cultural identity, and initiatives such as Kohanga Reo are recognized as major developments in Maori health (Department of Health, 1984). Unfortunately, there is relatively little quantitative data available on many of these Maori health indicators, but some information is available from qualitative studies, such as the Rapuora study (Murchie 1984).

- Rapuora found that the presence of an iwi support network influenced perceived health status. It noted an escalating scale of risk of insecurity according to "identification with the region of residence". The risk was lowest if both partners lived in their own tribal area, and highest if they were both out of their own areas. The study found two in ten women were very secure, three in ten secure, one in ten at risk, and four in ten at very high risk (Murchie 1984).
• Older women are more likely to know Maori ancestry and to be involved in Maori cultural life (Murchie 1984).

**Conventional Markers of Health Status**

There is considerable evidence of differences in morbidity and mortality between Maori and non-Maori in New Zealand. The evidence has been comprehensively reviewed by Pomare (1988), and we will only cite a few key findings here.

**Mortality rates**

• The overall Maori age-standardised death rate reduced by 25.5 percent between the years 1970-74 and 1980-84, an improvement twice that recorded by the non-Maori population (Pomare and de Boer 1988). However, the overall adult Maori mortality rate was still approximately twice that of non-Maori.

• Life expectancy at birth is nearly 4 years shorter for Maori males and 4.79 years shorter for Maori females compared to the total population. (Department of Statistics 1992b)

• Maori are less likely to commit suicide than non-Maori (Smith and Pearce 1984).

• Tipene-Leach and others (1991) found that the age-standardised mortality rate for coronary heart disease for Maori men was 1.6 times higher than for European men for 1983-1986. The difference for Maori women was even greater at 4.2 times the European rate. Maori women have also been shown to die from heart attack before reaching hospital at three times the rate of non-Maori. Sudden deaths due to heart attack are 3 times higher in Maori than non-Maori. (Beaglehole et al. 1984)

• There has been a dramatic reduction in death rates of Maori children (1-14 years) over the 20 year period (1967-86), to a level where they are lower than non-Maori rates. Most of the improvement has been as a result of reduction in deaths due to unintentional injuries. (Pomare and de Boer 1988)

• However, Maori infant death rates (0-12 months) are appreciably higher than non-Maori rates. For example, the cot death rate for Maori infants is more than twice that of non-Maori (de Boer et al. 1990). Infant mortality rates are regarded as the best correlate of socio-economic deprivation. (Cochrane et al. 1978)

• Maori death rates from diabetes, rheumatic and hypertensive heart disease are 4-5 times higher than non-Maori rates. (Pomare and de Boer 1988)

**Morbidity rates**

• In 1986, hospital admission rates for 1-4 year old Maori children were 2.3 times higher than for non-Maori. The major causes of admission were asthma and accidents. (Pomare 1990).

• During 1970-84, first admissions to psychiatric hospitals for Maori males age 15-44 increased substantially from 47 percent to 64 percent, while rates for all other groups have decreased. This group had a more than four-fold increase for alcoholism (Pomare and de Boer 1988).

• Maori women also have high rates of cancer of the breast, lung and cervix. (Pomare and de Boer 1988)
Hearing loss, linked closely with socio-economic disadvantage, as both a cause and a consequence, occurs excessively among Maori people (Durie 1989).

Other health parameters

A Hawkes Bay study found that among Maori children, 46.4 percent, and among non-Maori children 66.7 percent, were fully immunised by age two years (Stehr-Green et al. 1992).

More Maori between 10-15 years smoke than do non-Maori, (NRB 1989) and particularly those classified as having a 'high cultural identity' (Mitchell 1983).

The Hillary Commission's Life in New Zealand Survey found that significantly more Maori (63%) participate in physical activity than all New Zealanders (48%). Furthermore more Maori participate in high intensity activities than non-Maori and participation is more frequent. Forty seven percent of Maori men and 33 percent of Maori women participate in rigorous/strenuous physical activity (Reid 1992).

Explanations

The above figures demonstrate that health status differs for the Maori and non-Maori populations in New Zealand. The reasons for these differences are not entirely clear, and will only be discussed briefly here.

