



**Using socioeconomic
evidence in
clinical practice guidelines**

**and
evidence**

guidelines



NHMRC

*National Health &
Medical Research Council*

Using socioeconomic evidence in clinical practice guidelines

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PREFACE

Clinical practice guidelines (CPGs) are systematically developed statements that assist clinicians, consumers and health service decision-makers to make appropriate health care decisions. CPGs provide statements of ‘best practice’ based on a thorough evaluation of the current evidence on the outcomes of treatment or other health care procedures. The methods used for collecting and evaluating evidence and developing guidelines can be applied to a wide range of health care options including the use of technology and pharmaceuticals, surgical procedures, screening procedures, and lifestyle advice.

In 1995, recognising the need for a clear and widely accessible guide for groups wishing to develop CPGs, the National Health and Medical Research Council (NHMRC) published a booklet to assist the development and implementation of CPGs. In 1999, a revised version of this booklet was published called *A Guide to the Development, Implementation and Evaluation of Clinical Practice Guidelines* (NHMRC 1999). This booklet included an outline of the latest methods for evaluating evidence, and for developing and disseminating guidelines.

Current and emerging guideline processes are complex and depend upon the integration of a number of activities, including the collection and processing of scientific literature, evaluation of the evidence, development of evidence-based recommendations or guidelines (including evaluation of cost-effectiveness), and implementation and dissemination of the guidelines to relevant professionals and consumers. The NHMRC has supplemented the information in the original guidelines development booklet with a series of handbooks providing information on the main stages involved in clinical guidelines development. An Assessment Panel was convened in June 1999 to oversee production of the series. Experts in relevant areas were contracted to help draft these handbooks. Each of the handbooks focuses on a different aspect of the clinical guideline development process including review of the literature, evaluation of evidence, economic assessment, dissemination and implementation, and consumer publications.

This handbook provides information to assist guideline developers in the process of summarising the evidence of the effects of socioeconomic position (SEP) and other markers (or descriptors) of disadvantage, on health outcomes and health care delivery. The process informs the development of CPGs by suggesting ways in which guideline developers can identify and retrieve evidence and incorporate it into guidelines for clinical practice. This handbook includes a re-definition of the evidence base and search strategies used in the past to develop CPGs and an assessment framework for CPG development.

Membership of the Working Party for this handbook is shown in Appendix A.

The information provided in this handbook fits into the overall guideline development process recommended by the NHMRC as shown in Flow Chart 1. The shaded box represents the approach taken in this handbook; an essential stage in the guideline development process.

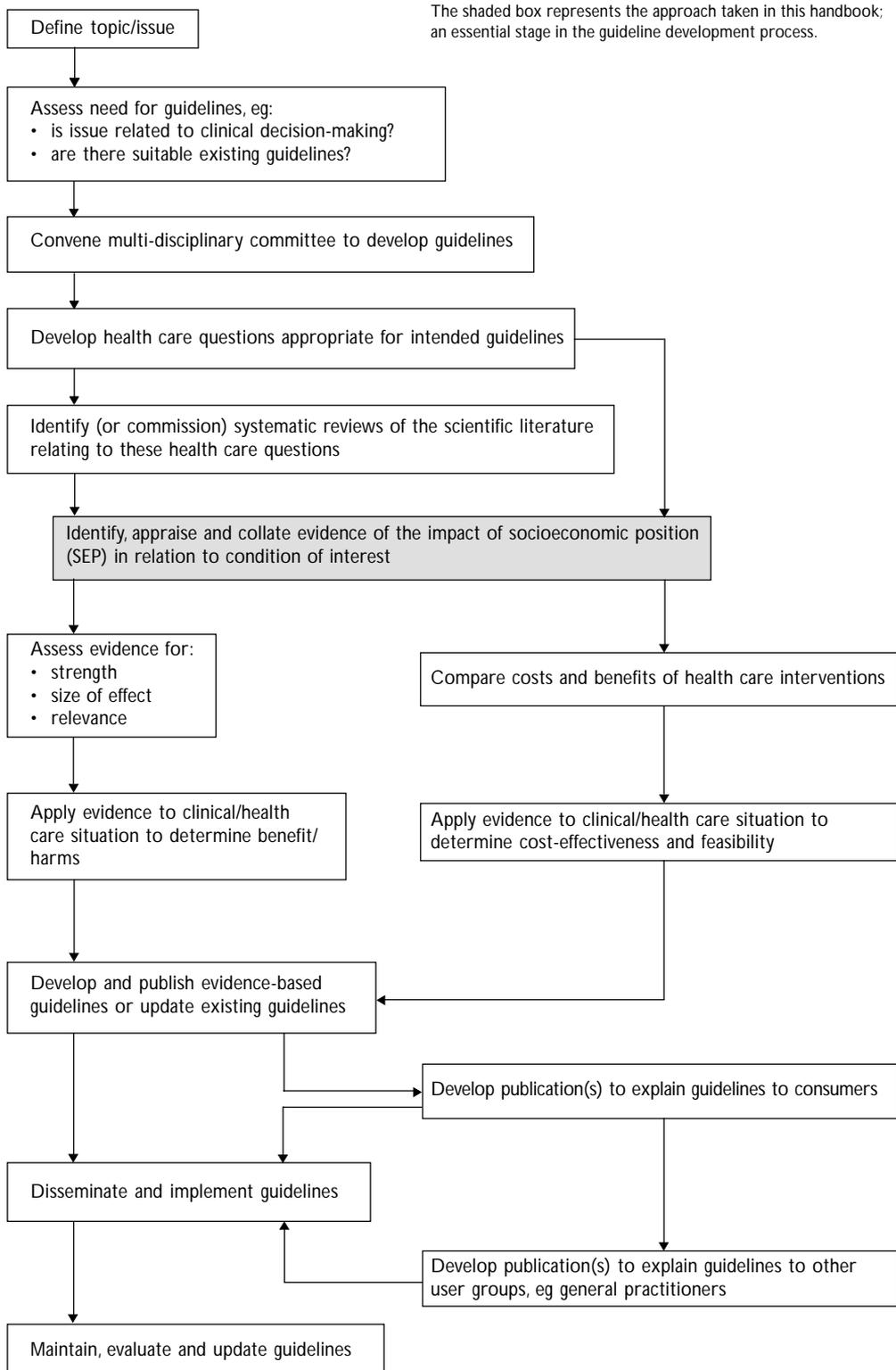
Other handbooks that have been produced in this NHMRC series so far are:

- How to Review the Evidence: Systematic Identification and Review of the Scientific Literature (NHMRC 2000a)
- How to Use the Evidence: Assessment and Application of Scientific Evidence (NHMRC 2000b)
- How to put the Evidence into Practice: Implementation and Dissemination Strategies (NHMRC 2000c)
- How to Present the Evidence for Consumers: Preparation of Consumer Publications (NHMRC 2000d)
- How to Compare the Cost and Benefits: Evaluation of the Economic Evidence (NHMRC 2000e)

Note:

This handbook uses the terms socioeconomic determinants of health, socioeconomic status (SES) and socioeconomic position (SEP), all of which pertain to the same concept with subtle differences. Debate around the definition of, and distinction between, SEP and SES is ongoing in the international literature. SEP is becoming more widely used. However, SEP and SES are used synonymously throughout this handbook, to avoid overlooking literature which uses one or other of the terms. The Glossary also includes definitions of these and other terms used in the handbook.

Flow Chart 1: Clinical practice guidelines development process



INTRODUCTION

Development of evidence-based guidelines

The process for developing CPGs is described in the NHMRC publication *A Guide to the Development, Implementation and Evaluation of Clinical Practice Guidelines* (NHMRC 1999). This publication recommends that a multi-disciplinary committee develop guidelines. The committee's initial tasks are to determine the need for and scope of the guidelines, to define the purpose and target audience, and to identify the health outcomes which will improve as a result of the guidelines' implementation.

The membership of a guideline development committee depends upon the nature of the particular guidelines being developed but should include medical and other health professionals, consumers, health policy analysts, economists and regulatory agency representatives and bioethicists. The inclusion of consumers is particularly important to ensure that relevant evidence and outcomes are considered in terms of patients and their support networks.

This handbook targets the developers of CPGs, the Health Advisory Committee of the NHMRC, evidence-based medicine practitioners, general medical, specialist medical and allied health practitioners, health policy decision-makers and consumer representatives.

The handbook addresses the issues relating to the socioeconomic gradient of health, the markers of socioeconomic disadvantage, the role of the health system in redressing health inequalities and the role of CPGs in changing the health care system. It broadens the standard evidence base used in CPG development and applies a framework to this extended evidence base using four clinical case studies. In this handbook the term 'clients' includes patients and consumers (or recipients) of health care services.

The resource implications of the additional steps introduced in this handbook (including broadening the search scope and assessing additional literature) will need to be addressed in a policy context.

The references in this handbook are included at the end of the section to which they pertain.

The Framework

The framework expands the shaded box in Flow Chart 1 into four steps as outlined here and explained further in Sections 3.2 to 3.4.

Step 1: Identify the health decisions required

Clinical practice guidelines involve a number of individual steps. The process of guideline development is similar to that undertaken by clinicians and clients in every-day health care.

Step 2: Search the literature for evidence that, due to SEP, population sub-groups may experience barriers to and/or have limited capacity or opportunities to achieve equal health gains

The literature should be searched using markers of SEP, the condition or disease of interest, and the required health decision to identify population sub-groups which may experience barriers, limited capacity or opportunities to achieve the same health gains as other sub-groups or populations.

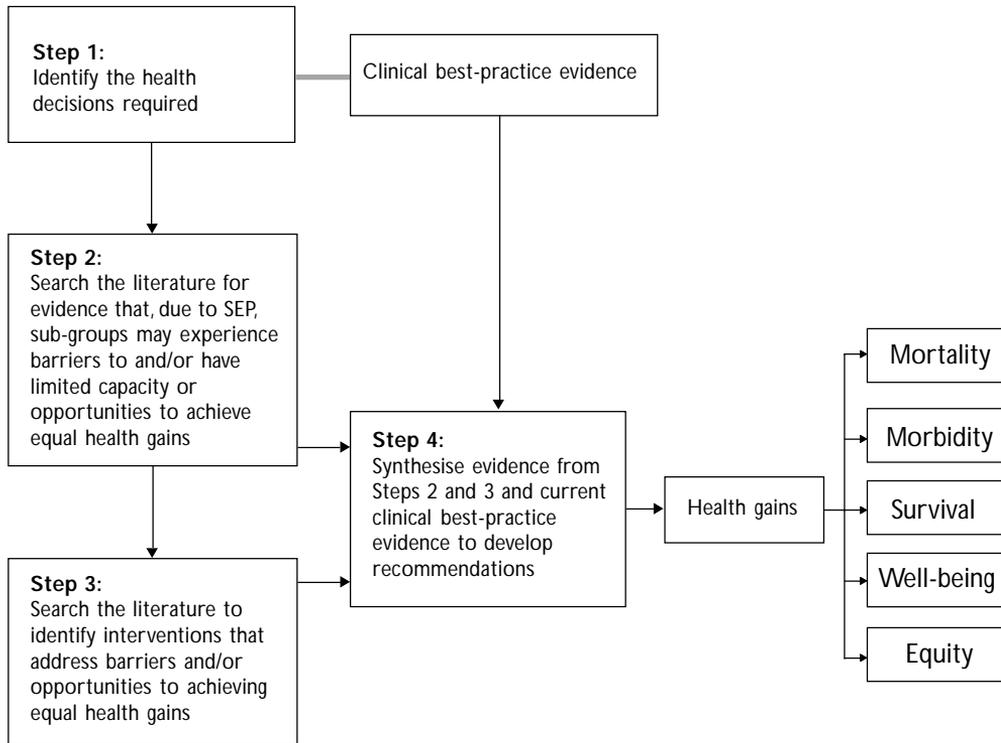
Step 3: Search the literature to identify interventions that address barriers and/or opportunities to achieving equal health gains

Literature describing interventions that attempt to address barriers to achieving equal health gains across sub-groups should be identified.

Step 4: Synthesise evidence from Steps 2 and 3 and current clinical best-practice evidence to develop recommendations

Develop recommendations in order to achieve health gains in terms of mortality, morbidity, survival, well-being and equity.

A framework for using evidence on socioeconomic position in the development of clinical practice guidelines



1 RATIONALE

1.1 The socioeconomic gradient of health outcomes in the context of the burden and distribution of disease

Taken as a whole, the evidence on SES and health in Australia is unequivocal: those who occupy positions at lower levels of the socioeconomic hierarchy fare significantly worse in terms of their health. Specifically, persons variously classified as 'low' SES have higher mortality rates for most major causes of death, their morbidity profile indicates that they experience more ill-health (both physiological and psychosocial) and their use of health care services suggests that they are less likely to act to prevent disease or detect it at an asymptomatic stage. Moreover, socioeconomic differences in health are evident for both females and males at every stage of the life-course (birth, infancy, childhood and adolescence, and adulthood) and the relationship exists irrespective of how SES and health are measured. (xi)²⁶

The socioeconomic gradient of health means that affluent populations have better health and lower mortality than poor, disadvantaged populations.⁶ In general, health status increases as affluence increases.²¹ Australian and international research has demonstrated that people who experience social and economic disadvantage (due to for example, low levels of income, lack of social support, poor education and housing) have poorer health outcomes in terms of morbidity and mortality.²⁵

In Australia, the relationship between SEP and health is more pronounced for Indigenous (Aboriginal and Torres Strait Islander) peoples who have greater risk of ill health, early death and reduced well-being.¹⁴ In almost every dimension, Indigenous Australians experience a higher burden of disease and injury than other Australians. Life expectancy is 15 to 20 years lower and the rates of chronic diseases such as diabetes are increasing.¹ While there have been some gains in Aboriginal and Torres Strait Islander health over the last generation, much of the improvement (seen in neonatal and infant health and infectious diseases) has been offset by the loss of young and middle aged men and women due to health conditions such as pneumonia and cardiovascular disease.⁸

The link between lower SEP and worse health outcomes in Australia is well recognised.^{12, 15, 20} In NSW, the Chief Health Officer's Report for 2000 documented differences in health related to gender, family composition, education level, employment status, place of birth and place of residence. These differences occurred in death rates, levels of illness and disability, risk factors for disease and use of preventive health services.¹⁷

Variations in the burden of disease and injury have also been extensively described in Australian literature. In 1999, Mathers et al¹³ stated that:

- the mortality burden was significantly higher among socioeconomically disadvantaged people;
- the most disadvantaged quintile of the Australian population lost 35% more years of life than the least disadvantaged quintile (1996);
- for Australians aged less than 65, the differential burden between the lowest and highest quartile is even greater, with a 60% excess burden in the most disadvantaged group; and
- men in the bottom quintile of socioeconomic disadvantage have a 40% higher chance of dying between the ages of 25 and 65.¹³

Many of the factors affecting health are determined by the social, economic and political environments in which people live. There is growing evidence that differences in risk factors across populations only partly explain differentials in health outcomes.^{2, 11}

Internationally, countries are placing inequalities on their health agendas. In the United Kingdom (UK) Acheson's *Independent Inquiry into Inequality and Health*² analysed the determinants of health inequalities and made recommendations for action, and *Saving Lives: Our Healthier Nation*²⁷ presented a whole-of-government approach to tackling health inequalities. The Welsh Government has announced strategies to promote and protect health and reduce inequalities in health and access to health services²⁹, as has the Department of Health and Social Services in Northern Ireland.¹⁶ In New Zealand (NZ) the Health Funding Authority proposed an approach to funding health and disability support services which aims to improve health and reduce inequalities in health experienced by Maori, Pacific peoples and other lower socioeconomic groups.⁵ This report stressed the need for the health sector to work closely with other government and non-government agencies to understand the impact of non-health policies on the health status of New Zealanders.⁵ The NZ Ministry of Health has also initiated a process for identifying the causes of health inequalities as a major government priority.¹⁸ The World Health Organization (WHO) report *Social Determinants of Health: The Solid Facts* states: 'policy and action for health need to be geared towards addressing the social determinants of health in order to attack the causes of ill health before they can lead to problems.'³¹

1.2 The role of the health care system in redressing health inequalities

Disadvantaged people have higher mortality and morbidity rates and are less likely to receive good health care at an early stage in an illness or disease.⁹ People on low incomes are generally considered to have greater health needs, are higher users of health services, and also spend a greater proportion of their income on health care than those with higher incomes.⁴

It is important to ensure that people with low incomes have access to health care. Access to health services is multi-dimensional^{3, 19} and includes availability, geographic access, affordability and acceptability. The determinants of health are also multi-factorial, encompassing the social, physical, economic and environmental contexts that influence health directly or indirectly.²⁶

Table 1 explores these dimensions using examples and responses that address the broad definition of health and well-being provided by the WHO: ‘health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.’³⁰

Table 1: Access to health services

Dimension	Example	Example of response
Availability	Cardiac risk factor modification activities such as recreational exercise may not be available in disadvantaged areas (See section 5.1.4)	Provision and promotion of exercise programs in disadvantaged areas
Geographic access	People in rural areas or urban areas of disadvantage are less likely to have breast-conserving surgery (See section 5.1.3)	Transport assistance, outreach services
Affordability	Childhood asthma morbidity is associated with a lack of resources for housing maintenance (See section 5.1.1)	Provision of affordable, quality housing
Acceptability	The level of knowledge/understanding of diabetes may be influenced by ethnic background (See section 5.1.2)	Screening and education programs delivered in a culturally appropriate way

The examples shown in Table 1 highlight the fact that health care practitioners, guideline developers and policy makers have roles in promoting access to all parts of the health care system—from education and prevention, to the provision of quality treatment and care—and also in advocating for health in wider social, physical, economic and environmental contexts. These roles can make an important contribution to improving health and reducing the gap in health outcomes between the most and least disadvantaged groups in society. Furthermore, action taken must be pro-active in order to avoid the perpetuation of existing inequalities into future policies and actions.

The need for multi-level interventions

The health differentials that exist between groups result from complex interactions in lifestyle risk factors, levels of social support and access to resources that promote and protect health such as employment, education, adequate housing. This is acknowledged by Turrell et al²⁶, who also categorised the determinants of health as

upstream, midstream or downstream levels and identified the links between these levels as follows:

- Upstream (macro-level) factors—the fundamental determinants of health which include social, physical, economic and environmental factors.
- Midstream (intermediate-level) factors—the social, physical, economic and environmental contexts that influence health either directly or indirectly. These include psychosocial factors and health behaviours as well as the health care system within the context of culture.
- Downstream (micro-level) factors—these occur at an individual level as a result of the upstream and midstream levels and are usually manifested by health outcomes (mortality, morbidity, life expectancy and quality of life).

Effective approaches to addressing health inequalities should include interventions on all three levels. However, until now, the focus within health services has often been on improving availability and geographic accessibility of services, and on influencing behavioural risk factors. Individual level interventions are limited in terms of their ability to change health differentials at the population level. The capacity of people from already disadvantaged groups to act on lifestyle information from clinicians may be limited, placing them at greater risk of adverse health consequences. If they are to be effective, broad-based community and health promotion programs must address issues for low SEP groups.^{22, 23} For example, clinical guidelines on cardiac rehabilitation that include recommendations for lifestyle change can also acknowledge the effects of SEP on the individual's capacity to make and maintain the required change.

The review by Turrell et al²⁶ states that social support combined with lifestyle advice is 'more effective in changing behaviour among low SES persons than just providing advice alone'. For interventions to be effective it is important to recognise that access to services, the ability to act on advice and the capacity to modify risk factors, are strongly influenced by the circumstances in which people live and work.⁷

1.3 The role of clinical practice guidelines in changing the health care system

Clinical practice guidelines can play an important role in raising awareness of health inequalities by drawing attention to gaps in knowledge and practice and also by making recommendations for improved practice. Guidelines can potentially take into account issues of access to health services as well as the quality of health care and outcomes for socioeconomically disadvantaged groups.

Although many social determinants of health lie outside the control of the health system, CPGs can facilitate change in health practice, and this change can contribute to a reduction in health inequalities. Examples include:

- promoting interventions to address behavioural risk that are sensitive to barriers to healthy lifestyles;

-
- promoting initiatives that improve rates of early detection and diagnosis through improved access to preventive services for relevant groups; and
 - facilitating access to an improved range of treatment services.

1.4 The critical step in achieving health improvements for all

In Australia, six National Health Priority Areas have been identified: cardiovascular health; cancer control; injury prevention and control; mental health; diabetes; and asthma.²⁸ Socioeconomic factors impinge across all of these areas. Turrell and Mathers²⁵ investigated socioeconomic mortality inequalities between 1985–87 and 1995–97 across many of the National Health Priority Areas. In order to more fully understand the distribution of health inequalities in Australia it is important to address the social determinants of health within each of the National Health Priority Areas. Unless this is done there is a danger that aggregate trends showing improvements may mask the widening health inequalities in population sub-groups. For example, the National Health Priority Areas report on cardiovascular health⁷ described a downward trend in overall population death rates, although cardiovascular mortality rates were disproportionately higher for Aboriginal and Torres Strait Islander peoples, remote populations and socioeconomically disadvantaged groups. This report emphasised the need to reduce the impact of heart, stroke and vascular disease on less advantaged groups.

This handbook focuses only on the processes of CPG development. However, to address health inequalities as they occur along the health-disease continuum, it is important to apply an ‘SEP lens’ to all aspects of the CPG development process, from the definition of the topic/issue through to the dissemination and implementation, maintenance and evaluation of the guidelines. NHMRC processes must ensure that the views of less advantaged groups are included through formal public consultations. Furthermore, guideline development committees might include processes involving consumer consultation across the SEP spectrum. This would also be helpful when evaluating and updating guidelines. In addition, the impact of the guidelines on reducing health differentials should be explicitly measured and assessed. (See Flowchart 1 in which the ‘SEP lens’ is applied to ‘identify, appraise and collate evidence of the impact of SEP and health in relation to condition of interest’.)

1.5 Terminology: markers of socioeconomic position and how they are used in this handbook

The aim of this handbook is to assist developers of guidelines to review and incorporate the evidence of the effects of SEP on health outcomes and health care delivery into CPGs. To do this it is important to answer the following:

- What is SEP?
- How are the markers of SEP presented in the literature?

What is SEP?

The term ‘socioeconomic position’ refers to the components of economic and social well-being in a societal context. It is a concept that includes both:

- resource-based measures such as income and educational qualifications; and
- prestige-based measures such as an individual’s rank or status in a social hierarchy, for example the prestige associated with certain occupations.¹⁰

Socioeconomic position is used in this publication because it recognises the way in which a person is positioned or valued within society as well as the resources they have available. Socioeconomic position impacts upon both health outcomes and health services delivery. (See also definitions included in the Glossary.)

How are the markers of SEP presented in the literature?

The literature does not usually make reference to the concept of SEP, instead referring to markers, or descriptors, of SEP such as income, level of education, occupation and employment status.

Table 2 shows how the markers and search terms may be used while maintaining identification of the type of information the terms generate. This list provides a starting point for developers of CPGs. The markers and search terms listed in Table 2 are based on those identified in the literature and are consistent with markers and search terms used by Turrell et al²⁶ in their review of the literature on the socioeconomic determinants of health. These markers are also consistent with those used by the Australian Institute of Health and Welfare (AIHW) to measure health differentials among Australians across a range of age groups.¹²

This list of markers is comprehensive but not intended to be exhaustive. Furthermore, the markers are proxies only and do not necessarily indicate disadvantage for all persons to whom the markers can be attributed. For example ‘ethnicity’ can represent complex social and economic gradients of health and well-being. (See also Appendix C for a list of synonyms used in the literature search.)