Socioeconomic Factors

Most authors have argued that the differences in morbidity and mortality between Maori and non-Maori stem at least in part from differences in socio-economic status (i.e. from differences in the factors discussed in the other chapters of this report).

For example, a large qualitative study carried out by the Maori Women's Housing Research Project (1991) found that many Maori families, particularly in rural areas, lived in "appalling physical conditions" (Maori Women's Housing Research Project 1991). Due to extended family commitments these households were often overcrowded. These conditions, together with unemployment were seen by the women as factors contributing to domestic violence and sexual abuse. Transport has also been found to be a major health issue in places such as Porirua (Salmond 1975).

The most direct attempt to examine the extent to which socio-economic factors contribute to the excess morbidity and mortality in Maori was that of Smith and Pearce (1984), who estimated that socio-economic status (based on occupation) explained only 20 percent of the excess mortality burden carried by Maori men.

A number of authors (including Smith and Pearce) have stressed the limitations of this approach. Social class classifications based on occupation have little meaning in traditional Maori society, in which mana involves very different factors than in European society. Durie (1985) explained that:

"To Maori people, the socio-economic scale has diminished relevance and can hardly be used as an index of social standing or good health. Occupation is of comparatively little consequence within Maori society. A manual labourer performing the most menial task not infrequently turns out to be a gifted orator, or a person with exceptional prestige widely regarded by his tribe as healthy; while the professional who is hesitant within Maoridom may invoke the type of pity normally reserved for those in ill health." (Durie 1985: 485)
Another example is that income, and subsequently socio-economic status, often falls following retirement amongst Pakeha. However, in Maori society, status and responsibility increase markedly following retirement. Maori women who are knowledgeable and involved in community and cultural activities are often held in high esteem irrespective of their occupational status. Further, Maori women are often accorded a high status in Maori society as they age, become mothers and grandmothers (Murchie 1984).

Thus, occupationally-based scales provide at best only a partial measure of social class, as conceptualised in terms of status. They do provide a useful surrogate measure of socio-economic factors, but even in this sense they provide only a part of the picture. A Maori person may have demands on resources over and above that of a non-Maori person in the same occupation (eg more members of their household or extended family may be unemployed). On the other hand, the Maori person may have additional support to meet these extra demands (eg community support through iwi organisations).

The relationship between ethnicity and socio-economic status may not be simple. These factors may interact to produce excess mortality or morbidity beyond the socio-economic factor (Casper 1991, Ulbrich 1989). Some authors suggest that ethnicity could be construed as a socio-economic category in itself (Cooper 1986).

Furthermore, measures of socio-economic status which are based on occupation and education fail to demonstrate clearly issues of communities where a significant percentage is unemployed. They also give only an indirect indication of the status of the majority of women in the community. For Maori, a measure which reflects individual status does not take into account the fact that many Maori households are extended and a single income often has to support more people. When income is adjusted to allow for the number of dependants in households, Maori households’ income has dropped from 85 percent of average household incomes in 1981/82 to 77 percent in 1987/88 (NZ Planning Council 1990).

Other factors

Despite the above reservations regarding studies of socio-economic status and health in Maori people, almost all authors have concluded that socio-economic status explains some, but not all of the mortality and morbidity excess in Maori. The search for possible explanations for the rest of the excess has focused on access to culturally appropriate and safe health care.

For example, Smith and Pearce (1984) calculated that 36 percent of the non-social class related excess involved diseases amenable to medical intervention, such as rheumatic and hypertensive heart disease, nephritis, bronchiectasis, diabetes and tuberculosis which were all associated with a mortality of five times or more the non-Maori rate.

Similarly, a recent study of mortality from amenable disease indicates that Maori mortality, and in particular female Maori mortality, has been less influenced by medical services than has non-Maori mortality (Malcolm 1991).

McKeown (1976) and McKinlay (1977) showed that historically health and medical services are relatively unimportant in their influence upon health status, especially mortality (Davis 1984). However, several authors have argued that while this might be true for a population as a whole, it may not hold for subpopulations such as Maori where institutional barriers distort utilisation of health services.