Table 2: Markers and search terms for socioeconomic position

Marker	Search Terms	Information generated
SEP	socioeconomic position; SEP; socioeconomic status; SES; class; social class; disadvantage; differentials; gradient; sociodemographic; social determinants	SEP/SES generally, together with articles using other markers, but where the specific details of the marker(s) chosen do not appear in the title or abstract.
Income	income; poverty; wealth; insurance	Differentials in risk, treatment and outcome related to level of income—often as a proxy for SEP. Note that in many United States (US) studies, insurance status is often used as a proxy for income and employment (see below).
Education	education; educational status; literacy	Differentials in risk, treatment and outcome related to level of education. Search results regarding risk modification will require sorting as the general term ‘education’ will also provide papers on health education programs, as well as papers on differentials related to levels of education.
Occupation	occupation	The relationship between occupation and risk, treatment and outcome. Differentials between classes of occupation, for example, professional versus labour-based occupations.
Employment	employment (status); unemployment; insurance	Differentials in risk, treatment and outcome related to employment—often as a proxy for SEP.
Ethnicity	ethnicity; culture; race; Indigenous; Aboriginal	Differentials in risk, treatment and outcome related to race/ethnicity. Mostly literature on African American versus Caucasian versus Hispanic differentials in the US. Use Indigenous OR Aboriginal AND Australia to specifically search for literature related to Aboriginal and Torres Strait Islander peoples.
Housing	housing; tenant; tenure	The relationship between housing and risk, treatment and outcome. Level of public versus private housing, levels of vacant housing, overcrowding and housing turnover are used as a proxy for socioeconomic position of neighbourhoods, rather than individuals.
Area of Residence	urban; rural; remote; geographical; regional variation; urban differential	Differentials in risk, treatment and outcomes related to area of residence—usually the urban/rural differential.
Lifestyle	smoking; married; nutrition; physical activity; exercise; alcohol; tobacco; drugs; overweight; obese	Lifestyle, usually considered as risk factors.
Gender	Gender, sex; sexuality	Differences in risk, treatment and outcomes between males and females.

1.6 Chapter summary

There is strong evidence that despite an overall improvement in life expectancy, improvements in health outcomes are not shared equally between the most and least disadvantaged. In Australia, this disparity is more pronounced in the area of Indigenous health but is also evident when health status is linked to employment, income and area of residence. The determinants of health inequalities are found in the broader social, physical, economic and environmental contexts of people's lives, that is, SEP.

The health care system has a key role to play in addressing health inequalities through improving access and advocating for multi-level interventions. Guideline developers in particular can contribute by using the markers of SEP to locate evidence to facilitate the application of a 'socioeconomic lens' to the development of CPGs.

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2 ASSESSING THE QUALITY OF THE EVIDENCE

This chapter highlights issues concerning the way evidence is currently used in CPG development as a precursor to the development of the framework for guideline developers introduced in Chapter 3. The authors acknowledge, however, that there are also many complex ethical and political issues, concerning how the evidence is used to inform decision-making and resource allocation. These issues are beyond the scope of this handbook.

2.1 Levels of evidence for clinical interventions

The evidence used in CPG development is considered to be most robust when obtained from a systematic review of all relevant randomised controlled trials (RCTs). The grading of evidence, as outlined by the NHMRC¹² considers the following issues:

- the degree to which the treatment effect could be due to bias (ie the level and quality of the evidence) or chance (the statistical precision or *P*-value); and
- the size (or magnitude) of the effect and its relevance to clinical practice.

The level of evidence indicates the study design used by the investigators to assess the effectiveness of an intervention. That is, the level assigned to a study reflects the degree to which bias has been eliminated from the study design.

The NHMRC has published the following designation of levels of evidence for clinical interventions.¹² This is also known as the evidence hierarchy.

Level I Evidence obtained from a systematic review of all relevant RCTs.

Level II Evidence obtained from at least one properly designed RCT.

Level III-1 Evidence obtained from well-designed pseudo-RCTs (alternative allocation or some other method).

Level III-2 Evidence obtained from comparative studies (including systematic reviews of such studies) with concurrent controls and allocation not randomised, cohort studies, case control studies, or interrupted time series with a control group.

Level III-3 Evidence obtained from comparative studies with historical control, two or more single arm studies, or interrupted time series without a parallel control group.

Level IV Evidence obtained from case studies, either post-test or pre-test/post-test.

The term 'levels of evidence' has been widely adopted to determine the grade of recommendations for clinical practice. The term has also been applied to other

areas of evidence-based decision-making in health including prognosis, diagnosis and economic analysis. However, CPGs based on Level I or Level II evidence are not always relevant to the needs of individual patients.⁶

2.2 Socioeconomic status as an effect modifier in RCTs

Randomised controlled trials are the most scientifically rigorous method of hypothesis testing available in epidemiology⁹, and are considered the ‘standard of excellence’ when studying the effects of treatment in clinical trials.³ Subjects for RCTs are drawn from a reference population with their eligibility determined by whether they satisfy specified inclusion and exclusion criteria and consent to join the study.

In RCTs, subjects are randomly allocated (randomised) to either the study (or treatment) or control groups, to receive or not receive the intervention. The process of randomisation assigns subjects to groups without bias, and theoretically this means that at baseline subjects in one group are as likely to possess characteristics as subjects in the other group(s). Given a large sample size in an RCT, randomisation achieves a balance of unknown factors. The conclusions drawn assume that the outcome is a direct result of the intervention, rather than the result of differences between the groups. To allow for differences between the groups which are due to chance, the results are expressed along with a *P*-value (probability that the difference is due to chance) or confidence interval (precision of estimated value for each group).

Sometimes the direction or strength of association between two variables differs depending upon the value of a third variable, such as SEP, which has an impact upon the way different groups respond to treatment. This differential effect is called ‘effect modification’ by epidemiologists and ‘interaction’ by biostatisticians.⁸ Effect modification is not the same as confounding, which occurs when other factors are confused with treatment or outcome.

Under effect modification, the treatment produces differential effects in sub-groups. While it is possible to control for effect modification in RCTs, this is not always done because the statistical sub-group analyses require minimum sample sizes. The question then becomes: ‘is there a need to consider stratification to look for SEP effects in order to ensure that the results can be generalised to sub-groups within the broad population?’

If guidelines and policy are informed by evidence which masks the impact of SEP then existing health inequalities will be reinforced. A hypothetical example follows.

Suppose a clinical trial (RCT) is conducted to test the efficacy of a drug for depression. The outcome measure is the mean change in subjects’ scores on a rating scale for depression, from baseline to last assessment at the end of the study. The results show a significant improvement in depression scores in the treatment compared with the control group. However, the trial resulted in a differential

response to the drug across SEP groups (with low SEP groups responding poorly and high SEP groups responding well). The use of average response as an outcome variable masks the differences between the high and low SEP groups. The conclusions of the trial refer to the efficacy of the drug for the treatment of depression in general, without consideration of the socioeconomic influences on treatment (ie effect modification).

Prescribing guidelines based on this evidence alone may result in a divergence in health outcomes across the SEP spectrum. One option is to give guideline developers direction on how to access and interpret evidence that is relevant to SEP influences on access to health care services and likely health outcomes. These issues are addressed in the framework developed and applied in Sections 3.2 - 3.4, and Chapter 5.

The principal focus of RCTs is to measure and compare outcomes in the treatment and control groups. Assessment of the quality of RCTs is generally based around the validity of the trial in relation to the hypothesis being statistically tested. When assessing the impact of SEP and health in RCTs, guideline developers should also identify markers of SES/SEP in the data and investigate relationships between these markers and the outcomes of the study. (See Section 1.5.)

2.3 Problems in extrapolation of RCTs to disadvantaged populations

Randomised controlled trials frequently use homogenous population samples and analyse the effects of simple, single interventions.^{14, 15} Factors associated with consent, inclusion and exclusion are not always randomly distributed. For practical reasons including accessibility, availability and convenience, RCTs often exclude women, the poor, those with co-morbidities or those who are receiving multiple treatments, older people, those at greater risk of complications and those with limited life expectancy.

The non-representation of sub-populations in RCTs means that the potential impact of the intervention on these groups remains unknown. Disadvantaged groups, not represented in RCTs may require different interventions to achieve the same gains as more advantaged groups¹⁰, yet this evidence is not usually accessed to inform CPGs.

Randomised controlled trials are often conducted in artificial settings in which real world issues such as barriers to access and resource constraints are not apparent. There have however, been some attempts to teach clinicians how to interpret the applicability of the results of clinical trials for their own patients^{2, 5}, although CPGs do not often take practical issues, such as the capacity of existing services and access to services, into account.⁷

The issue of external generalisability for RCTs is complex. Whether the results of RCTs are generalisable or not also depends upon the type of intervention being tested, for example, whether it relates to a biological or therapeutic effect or the implementation of a therapeutic or preventive action.¹

2.4 Assessing the quality of evidence on SEP

Effect modification according to SEP is not always undertaken in RCTs. However other studies exploring the relationship between SEP, health and interventions are generally not suited to assessment according to the criteria for Level I or II evidence. At the same time, it is important that the use of evidence hierarchies to compare the potential for bias between study designs does not translate into unrealistic or overly expensive demands for Level I or II evidence when there is adequate Level III evidence available.¹⁴

Substantial evidence exists on the various relationships between SEP and health in epidemiological, cohort, cross-sectional, observational, and qualitative studies. Assessment of the quality of the evidence on SEP and health should use the standards for assessing these forms of evidence.

There is also an increasing body of literature devoted to the development of assessment criteria for Level III and IV evidence. See Table 3 for some sources of this literature. Guideline developers can refer to this literature for guidelines on assessing the quality of evidence on SEP and health.

Table 3: References for Level III and IV evidence

Reference

Rychetnik, Frommer et al 2002 Criteria for evaluating evidence on public health interventions ¹⁴	Presents an up-to-date and well referenced (115 refs) summary of criteria for appraising: <ul style="list-style-type: none">• quantitative evaluations of intervention effectiveness• economic evidence• qualitative or interpretive evidence• process evaluations on intervention implementation
Rychetnik and Frommer 2002, An evaluation of evidence on public health interventions: version 4 ¹³	Presents a system for appraising evidence on public health interventions including: <ul style="list-style-type: none">• randomised controlled trials• observational studies• economic evaluation• qualitative studies
Friedland 1998 Evidence-based medicine: a framework for clinical practice ⁴	Includes a guide for assessing the validity of studies including: <ul style="list-style-type: none">• analytic studies—experimental, cohort, case-control and cross-sectional• descriptive studies
Muir Gray 1997 Evidence-based healthcare ¹¹	Presents a series of checklists for the appraisal of research including: <ul style="list-style-type: none">• systematic reviews• randomised controlled trials• case-control studies• cohort studies• surveys• decision analysis• qualitative research

Care should be taken in assessing the relevance of research findings to the Australian context. Lack of access to timely health care is one mechanism which may explain poorer health outcomes in patients of lower socioeconomic status/position. Extrapolating findings from health care systems where lack of universal health insurance coverage reduces access to timely care should be done with caution, taking into account whether access issues are similar to those in Australia.

2.5 Chapter summary

Much of the evidence on the relationship between SEP, health and interventions is found in Level III and IV evidence. Guidelines based on Level I and II evidence (RCTs) are using the most methodologically robust evidence. However, the non-representation of population sub-groups and the inability to control for effect modification limits the generalisability of this evidence to disadvantaged sub-groups. Skills in assessing the quality of Level III and IV evidence are needed in order to include evidence on SEP and health in CPG development. The core message in this handbook, however, is that clinical guideline developers must at least be aware of these important and complex issues, and also have some understanding of processes which can be used to individualise recommendations for groups of patients not represented by clinical trials. The framework presented in Chapter 3 is a start.

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3 **FRAMEWORK: CLINICAL EVIDENCE OF HEALTH INEQUALITIES**

This chapter begins with a review of the literature on the relationship between SEP and health and CPGs. The review explores the extent to which SEP has been incorporated into the development of CPGs. A framework is then proposed which outlines steps to be followed in accessing and applying evidence on SEP in the development of CPGs. Two examples of the use of the framework are provided at the end of the chapter.

3.1 Literature review on the relationship between socioeconomic position and health and clinical practice guidelines

The aims of this literature review were to identify and describe instances of where CPG developers:

- have explicitly acknowledged evidence of the relationship between SEP and health; and
- have used that evidence to shape their CPGs.

The results of the review of the published and unpublished literature on CPGs and SEP and health are summarised here. An electronic search of the published peer-reviewed literature (1990 to 2001) was conducted using journal catalogues and databases. Unpublished literature and informed feedback was accessed through international networks of colleagues using email and electronic listserver postings. (See Appendix C for further detail and an outline of search methods.)

This search was limited to published and unpublished literature since 1990. The development and use of CPGs became more widespread in the 1990s⁹, and the popularity of CPGs has been driven by the need for accountability within the health care system, as well as the increasing interest by practitioners and policy makers in evidence-based medicine.^{16, 22}

The published literature linking SEP and health is vast. Recent Australian reviews include Turrell et al²⁷ and Griffiths et al.¹¹ There has been some implicit acknowledgment of the link between SEP and health in relation to CPGs, for example in recommending the most affordable drug for a medical condition in a certain setting. There are, however, few examples of where guideline developers explicitly acknowledge evidence of the relationship between SEP and health and then use that evidence to shape and develop guidelines and associated recommendations for the broad population.

Given the paucity of examples where CPG developers have explicitly used evidence of SEP to shape their guidelines, instances where SEP was implicit, where guidelines were developed for sub-groups, or where CPGs have been assessed on the basis of socioeconomic factors, have also been included here.

3.1.1 Indirectly incorporating SEP and health into clinical practice guidelines

While no CPGs that explicitly acknowledged and allowed for the impact of SEP were identified, there was evidence that some CPGs implicitly, and some indirectly, recognise this relationship. This often occurs in the way psychosocial factors and cultural appropriateness are addressed, or when guidelines are reformulated and modified to meet the needs of targeted disadvantaged sub-groups in the population. While one step removed from directly incorporating SEP into CPGs for the broader population, these alternative approaches illustrate the way in which factors contributing to SEP are acknowledged in the CPG development process.

Psychosocial factors

Some examples where CPG developers have explicitly acknowledged evidence of the influence of psychosocial factors and incorporated this into guideline development were identified (through both the published and unpublished literature). In this context, psychosocial factors refer to the patient's lifestyle, mental health, occupation, social environment and personal relationships. While there is an implicit link between SEP and psychosocial factors, they are not equivalent terms, as many psychosocial factors may be found across the SEP gradient (eg gender). To the extent that psychosocial factors overlap with SEP, they are relevant to this review, and some of these are noted here as examples of where CPG developers have acknowledged and incorporated non-clinical evidence. It should be recognised however, that these examples of the use of psychosocial factors in CPGs are not specific examples of guidelines that incorporate evidence of the influence of SEP into guideline development.

A published paper by Burton and Waddell⁴ reviewed several international CPGs for the management of low back pain and found a general recognition by guideline developers that psychosocial factors (eg occupation, income) are important in reducing the risk of chronic pain and disability due to chronic low back pain. In particular, the 1994 UK and the 1997 NZ guidelines for the management of low back pain had 'strong psychosocial' features. The 1997 NZ guidelines include 'yellow flags' to highlight psychosocial risk factors (including socioeconomic influences and the interaction between the person and their social environment) that increase the risk of developing or perpetuating long-term disability and work loss associated with low back pain.

Correspondence with colleagues located a work-in-progress set of clinical practice cardiac rehabilitation guidelines (made available for peer review and feedback through the website www.nzgg.org.nz) which acknowledged that SEP

has an impact upon psychosocial attitudes and responses which influence behaviours (eg smoking, eating) that are inherent cardiovascular risk factors. These draft guidelines also caution the reliance on evidence from RCTs for cardiac rehabilitation given that the effectiveness of the intervention in the community may not equate with efficacy as measured in the clinical trials.

Cultural appropriateness

The search of the published literature identified two papers by Katbamna et al¹³ and Shoultz et al¹³ which described the development of culturally appropriate CPGs using qualitative methods as an adjunct to evidence-based medicine. These studies demonstrate the way in which qualitative research can be used to provide evidence on cultural and ethnic issues as part of SEP and health and this information can then be used to inform culturally appropriate CPGs. It is important to note also that there are complex social and economic gradients within many ethnic groups.

The Katbamna¹³ study was aimed at developing guidelines to assist primary health care teams in their work with carers within South Asian communities. The views of carers were recognised and identified using qualitative methods, and as a result, guidelines were developed which explicitly allow for the cultural and religious beliefs of the carers.

Shoultz et al²⁴ conducted a qualitative study in Hawaii to develop culturally appropriate guidelines to prevent alcohol and drug abuse. They formulated an adapted protocol that addresses cultural perceptions and preferences, and recommended further research to implement and evaluate the adapted guidelines for alcohol and drug abuse prevention. Like Katbamna et al, Shoultz et al demonstrated the important and under-recognised role of qualitative research in understanding the cultural aspects of health care delivery and incorporating this evidence into guideline development.

Targeting population sub-groups

Further communication through national and international networks led to the identification of a number of reports and clinical guidelines that target the reduction of health inequalities in disadvantaged sub-groups in the population.

In 2001, the Office for Aboriginal and Torres Strait Islander Health (OATSIH) produced *Specialist Eye Health Guidelines for Use in Aboriginal and Torres Strait Islander Populations*.²¹ These guidelines provide a foundation for future surgical and medical interventions for eye health specialists in the treatment of cataract, diabetic, retinopathy and trachoma in the Aboriginal and Torres Strait Islander population. In the same year OATSIH also produced recommendations for clinical care guidelines for the management of otitis media in Aboriginal and Torres Strait Islander populations.²⁰ The recommendations in these guidelines were derived from a systematic review of existing evidence and primary care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander populations prepared by Couzos et al.⁶ These CPGs acknowledge the

link between low SEP and poor health as well as the geographic and cultural factors influencing service delivery in this sub-group relative to the broader population. Further resources for Aboriginal and Torres Strait Islander health can be obtained from the OATSIH website www.health.gov.au/oatsih/.

Similar work has also been undertaken in New Zealand with regard to Maori and these guidelines have a health equity policy focus. The report *Striking a Better Balance*⁵ proposes an approach to funding health and disability support services to reduce inequalities for socioeconomically disadvantaged groups.

In the US the Health Care for the Homeless (HCH) Clinicians' Network, which is a member organisation of the National Health Care for the Homeless Council (NHCHC) produces CPGs, best-practice recommendations and clinical policy and procedure guidelines for homeless people. Information on the HCH Clinicians Network can be found at the website www.nhchc.org/Network/index.htm. Information on NHCHC can be found at the website www.nhchc.org.

3.1.2 Guideline assessment

Despite the lack of published reports, examples or studies that explicitly allow for SEP and health in CPG development, the literature search captured a number of studies concerned with the assessment of already established CPGs. The majority of these studies focused on guideline implementation issues and related barriers such as patient compliance and physician adherence. The purpose of these studies was to inform the development of future CPGs, both by providing evidence of the link between SEP and health and CPGs, and by recommending changes to existing guidelines.

One guideline assessment study was identified which focused on assessing the guidelines as written, rather than on measuring or commenting upon implementation issues. Giacomini et al¹⁰ investigated the terms and justifications for and the meanings of psychosocial patient characteristics used in cardiac procedure guidelines. As a result, Giacomini et al made recommendations regarding the way in which socioeconomic and psychosocial factors should be incorporated into future guidelines for cardiac procedures. The researchers conducted a qualitative analysis of the psychosocial patient selection criteria for CPGs that were used for making recommendations for patient selection for cardiac procedures. A multi-disciplinary team of physicians and social scientists extracted sections in the guidelines regarding psychosocial criteria, and developed categories and conceptual relationships to describe and interpret their content. They identified 65 papers that met the inclusion criteria for their study and of these, 45 (69%) mentioned psychosocial criteria as procedure indications or contraindications.

The findings of the Giacomini et al study¹⁰ were that cardiac procedure guidelines typically listed psychosocial contraindications without clarifying the nature of the psychosocial issue or actually incorporating evidence of SEP and health into guideline development. The authors concluded that in comparison with biomedical selection criteria, psychosocial selection criteria tend to be

‘vaguely described and inadequately substantiated’ in CPGs and that uncritical, inconsistent or prejudicial application could unfairly limit access for vulnerable or marginal groups in society.

The Giacomini study¹⁰ also highlights the dual roles of psychosocial characteristics in patient selection for interventions; that of risk factors intrinsic to the patient and also as indicators of need for the intervention. When interventions are resource intensive, such as the case for cardiac procedures, the second role is of major significance and raises many ethical issues in relation to resource allocation. Giacomini et al recommended two key reforms for cardiac procedure guidelines. Firstly, that the guidelines should describe the psychosocial problem using clear and specific terminology and suggest the most reliable and valid approach to assessing potential candidates and secondly, that the guidelines should explain why particular psychosocial characteristics are important considerations. They concluded that where guidelines prescribe how procedures should be allocated across potential patients, they should be scrutinised not only for their clinical validity but also for their ‘validity as distributive algorithms’.

A study by James et al¹², which assessed the impact of patient-centred factors on primary care physicians’ decisions to adhere to an evidence-based CPG for heart failure, had findings consistent with the Giacomini study.¹⁰ James et al¹² found that patient concerns about their finances, quality of life and the location of care influenced physician’s non-adherence to a heart failure guideline. The findings of this study suggest that physician performance profiles, which measure their adherence to guidelines, should be interpreted with caution due to the fact that there are many other variables at play.

In their cardiac study Mejhert et al¹⁸ described clinical data in a cohort of patients admitted to hospitals in Sweden with heart failure and found that in contrast to clinical practice guidelines there was an under-use of diagnostic tests of left ventricular function, particularly for women. The authors claimed that the results of their study imply a gender bias in physician adherence to heart failure guidelines. While the results do not have strong socioeconomic implications, they highlight the existence of non-clinical factors in clinical decision-making.

A number of studies have looked at geographic issues associated with the implementation of CPGs. Meng et al¹⁹ used a cross-sectional study to examine the compliance with the National Asthma Education Program guidelines across different geographic regions in the US, and although they found low levels of compliance, they were unable to detect any significant causal relationships between compliance and respondent characteristics. The results of this study were used to recommend a greater involvement by all stakeholders in guideline dissemination and implementation.

Yawn²⁸ estimated the impact of a practice guideline for diabetes on the needs of the rural health professional workforce. The author found that the implementation of a practice guideline for low socioeconomic diabetes patients in rural Minnesota would require a 1.3–2.4% increase in the number of primary care physicians and a 1.0–6.6% increase in the number of eye care clinicians.

While the study was aimed at informing rural medical workforce planning, it also has implications for guideline development in relation to the delivery of health care in rural areas.

A study by Tropman et al²⁶ identified deviations from the US National Cancer Institute's established treatment recommendations among rural breast cancer patients. They found that more research is needed to develop better methods for dissemination of state-of-the-art cancer information to rural physicians and patients as well as understanding how treatment decisions are made. The results of this study can be used to acknowledge urban/rural issues in CPG development for cancer patients.