While issues of access and affordability are probably critical, more covert factors were examined in an ethnographic study (Blaiklock 1986). She found that staff of Princess Mary Hospital, pressured for time, tended to see cross-cultural communication and practices as
yet another source of difficulties and that problems with culture were an additive, rather
than a central component of treatment.

Certainly two recent studies have confirmed earlier assumptions that while there were
inadequacies with primary care services, Maori were getting unequal access to, and
treatment in, secondary and tertiary services.

1. An Auckland study found that after controlling for socio-economic status, Polynesian
and European children had similar prevalence of asthma, but Polynesian children
had significantly higher rates of previous hospitalisation and had not received any
asthma medication for the 24 hours prior to hospital admission. Moreover, even after
readmission for asthma, both Maori and Pacific Island children received significantly
fewer prophylactic drugs compared with European children. (Mitchell 1991)

2. A recent study of coronary heart disease mortality in Auckland found that while Maori
rates of coronary heart disease are significantly higher than European, the low
number of Maori coming forward for coronary bypass surgery suggests there are
barriers to access to secondary service for Maori patients (Tipene-Leach et al. 1991).

Pomare (1988) has noted that, because of the concern about equitable access to health
services as guaranteed in Article III of the Treaty of Waitangi, there has been a strong
commitment within the Maori community to become more involved in both the planning and
delivery of health care, including the development of community-based programmes
sensitive to the needs of Maori people at a local level.

Although chronic lack of funding has been a major problem, many interesting programmes
have been developed, including marae-based health centres closely associated with iwi
organisation and development, and initiatives through Kohanga Reo (Maori language
nests) (Pomare 1988). These initiatives emphasize the health priorities to that particular
marae, iwi, or organisation. They observe Maori protocol and often depend heavily on
kaumatua (elders) for support, guidance and sanction.

These initiatives build on previous initiatives earlier this century, including the work of the
Maori Councils, Te Puia Herangi, the Maori Womens Welfare League, and the Health
League, and are in tune with WHO strategies, specifically the Alma Ata Declaration and the
Ottawa Charter.

The Treaty of Waitangi

Many authors have argued that the Treaty of Waitangi, which is the founding document of
New Zealand, provides a constitutional basis for equity of health outcomes between Maori
and non-Maori (Durie 1992).

"Implicit within the Treaty were the concepts of equity, partnership, and
economic and cultural security, all of which contributed importantly to Hauora
(spirit of life/health). Poor standards of Maori health may therefore be regarded
in part as non-fulfilment of these Treaty concepts and obligations." (Pomare and
de Boer 1988:21)

The health implications of the Treaty of Waitangi are significant. Indeed, the health
services have already given a commitment to address the implications of the Treaty of
Waitangi (Department of Health 1988, Ministerial Advisory Committee on Maori Health
1990).

Article I of the Treaty establishes the right of the Crown to make laws and govern
(kawanatanga). However, this right is qualified by the guarantee in Article II to iwi Maori, of
the control and enjoyment (rangatiratanga) of those resources and taonga which it is their wish to retain. Active protection is an important aspect of this Article (Ministerial Planning Group 1991).

Article III constitutes a guarantee of legal equality between Maori and other citizens of New Zealand.

"The second aspect of the equality principle looks at the actual enjoyment of social benefits and not merely to legal equality. Where serious and persistent imbalances exist between groups, in their actual enjoyment of social benefits such as health, health education or housing, then Government will consider particular measures to assist in redressing the balance. Article 1(4) of the International Convention on the Elimination of all Forms of Racial Discrimination (1966) came into force in New Zealand in 1972, and expressly recognises that such special measures 'shall not be deemed to be racial discrimination' provided they are not continued after the imbalance is remedied." (Department of Justice 1989:13)