A diabetes study by Larme and Pugh¹⁵ aimed to explore what happens to diabetes practice guidelines in real world settings. The authors concluded that contextual factors were more important barriers to optimal diabetes care than physician knowledge and attitudes. They identified barriers to guideline implementation that included the low SEP of patients and lack of access to care for low-income patients.

There is a considerable body of evidence that demonstrates that ethnic groups suffer disproportionately high morbidity rates.⁷ In Australia, Cunningham⁸ found that there are systematic differences in the treatment of patients who identify as Indigenous in Australian public hospitals.⁸ In the US, Krishnan et al¹⁴ examined the relationships of race and gender with CPGs for asthma management, and found that African Americans were less likely than whites to report care that was consistent with guideline recommendations. The study results suggested that differences in aspects of medical management might contribute to race disparities in asthma outcomes and support a case for the development of culturally appropriate guidelines for chronic disease management more broadly. Similar findings were made in the Australian context for Aboriginal and Torres Strait Islander peoples.⁶

A study by Ronsaville and Hakim²³ sought to estimate the rate of compliance with American Academy of Pediatrics' guidelines for well child care in the first six months of life to determine risks for inadequate care. They identified racial disparities and recommended further research into programs to reduce racial and cultural barriers to preventive care.

Further studies investigated the barriers that exist to implementing CPGs on screening programs in socioeconomically disadvantaged groups and ethnic minorities. A publication by Mandelblatt and Yabroff¹⁷ outlined the main breast and cervical cancer control challenges for the 21st century. The paper defined which groups were more likely to benefit from screening, improving the use of regular detection tests and educating providers to decrease biases based on patient age, ability or race. Brenes and Paskett³ conducted a study of a randomly selected sample of 202 predominantly low-income and African American women and found that psychosocial factors play an important role in screening for colorectal cancer. The criteria for screening in Aboriginal and Torres Strait Islander populations include safety and acceptability, as well as the need for sufficient follow-up resources and the acknowledgment by the Aboriginal and Torres Strait Islander people that the benefits outweigh the intrusion into their lives.⁷

A study by Black et al² demonstrated that data analysis and feedback could provide a powerful adjunct to the development and implementation of CPGs. The analyses provided impetus for addressing issues in guideline development and suggested that the target audiences for intervention should be rural physicians rather than urban specialists.

The EISBERG project (Evaluation and Interventions for Systolic Blood Pressure Elevation-Regional and Global)²⁵ was conceived to examine the reasons for sub-optimal hypertension management in response to the shortcomings in hypertension management, which include socioeconomic factors, professional shortcomings and patient non-compliance with management regimens. Swales, reporting on EISBERG, stated it was important not to under-estimate the effects of social and economic factors on population-based strategies to promote better control of hypertension and recommended that such considerations be used to inform guideline development.

Ammerman et al¹ described an ongoing research program designed to develop and test practice models for applying the '1998 Adult Treatment Panel Guidelines' for the clinical management of high blood cholesterol. Patients in the RCTs that comprised this study were from diverse socioeconomic and ethnic backgrounds. This study provides insights into how to conduct research on the application of preventive health guidelines in the context of non-academic primary care practices serving diverse populations, and further reinforces the need to seek evidence beyond that conducted in experimental trials.

3.1.3 Literature review summary

The literature search and correspondence with guideline developer groups worldwide located no examples of where CPG developers have explicitly incorporated evidence on SEP and health into generic CPGs, except for when guidelines are developed for specific disadvantaged sub-populations. In Australia the Office for Aboriginal and Torres Strait Islander Health has done considerable work in this area. This chapter also explores examples of where SEP has been acknowledged in relation to the assessment of existing CPGs with a view to informing the development of future guidelines.

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3.2 A framework for using evidence on socioeconomic position in the development of clinical practice guidelines

One disadvantage of RCTs is their limited ability to generalise findings across a broad population. This is due to the inclusion and exclusion criteria applied to subjects in RCTs creating a sub-group of the general population. Because of their reference to population sub-groups, RCTs do not usually represent the spread of socioeconomic groups found in the broader population.

When CPGs are developed using RCT evidence alone, they lack relevance to the SEP of groups not represented in the trials. (See Section 2.3 for further discussion of these issues.) One way of addressing this is to identify the socioeconomic groups to which the RCTs refer, and suggest that other levels of evidence can be incorporated to make CPGs more relevant. Another option is to develop targeted guidelines specifically for different groups^{9, 17} as has been achieved by OATSIH (www.health.gov.au/oatsih/). Developing targeted guidelines for different groups however, introduces political and ethical issues when population sub-groups receive different services. In addition complex equity gradients often exist within population sub-groups.^{4, 20}

Another approach has been to call for the ‘grounding’ of RCT-based evidence within the context of practitioner experience and patient compliance.^{15, 21} However, this does not necessarily promote equitable outcomes. In the traditional biomedical model of disease, non-compliance is viewed as a form of ‘self-punishment’ when the patient deliberately disobeys the doctor’s orders.¹⁸ Factors within the socioeconomic context that may affect adherence have not been extensively discussed in the literature, although this is changing.¹⁰

The idea that health decisions vary between circumstances and require tailored, complex approaches, is receiving increasing attention.^{7, 15, 21} Shared or participatory decision-making, community capacity building, health impact assessments and the increased recognition of the need for health workers to operate in multi-disciplinary teams, are all examples of endeavours to increase the capacity for appropriate client-centred health activities.^{13, 14}

The traditional biomedical model of health does not employ tools to measure equity across health outcomes. However the use of client-centred, rather than practitioner-centred, language may assist practitioners in their consideration of health equity issues. Rather than focussing on developing evidence for homogeneous populations, the barriers to achieving health gains are to be addressed by shared medical decision-making.¹⁸ Socioeconomic effects must be addressed, and instead of simplifying compliance, the multiple factors (personal, behavioural, social and environmental) that have an impact upon capacity to comply, must be considered.^{3, 10} It is important that the outcomes of health intervention studies encompass the distribution of broad health gains beyond the focus of RCT-based evidence.^{5, 22}

This handbook proposes a framework (see Section 3.3) for using evidence on SEP and health in the development of CPGs. This framework is intended to provide a process to ensure that CPGs address, rather than exacerbate, health inequalities. The application of the framework will assist in the development of CPGs which:

- identify the groups within the population who are experiencing inequity in the form of health service delivery and/or outcomes;
- identify interventions that ameliorate any inequalities and barriers to improved health;

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- provide recommendations for interventions to improve health service delivery and/or outcomes;
 - present recommendations within a shared, informed, decision-making framework;
 - frame recommendations so that all clients/patients have an equal opportunity for achieving health gains; and
 - conceptualise outcomes in a broad way to include clinical outcomes, quality of life and well-being, and social justice and equity.

3.3 The framework

The framework presented here has been developed specifically for this NHMRC handbook. It represents a logical stepped process that begins with the identification of the required health decisions, leads into specific questions for the literature search and results in recommendations to incorporate evidence on SEP and health into CPGs. Examples of the use of the framework are given in Section 3.4.

Step 1: Identify the health decisions required

The health decision could be any type, from individual treatment decisions to the formulation of guidelines for whole communities. In the context of CPG development, there may be many decisions at different points in the diagnosis/treatment pathway for a single guideline.

Step 2: Search the literature for evidence that, due to SEP, population sub-groups may experience barriers to and/or have limited capacity or opportunities to achieve equal health gains

The literature should be searched using markers of SEP, the condition or disease of interest and the required health decision, to identify population sub-groups who may experience barriers, limited capacity or opportunities to achieve the same health gains as other sub-groups or populations. Evidence on the relationship between the markers of SEP and the health decisions may include factors at the physical, economic or social environment levels such as health service provision, transport and housing infrastructure, and health determinants such as education, employment, occupation, income, housing and area of residence.^{16, 19} (The descriptive matrix shown in Section 5.1 may be used to classify and summarise this evidence.)

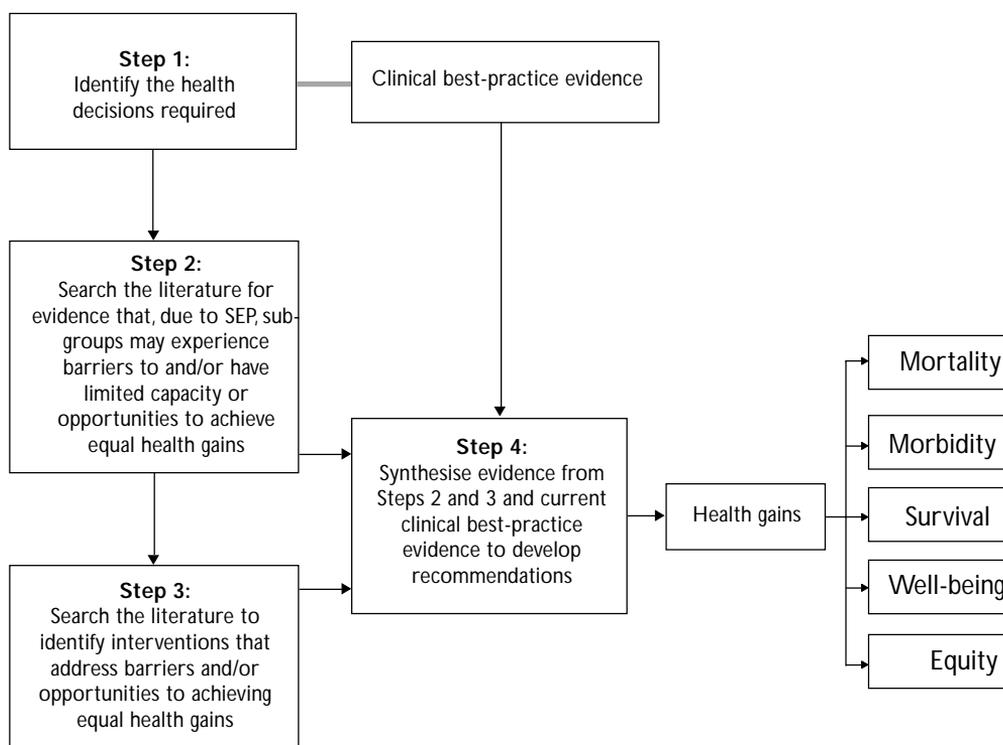
Step 3: Search the literature to identify interventions that address barriers and/or opportunities to achieving equal health gains

Literature describing interventions that attempt to address barriers and opportunities to achieving equal health outcomes should be identified. Depending on the health decision required, literature reporting interventions to address the socioeconomic barriers to health gain may be scarce. In such cases, general principles of equitable service provision may be applied, that is, 'everyone should have a fair opportunity to attain their full potential and ... no-one should be disadvantaged from achieving this potential, if it can be avoided.'²⁰

Step 4: Synthesise evidence from Steps 2 and 3 and current clinical best-practice evidence to develop recommendations

Develop recommendations in order to maximise health gains for individuals and ensure that these are equitably achieved across the SEP gradient. Guideline developers would use the evidence from population sub-groups experiencing barriers and interventions, addressing these barriers, together with the evidence

Flow Chart 2: A framework for using evidence on socioeconomic position in the development of clinical practice guidelines



of best clinical practice, to develop recommendations to achieve the best clinical outcomes and the most appropriate distribution of health gains.

The above framework shows that using the literature to identify and address the barriers to achieving equitable health gains is an essential step in the process of developing guidelines. By addressing these factors at the outset, decision-making becomes a fully informed and participatory process, leading to improved health gains.^{1, 2, 6, 8, 10-12, 21}

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3.4 Examples of the use of the framework

The following are illustrative examples of the use of the framework and therefore must not be read as amended guidelines or standards. They do not include a systematic evaluation of the quality of the evidence to which they refer. The same principles apply to the case studies presented in Chapter 5.

3.4.1 Breast cancer as an example of use of the framework

Step 1: Identify the health decisions required

Guideline	Level of evidence	Reference No.
Where appropriate, women should be offered a choice of either breast-conserving surgery followed by radiotherapy or mastectomy, as there is no difference in the rate of survival or distant metastasis.	1	195

Reference Source: National Breast Cancer Centre 2001. *Clinical Practice guidelines for the management of early breast cancer*. Second edition. : Canberra. NHMRC.

Step 2: Search the literature for evidence that, due to SEP, population sub-groups may experience barriers to and/or have limited capacity or opportunities to achieve the equal health gains

(search for breast AND cancer AND markers of SEP AND treatment/therapy). See Table 2 for examples of markers and search terms for SEP.

Evidence from epidemiological and cross-sectional studies shows that some groups of women are less likely to choose or are less likely to be offered the choice of breast-conserving surgery. These groups include:

- women of lower SEP^{17, 21, 32, 35}
- women of Aboriginal or Torres Strait Islander background²⁶
- women with lower levels of education^{2, 4-6, 12, 16, 18, 22, 23, 25, 27, 29, 30, 36-38}
- women with lower income^{2, 4-6, 12, 16, 18, 22, 23, 25, 27, 29, 30, 36-38}
- women living in rural areas^{1-3, 9, 10, 12-15, 18-20, 24, 33, 34, 38-42}

There is also evidence that women with lower educational levels have poorer outcomes following breast-conserving surgery, due to the impact of reduced literacy upon compliance with the recommended radiotherapy regime.

Step 3: Search the literature to identify interventions that address barriers and/or opportunities to achieving equal health gains

(search for breast AND cancer AND markers of SEP AND treatment/therapy)

Although there is a great deal of evidence about the relationship between SEP and the surgical treatment undertaken, there is less evidence relating to the interventions that are effective in addressing the barriers to making an informed choice of breast-conserving surgery or mastectomy. At a more generic level,

interventions that may be helpful in promoting an informed choice of surgery include:

- involvement of a multi-disciplinary team including referral to a client advocate, social worker, counsellor or specialist breast nurse¹¹
- financial, accommodation and transport assistance^{10, 15}
- providing information about support services⁸
- providing information in a culturally and educationally appropriate form^{7, 28}
- acknowledging and accommodating if possible, a women's work and family responsibilities³¹

Step 4: Synthesise evidence from Steps 2 and 3 and current clinical best-practice evidence to develop recommendations

RECOMMENDATION

Prior to offering the choice of either breast-conserving surgery or mastectomy, the clinician should discuss with the woman any geographic, financial, cultural, social or educational barriers that may affect her capacity to gain maximum benefit from the treatment of her choice. Ensuring the provision of transport assistance, financial assistance, culturally and educationally appropriate information, referral to a social worker or specialist breast nurse, support for work and family responsibilities and involvement of the multi-disciplinary team will facilitate informed decision-making and result in the most appropriate health gain.

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3.4.2 Risk factor modification in cardiac rehabilitation as an example of use of the framework

Step 1: Identify the health decisions required

Overweight and obese patients should be counselled to optimise their body weight and increase physical activity. (Reference Source: NSW Policy Standards for Cardiac Rehabilitation. Section 8.3.5 Risk Factor Modification—Overweight and Obesity, Standard 2, page 25, NSW Health Department). Cardiac rehabilitation refers to secondary prevention for those with pre-existing ischaemic heart disease.

Step 2: Search the literature for evidence that, due to SEP, population sub-groups may experience barriers to and/or have limited capacity or opportunities to achieve the equal health gains

(Search for obesity/overweight/obese AND markers of SEP AND heart disease/cardiovascular disease/ischaemic heart disease/coronary heart disease/heart failure/myocardial ischaemia/pulmonary heart disease). See Table 2 for examples of markers and search terms for SEP.

Obesity alone does not account for the prevalence of social inequalities in the area of myocardial infarction.⁵ However, evidence from epidemiological and cross-sectional studies shows that socioeconomic factors limit the capacity to optimise body weight and increase physical activity, including:

- situational barriers to increasing intake of fruit and vegetables¹ (including specific situational barriers for Indigenous communities)
- lack of childcare, lack of transportation, neighbourhood and family constraints which limit women's ability to participate in exercise programs²
- lower SEP, social and physical environments associated with care-giver responsibilities, physical labour as an occupation, lack of transportation, unsafe neighbourhoods, and inflexible work schedules are barriers to adopting and maintaining a physically active lifestyle^{6, 7}
- poor health literacy and lower levels of education are barriers to positive change in cardiovascular risk factors¹⁰

Step 3: Search the literature to identify interventions that address barriers and/or opportunities to achieving equal health gains

(Search for obesity/overweight/obese AND markers of SEP AND heart disease/cardiovascular disease/ischaemic heart disease/coronary heart disease/heart failure/myocardial ischaemia/pulmonary heart disease AND patient education/health education/intervention)

Interventions to maximise opportunities and the capacity for optimising body weight and increasing physical activity should include social support as well as lifestyle advice, as this has been shown to be more effective than advice alone.^{4, 9} 'Successful promotion of physical activity depends on the removal of any obstacle that may interfere with acceptance of and adherence to spontaneous or formal exercise.'⁷

In order to maximise health gains, interventions should be low cost, scheduled at appropriate times and include assistance with transportation, childcare, and address health literacy.^{2, 3, 8} It may also be possible to utilise existing culturally appropriate forums and collaborate with appropriate existing community groups.

Step 4: Synthesise evidence from Steps 2 and 3 and current clinical best-practice evidence to develop recommendations

RECOMMENDATION

Counselling for weight loss and increased physical activity should be conducted within a program of social support and interventions addressing the geographic, financial, social or educational barriers that may affect the patient's capacity to gain maximum benefit. Ensuring the provision of transport assistance, financial assistance, educationally appropriate information, and support for work and family responsibilities will facilitate informed decision-making and maximal health gains, while providing opportunities to identify and advocate for policy reform.

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3.5 Chapter summary

There is negligible evidence that the developers of CPGs have explicitly allowed for the effects of SEP and health in the guidelines development processes. The framework, which has been developed specifically for this NHMRC handbook, outlines steps on how to use evidence on SEP and health in the development of CPGs. The four-step framework is presented using text and flow chart. Two, purely illustrative, clinical examples of the use of the framework are included. The application of this framework in clinical guidelines development, will ensure that CPGs address, rather than exacerbate, health inequalities.

4 WHAT TO DO WHEN THERE IS NO EVIDENCE

The literature available on the impact of SEP on health and disease is variable. Often the evidence that is identified does not appropriately address the impact of SEP on risk factors, health status, intervention and outcomes. A number of strategies can be used when the usual searches of the peer review literature return minimal appropriate evidence.

4.1 Broadening the search strategy

In situations where the literature is limited, the search strategy should be broadened. Socioeconomic terms can be expanded using synonyms for the markers of SEP.⁴ For example, the indicator ‘income’ could also be flagged by the use of the synonyms ‘wealth’, ‘poverty’ or ‘insurance’ (see Table 2).

Another approach is to repeat the initial search strategy using a similar disease or related condition. For example, if the disease was type 2 diabetes and the evidence returned was limited, the same SEP terms could be used in a search for type 1 diabetes. Similarly, ‘asthma’ may be replaced with the broader disease term of ‘respiratory illness’. This strategy would allow extrapolation of the potential effects of SEP on a similar disease.

The search strategy can also be expanded along the health-disease continuum, from primary prevention to rehabilitation. While the area of interest may be that of primary prevention, if limited information is available in this area, the evidence pertaining to diagnosis may be useful. Similarly, other health-related terms can be identified and coupled with the same SEP search terms. These health-related terms may include concepts such as prognosis, compliance, adherence and relapse.

Within the case studies presented in this handbook, evidence was found that identified relationships between diseases and specific lifestyle behaviours. However, this evidence did not always identify a connection between the health behaviours and SEP. This was true for the diabetes case study with regard to sedentary lifestyle, and also the cardiovascular case study with regard to obesity. Researchers should search the literature in reference to SEP and the health behaviours that have been associated with a disease. For example, if smoking is a risk factor for a disease, the literature on SEP and smoking can be used as a foundation for evidence on the relationship between SEP and the disease of interest.

4.2 Broadening the search scope

It is difficult for RCTs to capture the effect of SEP. If evidence is limited, it becomes appropriate to consider all types and levels of evidence. This may include qualitative evidence, and evidence assessed as being Level III and IV. (See Section 2.1.) Simultaneously, the conclusions drawn from RCTs must be considered in terms of the effect of controlling for specific indicators of SEP. When searching for evidence on the role of SEP and health status, it is often appropriate to consider all types of evidence, while recognising that traditional evidence of 'best-practice' may have limited ability to capture the effects of SEP.

Other evidence may be found by broadening the scope of the search to include non-peer-reviewed articles, reports and books ('grey literature'). Grey literature includes sources of information that have not been indexed and are typically hard to locate, such as documents constructed by think tanks, research organisations and advocacy groups. A search of the grey literature can also be undertaken using search engines on the world wide web (the Web). Such a strategy, however, may return an extremely high number of 'hits' and for this reason, the use of very specific search terms is recommended. Specific sites for target groups are also useful. For example the *Infonet* website www.healthinfonet.ecu.edu.au/ and the OATSIH website (www.health.gov.au/oatsih/) provide a wealth of resources on Aboriginal and Torres Strait Islander health.

Further evidence and information on the impact of SEP and health may be located by contacting health equity listserv networks including the Health Equity Network (HEN), the Equidad Network and the Gensalud Network. This approach can provide access to relevant published and unpublished material as well as facilitating informed dialogue between international researchers and practitioners.

Using the Internet to search the web can result in the location of CPG web sites. Contacting other guideline developers and asking if/how they acknowledge, use or include SEP in developing their guidelines can prove helpful. This is also a means of establishing and maintaining contacts and locating the 'experts' in relevant areas.

Bibliographies are sometimes overlooked as an excellent source of further references. Relevant materials are referenced in the bibliographies of both published and unpublished papers and reports. A search of journals cited in bibliographies may also help to locate further relevant material.⁴

When broadening the search scope, beyond the peer review literature, the importance of assessing the quality of evidence sources remains paramount (see Section 2.4.)

4.3 Applying generic principles to promote health equity

In the absence of specific evidence describing relationships between SEP and health, recommendations should be based on generic principles that promote health equity. The Arblaster et al systematic review² identifies properties of health service interventions which can reduce health differentials, and these may be useful principles to apply in the absence of specific evidence. Examples cited by Arbaster et al² include systematic and intensive approaches to health services delivery, improvements in access, prompts to encourage the use of services and peer involvement.^{1,3} Approaches cited by Turrell et al⁴ include targeting interventions that take into account the structural, material, economic and environmental constraints experienced by population sub-groups.

4.4 Chapter summary

The evidence relating to SEP and health presentations is variable, and in some cases, limited. In order to identify relevant literature, search strategies must be broadened and repeated with similar disease search terms. The search scope may include non-intervention research and ‘grey’ literature as well as peer-reviewed papers on RCTs. The use of the web may facilitate international communication and access to more relevant references. However, the need to assess the quality, accountability and appropriateness of the evidence remains a high priority.

In situations where the literature is limited:

- the search terms can be broadened;
- the search strategy can be repeated with a like disease;
- the search strategy can be repeated along the health-disease continuum and the connections between health-related behaviours and their association with SEP can be identified;
- different types of evidence (Levels III and IV, non-intervention, observational and qualitative studies) can be reviewed;
- different sources of evidence (eg grey literature) can be reviewed; and
- generic principles to promote health equity can be applied.