Many Maori authors note that all articles of the Treaty are relevant to health (Rolleston 1990, Pomare 1988, Durie 1992). Special consideration must be given to the concept that health is regarded as a taonga and the promise of equity in Article III. For example, area health boards held in trust, or owned, assets that have been donated over the years to the health services, including Maori land gifted for health purposes. This Maori land was often provided for health purposes on the understanding that health services would, in turn, be assured for members of the local iwi. These responsibilities will be inherited by Regional Health Authorities and Crown Health Enterprises. (Durie 1992, National Interim Provider Board 1992)

Maori have expressed concern that only when the Treaty is embodied in legislation such as the State Owned Enterprises Act (1987) is effect given to its intentions. (Durie 1992)

Summary

Most authors have concluded that the elimination of social and economic disparities between Maori and non-Maori will not eliminate the gap between Maori and non-Maori wellbeing. Ethnicity is therefore an important predictor of health status together with socio-economic factors.

In the context of the Treaty of Waitangi, it is important to recognise that many ethnic statistics reflect the performance of health systems and are not necessarily a statement about the population studied (Pomare 1988). For example, the low Maori rate of childhood vaccination reflects the accessibility and acceptability of current immunisation programmes to Maori parents, and reveals little about how Maori parents feel about vaccination in general.

Most explanations for the excess morbidity and mortality in Maori have focused on differences in access to culturally appropriate and safe health services. In this context the Royal Commission of Social Policy found that Maori people have the same aspirations as non-Maori. Like all New Zealanders, Maori who made submissions to the Royal Commission on Social Policy highlighted the desire for voice (participation in decision-making), choice (options) and safe prospects (future wellbeing) (Dyall and Keith 1988). The authors concluded that how Maori and non-Maori choose to exercise voice and choice to ensure future wellbeing may be different. This is a reflection of history, cultural institutions and processes together with Maori rights and obligations under the Treaty of Waitangi.
Concluding Remarks

Several hundred studies have been reviewed for this report. The time constraints imposed to complete this work mean that it has had to be restricted to a literature review. The Public Health Association recognises that this is the first major effort in New Zealand in what will be an ongoing process. In particular, more work needs to be done on the linkages between factors, and the processes operating. We hope however that this review will assist both researchers and policy makers.
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People consulted

Dr Michael Baker - Community Medicine Registrar, New Zealand Communicable Diseases Centre, Department of Health, Porirua

Mr Mark Bassett - Scientist, Building Research Association of New Zealand, Porirua

Dr Ruth Bonita - Senior Research Fellow, University Geriatric Unit, North Shore Hospital, Takapuna

Ms Penny Brander - Researcher, Health Research Services, Department of Health, Christchurch

Mrs Louise Croot - Health Promotion Adviser, Otago Area Health Board, Dunedin

Mr Göran Dahlgren - Future Studies Institute, Stockholm, Sweden

Dr Judith Davey - Senior Lecturer, Department of Geography, Victoria University, Wellington

Dr Peter Davis - Senior Lecturer, Department of Community Health, University of Auckland

Ms Margaret Duthie - Professional Advisor, Health of Older People Policy Group, Department of Health, Wellington

Mr Bryan Early - Environmental Health officer, Dunedin City Council, Dunedin

Ms Marie-Louise Engblom - Information officer, The Sweden Planning and Rationalisation Institute (SPRI), Stockholm, Sweden

Dr David Fergusson, Dr Horwood and Dr Hall - Christchurch Child Development Study, Department of Paediatrics, Christchurch School of Medicine, Christchurch

Mr Geoff Fougere - Lecturer, Sociology Department, University of Canterbury, Christchurch

Mr Graeme Gillespie - Principal Health Protection officer, Public Health Unit, Manawatu-Wanganui Area Health Board, Palmerston North

Dr Margaret Gilling - Research Analyst, Social Policy Agency, Department of Social Welfare, Wellington

Professor W I Glass - Associate Professor, Occupational Health, Department of Preventive and Social Medicine, Medical School, University of Otago, Dunedin

Ms Raewyn Good - Family Violence Prevention Co-ordination Committee, Wellington
Mr Lew Graham - Acting Professional Advisor, Health Protection; Supervisor - Environmental Health and Toxicology, Primary Health Division, Canterbury Area Health Board, Christchurch