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5 CASE STUDIES

5.1 The case studies

The following descriptive matrix relates the impact of the markers of SEP across the health-disease continuum. In addition to the usual (prevention, diagnosis, primary care, secondary care, tertiary care) description of the health-disease continuum, psychosocial factors and health behaviours have been included in line with the midstream (intermediate-level factors) described by Turrell et al.⁶¹

		Health-disease continuum						
		Psychosocial factors	Health behaviours (risks)	Prevention	Diagnosis	Primary care	Secondary care	Tertiary care (including maintenance, rehabilitation, palliation)
Socioeconomic position	Gender							
	Culture/Ethnicity							
	Education							
	Employment							
	Occupation							
	Income							
	Housing							
	Area of Residence							
	Lifestyle							

In this chapter four case studies are presented. Each of these is concerned with a stage of the health-disease continuum, although not all aspects are covered here. The case studies are:

- asthma—as it relates to risk identification and prevention
- type 2 diabetes—as it relates to diagnosis
- breast cancer—as it relates to primary care
- cardiovascular disease—as it relates to tertiary care

These four broad disease areas were chosen because they encompass the National Health Priority Areas (see Section 1.4 for reference to National Health Priority Areas). The corresponding stages of the health-disease continuum (prevention, diagnosis, primary care, tertiary care) were selected on the basis of specialist recommendations that these areas were of particular relevance to the diseases in question.

The case studies demonstrate how the framework, presented in Chapter 3, can be used to access literature for evidence of SEP. It is important to note that these case studies are illustrative examples only and have not been subjected to the rigorous evaluation necessary to produce evidence for CPGs. Searches conducted for these case studies used only one database (Current Contents), and limited full text documents were retrieved. All information was taken from the abstracts published on Current Contents. There was no systematic evaluation or 'quality control' of the evidence. When a search was performed, the abstracts returned were evaluated only by the researcher who conducted the search. Abstracts were not assessed in any way as to the type of study used to collect data, or the quality of evidence presented.

The search process was intended to be generic and therefore did not focus on any specific sub-population. If the search had focused on the Aboriginal and Torres Strait Islander population, for example, it is likely that additional evidence for this target population would have been located. The authors also acknowledge that in a 'real world' situation more than one database would be used to access literature for evidence of SEP.

5.1.1 Risk factors and preventive measures for asthma

It is important to note that this case study is indicative only and illustrates a process for retrieving evidence. Relevance of the studies to the Australian context has not been assessed. The case studies presented here are not to be interpreted in any way as part of amended guidelines or standards.

Step 1: Identify the health decisions required

Develop clinical practice guidelines on the risk factors for asthma and the means of preventing these.

Step 2: Search the literature for evidence that, due to SEP, population sub-groups may experience barriers to and/or have limited capacity or opportunities to achieve equal health gains

A search of the literature was conducted using the search terms 'asthma' and 'risk' or 'trigger' and the headings from the matrix shown at the beginning of this chapter. The following summary notes were made from the relevant literature which was accessed for this asthma case study example. The notes are brief

outlines and are presented here for illustrative purposes only. The use of ‘risk’ refers to causal factors. If the abstract did not specify whether the risk was causal or a trigger for pre-existing asthma, this has been noted.

Socioeconomic position and risk

In the US, asthma prevalence and morbidity is high among minority populations and there is an increased risk for children living in urban settings to develop asthma. Racial/ethnic differences in asthma prevalence are thought to be related to socioeconomic factors in that country including income, area of residence and level of education. There is a greater risk of hospitalisation for pre-existing asthma associated with female gender, and low household income.^{1, 8, 9, 14, 15, 40, 41, 44, 53, 57}

Gender and risk

While there is a higher rate of childhood asthma in boys, there is a higher incidence of asthma in female adolescents. There is a high incidence of asthma among females who smoke, and the prevalence of asthma increases with increasing body mass index in females.^{9, 18, 29, 60} One study proposed the possibility of an association between breastfeeding and a higher prevalence of asthma during preadolescence.⁵⁵ Another study proposed a possible relationship between maternal infections during pregnancy and asthma in children.⁶²

Culture/ethnicity and risk

In the US, black race/ethnicity was associated, independently from low income and low education, with an elevated risk for asthma mortality. Hispanic, Latino and African American ethnicity were also cited as independent risk factors for asthma.^{5, 20, 30, 36, 41, 50, 52}

Education and risk

There was evidence of a positive gradient for asthma with hay fever with increasing level of education but an inverse gradient for asthma without hay fever. People with higher levels of education have a higher risk of under-diagnosis and under-treatment than those with lower levels of education.^{2, 7}

Employment and risk

One study was returned with reference to asthma and employment. This concluded that while having asthma does not substantially impede employment, people who were not employed at disease onset experienced continued low employment rates.⁶³

Occupation and risk

It has been estimated that 5–15% of adult-onset asthma can be attributed to occupational exposures. There is a distinction between sensitisers capable of inducing asthma in previously healthy workers, and irritants which trigger attacks

in workers with pre-existing asthma. Risk of developing occupational asthma occurs in manual and service areas where workers are exposed to acrylate-based compounds, welding fumes, animal epithelia, hairs and secretions, flours, grains, fodders and other respiratory irritants. Industrial workers and those with severe asthma or lack of a college degree appear to be at greater risk of developing occupational asthma. Occupational asthma results in severe socioeconomic hardship for workers who face a burden of long-term illness and unemployment.^{3, 6, 19, 21, 25-27, 31, 32, 38, 42, 45, 46, 48, 56, 58, 59, 65}

Income and risk

US studies show asthma is disproportionately associated with low income and unhealthy environments.^{33, 34, 37}

Housing and risk

Household environments may place occupants with asthma at risk of ongoing exposure to triggers. Findings demonstrated that indoor household allergen levels were related to the degree of household disrepair. Maternal smoking and dampness or mould at home was associated with a significantly increased risk of childhood wheezing.

In the US, childhood asthma morbidity and prevalence rates are the highest in less affluent, urban, minority communities suggesting that environmental factors contribute to the excess asthma morbidity in poor children. Sub-standard housing and lack of resources may underlie these exposures.^{4, 13, 15, 16, 28, 34, 47, 51, 64}

Area of residence and risk

In many countries, inner city districts, comprising a disproportionate number of people who live close to or below the poverty line, is associated with increased rates of morbidity and mortality from asthma. Exposure to cigarette smoke is a risk factor that is declining among the general population but remains a serious problem for low-income urban dwellers.^{17, 22, 39, 41, 43}

Lifestyle and risk

There is an abundance of literature on the adverse effects of pre-natal exposure to tobacco including impaired respiratory function. Smoking of the mother during pregnancy or breastfeeding is associated with significantly increased risk of early childhood wheezing.^{10-13, 23, 24, 35, 49, 54}

Step 3: Search the literature to identify interventions that address barriers and/or opportunities to achieving equal health gains

A search of the literature was conducted using the search terms 'asthma' and 'prevention' and the headings from the matrix shown at the beginning of this chapter. Evidence was also collected from the literature identified in the previous

search. The following summary notes (presented for illustrative purposes only) were made from the relevant literature.

Socioeconomic position and prevention

Environmental conditions and lower quality primary care were given as possible explanations for the higher incidence among people from lower socioeconomic positions. Interventions directed at the environment offer the possibility of primary prevention. Primary care directed at asthma is generally focused on tertiary prevention, and improved medication use.^{1, 8, 9, 14, 15, 40, 41, 44, 53, 57}

Culture/ethnicity and prevention

Genetic considerations are likely to play a role in the increased risk of asthma in some racial/ethnic populations. However, a large proportion of the racial/ethnic differences in asthma prevalence in the literature can be explained by factors related to income, area of residence, and level of education. Possible preventative measures involve addressing these factors.^{5, 20, 30, 36, 41, 50, 52}

Occupation and prevention

Prevention of new cases is the best approach to reducing the burden of asthma attributable to occupational exposures. The prognosis for occupational asthma is improved if the causal exposure is controlled either by controlling the exposure at the workplace or by moving the worker out of the workplace. Management choices beyond conventional medication and the avoidance of irritant environmental triggers are greatly limited for the individual worker. A change of job environment with complete cessation of exposure to the relevant asthma-inducing agent is to be favoured and offers the best chance of full recovery. Affected workers may require psychosocial support during the period of investigation and management, especially in relation to required changes in their work and compensation claims.^{3, 6, 19, 21, 25-27, 31, 32, 38, 42, 45, 46, 48, 56, 58, 59, 65}

Housing and prevention

Social-structural aspects of housing may be appropriate targets for public health interventions designed to reduce allergen exposure.^{4, 13, 15, 16, 28, 34, 47, 51, 64}

Lifestyle and prevention

Maternal smoking is an avoidable cause of impaired airway development and function in infancy and a potentially preventable risk factor for childhood asthma through smoking cessation programs.^{10-13, 23, 24, 35, 49, 54}

No references

There were no references found relating to prevention and income, education and prevention, employment and prevention (excluding occupational asthma which is covered under a different heading) or residence.

Step 4: Synthesise evidence from Steps 2 and 3 and current clinical best-practice evidence to develop recommendations

Recommendations would be developed on the basis of the evidence collected.

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5.1.2 Diagnosis of type 2 diabetes

It is important to note that this case study is indicative only and illustrates a process for retrieving evidence. Relevance of the studies to the Australian context has not been assessed. The case studies presented here are not to be interpreted in any way as part of amended guidelines or standards.

Step 1: Identify the health decisions required

Develop CPGs for the diagnosis of type 2 diabetes and the impact of SEP markers on outcomes.

Step 2: Search the literature for evidence that, due to SEP, population sub-groups may experience barriers to and/or have limited capacity or opportunities to achieve equal health gains

A search of the literature was conducted using the search terms ‘diabetes mellitus’ and ‘diagnosis’ and the headings from the matrix shown at the beginning of this chapter. The following summary notes were made from the relevant literature which was accessed for this diabetes case study example. The notes are brief outlines and are presented here for illustrative purposes only.

Socioeconomic position and diagnosis

The prevalence of type 2 diabetes is much higher in lower socioeconomic classes in developed countries. This appears to be related to the increased incidence of behaviours that have been identified as risk factors for the development of type 2 diabetes, including obesity, sedentary lifestyle and increased fat consumption.^{5, 2-4, 7, 11, 21, 30, 33, 36}

It is estimated that a large percentage of those suffering from type 2 diabetes remain undiagnosed. Many patients with diabetes show multiple typical symptoms of the disease, but do not identify them as such and consequently do not access appropriate health services. While most diabetes is diagnosed within general practice, the diagnosis is dependent upon the patient presenting to the service. Less access to appropriate health services appears to influence the opportunity for diagnosis of diabetes for those in a lower SEP. Poverty, language and lack of education increases the risk of less than adequate diagnosis.^{2-4, 5, 7, 11, 21, 30, 33, 36}

Gender and diagnosis

Gender was not consistently associated with a particular pattern with regard to the diagnosis of type 2 diabetes. The development of type 2 diabetes in women may be more related to the presentation of risk behaviours, than it is for men. However there is an interaction between gender and race on the development of the disease. Females across different ethnicities develop type 2 diabetes at different rates compared with males of the same ethnic background, and females of different ethnic background.^{2, 23, 24, 31, 38}

Females tend to be higher consumers of diabetic health care services. This may influence the tendency for females to develop fewer diabetes-related complications. It may also mean that there is a greater opportunity for females to be diagnosed with type 2 diabetes if they have more contact with health care services.^{23, 24, 31, 38}

Ethnicity/culture and diagnosis

The evidence suggests that those with a non-European heritage are at greater risk of developing type 2 diabetes. It is unclear whether this increased prevalence is attributable to genetic factors, or is due to a higher incidence of behavioural risk

factors as outlined above. Within Australia, the prevalence of type 2 diabetes is amplified among Aboriginal and Torres Strait Islander peoples, and the age of onset of the disease is also much lower in these groups. While non-insulin dependent diabetes mellitus (NIDDM) appears to be less prevalent in Indigenous communities living in a traditional manner, when a more westernised diet is adopted the prevalence of NIDDM increases.^{2, 8, 17, 23, 28, 32}