Ms Teenah Handiside - Policy Analyst, Women's Health Unit, Department of Health, Wellington

Ms Moana Herewini - Co-ordinator, Maori Policy Unit, Department of Health, Wellington

Professor Andrew Hornblow - Professor of Community Health, Department of Community Health and General Practice, Christchurch School of Medicine, Christchurch

Mr Nigel Isaacs - Research Fellow, School of Architecture, Victoria University, Wellington

Ms Jan Jameson - Manager, Strategic Task Group Presbyterian Support Services (Northern) in Auckland

Mrs Vivienne Kane - Co-ordinator, Health Development Unit, Upper Hutt

Dr Ichiro Kawachi - Research Fellow in Medicine, C/o Channing Laboratory, Boston, USA

Dr Robin Kearns - Lecturer, Department of Geography, University of Auckland, Auckland

Dr Don Matheson - Epidemiology Section, New Zealand Communicable Diseases Centre, Porirua

Ms Robin McKinlay - Senior Policy Analyst in Health, Ministry of Women's Affairs, Wellington

Ms Nicola North - Senior Lecturer, Health Services Management, Department of Business Studies, Massey University, Palmerston North

Dr Mike O'Brien - Senior Lecturer, Department of Social Policy and Social Work, Massey University, Palmerston North

Dr Neil Pearce - Senior Research Fellow, Department of Medicine, Wellington School of Medicine, Wellington

Mr Wayne Perkins - Scientist, Traffic Research Section, Ministry of Transport, Wellington

Ms Marion Pybus - Senior Lecturer, Department of Nursing Studies, Massey University, Palmerston North

Ms Dianne Reed - Assistant General Manager, Health Development Unit, Waikato Area Health Board, Hamilton

Ms Pat Reid - Research officer, Department of Preventive and Social Medicine, University of Otago, Dunedin

Dr Judith Reinken - Researcher and Consultant, Whangarei
Dr George Salmond - Consultant, Wellington

Dr Janet Sceats - Manager, Health Services Research, Waikato Area Health Board, Hamilton

Ms Helen Shaw - Consultant, Wellington

Dr Philip Silva - Director of the Multidisciplinary Health and Development Research Unit, University of Otago Medical School, Dunedin

Ms Susan St John - Senior Lecturer, Economics Department, University of Auckland, Auckland

Dr Peter Strang - General Practitioner, Student Health, University of Otago, Dunedin

Ms Gillian Tasker - Lecturer, Wellington College of Education, Wellington

Mr Barry Taylor - Ministry of Youth Affairs, Wellington

Dr Kevin White - Lecturer, Department of Sociology, Victoria University, Wellington

Dr Cathy Wylie - Researcher, NZ Council of Education Research, Wellington

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- Eric, at the New Zealand Council for Educational Research
- NZBN, at the National Library
Literature searches at the following libraries

- the Department of Health library
- the Department of Education library
- the Housing Corporation library
- Victoria University library
- the Parliamentary library
- the National library
- the Department of Community Health library
- the Public Health Association material
Annex II

Methodological Issues

There are three main types of quantitative research on the linkages between socio-economic factors and health: aggregate or time-series studies, longitudinal studies and cross-sectional studies. The following is a discussion of the strengths and weaknesses of each of these approaches.

1. Aggregate or time-series research

These studies attempt to relate measures of economic activity at a national or regional level to national or regional indices of health. Trends within economic performance measures such as employment and income are compared over time with health status indices such as mortality and morbidity to see whether any association is revealed. This type of research explores what is happening within populations rather than for individuals.

Aggregate studies are often used when it is the health status of areas rather than individuals which is being examined. Key socio-economic indices, usually gathered from census data, are aggregated and areas are classified accordingly. Health statistics are also aggregated for these areas, and then the two sets of data are compared.

The appeal of aggregate research is that it allows large populations to be studied, and gives an indication of trends over time of the relationships between the variables being studied. There are however three main disadvantages with aggregate studies:

- They can only show correlation between variables, and the data do not allow any conclusions to be drawn about causation. For example, when such studies reveal that during periods of high unemployment the nation's health suffers, the data cannot show whether it is the health of those who are employed, or those who are unemployed which has worsened.

- By their very nature aggregate studies are examining patterns from the past and may not be relevant to the future.

- These studies cannot give any indication of which variables impact upon each other. They cannot, for instance, tease out the effects of unemployment from those of poverty, availability of health services etc.

In summary, aggregate studies are crude indicators of what is happening within large populations, but are not sensitive enough to give any indication as to why.
2. Cross-sectional studies

Cross-sectional studies compare the health status of groups or individuals for whom social and economic conditions differ. Many cross-sectional studies have compared the health of the employed with that of the unemployed, or compared health status across socio-economic groupings. Cross-sectional studies tend to be a 'snapshot' of one point in time. They have two major weaknesses:

- It is very difficult to isolate whether the variable being examined (e.g. unemployment) is the one that is affecting the results. These studies are unable to answer the question - do unemployed people demonstrate poorer health status because of their unemployment, or because of other relevant factors such as housing, level of education or access to health services?

- Taken at one point in time these studies beg the question of whether health factors had any bearing on the variable being studied. Does poorer health contribute to people becoming unemployed? Is socio-economic status influenced by health status rather than the other way around?

Cross-sectional studies use a methodology which makes it impossible to identify which variable came first and therefore may be impacting on the other.

3. Longitudinal Studies

These studies tend to be used more with variables which may change over time, such as income and employment, than for studying social class which tends to remain the same throughout life. The method is to follow a group of people over time to see whether employment status, or a change in employment status, is associated with particular health outcomes. The strength of longitudinal studies is that they enable researchers to consider both the effect of employment status upon health and the effect of health upon employment status. The disadvantage is that the sample groups need to be very large in order to result in statistically meaningful numbers of individuals who will experience different events during the follow up period. This large sample size makes long term follow-up extremely expensive.

One significant group of longitudinal studies is that known as 'factory closure' studies, which research the effects on individuals and communities of the closure of a usually major, local source of employment. Unfortunately, few of the factory closure studies used a control group; the length of follow-up was often too short to draw firm conclusions about the effects of the closure; and the group being studied was usually experiencing both redundancy and unemployment, making it difficult to separate the impacts of each.

Amongst the statistical methodologies, longitudinal studies seem to give the most support to the thesis that socio-economic characteristics impact upon health status.
4. Other research methodologies

There are other types of research into the effects of socio-economic factors on health.

- There is epidemiological research which investigates the precursors of a particular disease or syndrome, and which may find social or economic conditions to be amongst them.

- There are as well, ethnographic or descriptive studies which use the personal experience of subjects as their data, the most famous among these being George Orwell's 1930s classic "The Road to Wigan Pier".
2 ALTERNATIVE STRATEGIES TO REDUCE SOCIAL INEQUITIES IN HEALTH

2.1. The health policy matrix

There are basically two alternative approaches for an equity oriented health policy. One being to focus upon actions to reduce specific diseases among underprivileged groups.

The other approach being to focus upon specific risk factors and public policies improving health conditions in general and among those at particular risk in particular.

The conceptual framework for these two approaches can be illustrated by the following type of health policy matrix.

Figure 2.1: Correlation between health hazards and illness groups

<table>
<thead>
<tr>
<th>Social upbringing environment</th>
<th>Cardiovascular diseases</th>
<th>Mental illness</th>
<th>Skeletomuscular disease</th>
<th>Tumours</th>
<th>Injuries</th>
<th>Respiratory diseases</th>
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<tbody>
<tr>
<td>Social work environment and unemployment</td>
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<tr>
<td>Physical work environment</td>
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<tr>
<td>Social living environment</td>
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<td>Physical living environment</td>
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<tr>
<td>Air/water pollutants</td>
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<tr>
<td>Traffic</td>
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<tr>
<td>Diet</td>
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<tr>
<td>Alcohol and drugs</td>
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Source: SOU 1984:40  
* some correlation  ** strong correlation
Fig. 1. Factors that influence levels of health
FIGURE 5. Environmental impacts on health: direct and indirect pathways.