The level of knowledge/understanding of diabetes may be influenced by ethnic background. In a New Zealand sample, patients with a European background knew more about the nature, symptoms and complications of diabetes when compared to their Pacific Islander counterparts. Those with type 2 diabetes knew less about their disease than those diagnosed with type 1 diabetes. Knowledge of the disease influences treatment-seeking behaviours and the opportunity for diagnosis.^{10, 35}

Education and diagnosis

There was little evidence that identified specific interactions between education level and the diagnosis of type 2 diabetes. However, education was often used as one of the indicators of SEP. One quarter of American women diagnosed with type 2 diabetes had a low level of education.⁵

Area of residence and diagnosis

Type 2 diabetes is reported as being more prevalent in urban communities than in rural areas. It is unclear if this is a consequence of the differing lifestyle of urban and rural communities, or is due to the possibility that as a result of access to fewer health services type 2 diabetes in rural communities is under-diagnosed.^{9, 27, 38}

Those from a lower SEP were more likely to contact a general practitioner than a specialised clinic. However, the diagnosis of diabetes is less likely to occur in general practice than in hospital clinics.^{14, 26}

It is argued that inequalities in access to appropriate primary care is due to organisational problems in general practice (eg competing priorities, more patients) rather than specific socioeconomic factors. This is in comparison to the socioeconomic variables that appear to determine compliance with follow up treatment.^{9, 14, 25, 26}

Lifestyle: SEP and association of behaviours that increase the risk of developing type 2 diabetes

Type 2 diabetes is recognised as being associated with some specific behaviours that increase the risk of developing type 2 diabetes. These behaviours include a sedentary lifestyle, obesity, and an increased consumption of fat. In developed nations, these lifestyle characteristics are associated with lower SEP. Consequently, because of the association between lower SEP and higher incidence of behaviours that increase the risk of developing type 2 diabetes, those of a low SEP can be identified as being at elevated risk of developing type 2 diabetes.^{7, 11, 22, 34, 36, 37, 39}

Income and diagnosis

The prevalence of type 2 diabetes is higher in those groups with a lower income level.⁵ There were no references on the impact of income on the likelihood of diagnosis of type 2 diabetes.

No references

There were no references on the relationship between the diagnosis of type 2 diabetes and employment, occupation or housing.

Step 3: Search the literature to identify interventions that address barriers and/or opportunities to achieving equal health gains

The following evidence was collected from the above literature using the terms 'diabetes mellitus' and 'diagnosis' however these papers referred to the outcome measures and barriers/opportunities for diagnosis. The following summary notes (presented for illustrative purposes only) were made from the relevant literature.

Socioeconomic position and outcome

Poor self-rated health was most frequent in those people with lower SEP. The literature suggests that lower SEP is associated with poorer glycaemic control and more diabetes-related complications. It was suggested that those from socially and economically deprived areas were less likely to adhere to medication and more likely to continue to engage in risk behaviours. However in contrast, one study¹² found that appropriate adherence to diet was significantly associated with being in a lower SEP. An inverse socioeconomic mortality gradient in the diabetic population has been identified.⁶ This means that the premature death rate for diabetics with low SEP is considerably higher than that for diabetics with high SEP. Those diabetics with low SEP are less likely to access primary health care services for follow up treatment, than those with high SEP.^{6, 7, 12, 24, 25}

Gender and outcome

Gender has been significantly related to the self-report of poor health. A female's social context (eg family life) may determine the degree to which she will be able to display glycaemic control, and her management of the disease may be impeded by social role. Females continue to be higher consumers of outpatient, inpatient and day care health services after diagnosis. Therefore, while females may experience more difficulties in managing their disease, this management appears more highly monitored.^{13, 24}

Ethnicity/culture and outcome

While race/ethnicity may be biologically related to more severe experiences of the disease, ethnicity does not appear to determine the degree to which health care services are accessed. It was suggested that SEP does not have an impact on glycaemic control in that lower SEP was not associated with more severe

hyperglycaemia. The studies show that specific ethnic groups display poorer glycaemic control, and suggest this may be due to lifestyle factors associated with SEP.^{1, 18-20} Within Australia, Aboriginal and Torres Strait Islander peoples consistently experience a higher rate of diabetes-related complications and access primary health care services less frequently.⁸

Education and outcome

There were no references on the interaction between health outcomes of type 2 diabetes and education levels. Diabetics do not appear to be disadvantaged in terms of their employment prospects, although they are more likely to be absent from work due to sickness. People with diabetes work similar hours to those without diabetes.^{16, 21}

Occupation and outcome

Having a non-manual occupation was associated with a higher likelihood of attending a diabetes review. Therefore, occupation may interact with the management of the disease post diagnosis.¹⁴

Income and outcome

Low income and lack of health insurance have been associated with not attending a medical review after diagnosis of type 2 diabetes.³

Housing and outcome

Home ownership was associated with an increased likelihood of attending a hospital clinic after diagnosis of type 2 diabetes.¹⁴

Area of residence and outcome

As noted earlier, people living in rural areas often have less access to appropriate health services. Affluent areas are more likely to have a formalised diabetes program which may influence more structured care.²⁶ Diabetics in rural areas report fewer physician office visits than their urban counterparts, but more home visits.²⁵ Other literature suggests that access to health care does not influence health outcomes in diabetes¹⁹, although one reference emphasised the positive role that mobile diabetes clinics can play in servicing areas of low population density.²⁹ There is a high rate of patients using insulin to control their diabetes, compared with other interventions in areas of less deprivation.²⁵

Lifestyle and outcome

Patients treated by a specialist exhibit a higher adherence to diet and medication, when compared to those under the care of a general practitioner.¹² Those of lower SEP are less likely to contact primary health care services than those of higher SEP.²⁵ One study identified individual socioeconomic markers (eg access to a car) as associated with the likelihood of attending a hospital clinic for review¹⁵, while another study found that use of outpatient care was highest among those

with a working class background.³ Access and contact with health services following diagnosis will have implications for the management of the disease and the likelihood of developing complications.

There is a comparatively less acceptance among lower SEP patients of preventative and health maintaining behaviours, and the diabetes inverse mortality gradient (ie high premature death rate for low SEP diabetics) is associated with the continued display of behavioural risk factors.^{6,24}

Employment and outcome

There were no references on the interaction between health outcomes of type 2 diabetes and employment.

Step 4: Synthesise evidence from Steps 2 and 3 and current clinical best-practice evidence to develop recommendations

Recommendations would be developed on the basis of the evidence collected.

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5.1.3 Health treatment choices in breast cancer

It is important to note that this case study is indicative only and illustrates a process for retrieving evidence. Relevance of the studies to the Australian context has not been assessed. The case studies presented here are not to be interpreted in any way as part of amended guidelines or standards.

Step 1: Identify the health decisions required

Develop CPGs for the treatment choices in breast cancer.

Step 2: Search the literature for evidence that, due to SEP, population sub-groups may experience barriers to and/or have limited capacity or opportunities to achieve equal health gains

A search of the literature was conducted using the search terms ‘breast cancer’ and ‘treatment’ or ‘therapy’ and the headings from the matrix shown at the beginning of this chapter. The following summary notes were made from the relevant literature which was accessed for this breast cancer case study example. These notes are presented here for illustrative purposes only.

Socioeconomic position and treatment

Generally, evidence suggests that lower social class/SEP is associated with lower rates of breast-conserving surgery. There is some evidence that factors other than SEP explain different treatment, for example, physician experience/preferences, and that women diagnosed through screening programs receive similar treatment regardless of SEP.^{46, 51, 76, 82}

Ethnicity/culture and treatment

Studies show varying results on the relationship between race and rates of breast-conserving surgery. Some studies show no significant relationship while others show lower rates of breast-conserving surgery in African American, Hispanic and Asian women. Those studies showing no significant relationship have statistically

'controlled' for SEP when SEP is an effect modifier. (See Section 2.3 for explanation). Studies of breast reconstruction post-mastectomy rates show higher rates of reconstruction for white women. Other treatment issues, with only a small number of studies, show:

- no significant relationship between race and receiving chemotherapy;
- transport a greater problem for minorities;
- Indigenous Australians receive less complete treatment; and
- African American women receive poorer quality of care.^{5, 24, 28, 42, 49, 61, 65, 68, 70-72, 83, 85, 97}

Education and treatment

Higher education is associated with higher rates of breast-conserving surgery and lower education is associated with lower rates of breast-conserving surgery at the individual's education level and also at an area level. Higher education is associated with higher rates of breast reconstruction.^{2, 7, 14, 22, 37, 68, 70, 85, 86}

Income and treatment

Lower income is associated with lower rates of breast-conserving surgery. Higher income is associated with higher rates of breast-conserving surgery and higher rates of reconstruction post-mastectomy.^{2, 5, 7, 14, 37, 43, 47, 53, 54, 64, 66, 68, 71, 84-86} Income is not related to the decision-making processes concerning surgical treatment.

Housing and treatment

Increased rates of vacant housing in area of residence are associated with lower rates of breast-conserving surgery.⁶⁸

Area of residence and treatment

Rates of breast-conserving surgery are lower in rural areas. Rates of mastectomy are higher in rural areas. Rates of reconstruction post-mastectomy are higher in urban areas. Having to travel affects choice of treatment with lower rates of radiotherapy and lower treatment rates related to lack of transport. Rural women require higher levels of support and there is a lack of assistance in rural areas.^{1, 2, 4, 5, 21, 23, 39, 41, 42, 47-49, 77, 80, 86, 92, 93, 99, 103}

Two Australian studies suggest there is no difference in rates of breast-conserving surgery between specific rural and urban areas (notably rural areas where there is interest and expertise in the treatment of breast cancer).^{72, 100} However, a cancer-registry-based Australian study reports lower rates of mastectomy in urban areas.⁵⁶

Lifestyle and treatment

Women with partners are more likely to choose breast-conserving surgery.^{10, 90}

No references

There were no references on the relationship between health care delivery and employment or occupation.

Step 3: Search the literature to identify interventions that address barriers and/or opportunities to achieving equal health gains

The above search also returned evidence concerning the health outcomes associated with the treatment choices. The following summary notes (presented for illustrative purposes only) were made from the relevant literature.

Socioeconomic position and outcome

Lower SEP is related to higher mortality and lower survival. In some studies this is explained by the stage of disease at time of diagnosis (people of lower SEP have more advanced disease at time diagnosis). However, in some studies when stage at diagnosis is controlled for, the relationship between SEP and outcomes remains significant.^{17, 18, 34, 36, 57, 67, 69, 75, 81, 87-89, 94, 96, 98}

Ethnicity/culture and outcome

African American women have poorer survival and higher mortality. However, there was some disagreement as to the extent to which this is explained by SEP, prognostic or treatment factors. Some studies explain survival and mortality in terms of later presentation and poorer clinical picture, while others explain this differential as due to SEP.

The differentials in race are explained by statistically ‘controlling’ for SEP. This results in the interpretations of the impact of race as being non-significant. The studies do not recognise that race can be a proxy for lower SEP, or that SEP is related to poorer survival and higher mortality.

There is a suggestion that breast cancer in black and Hispanic women may be a different disease (as it is poorly differentiated and can be more aggressive). However, other groups identified with poorer survival and/or higher mortality include Filipinos and Indigenous groups.^{3, 9, 11, 12, 13, 20, 25-27, 29, 30, 32-34, 38-40, 45, 50, 63, 67, 69, 74, 78, 79, 83, 84, 91, 95, 101, 104, 105}

Education and outcome

Higher education is associated with a higher rate of survival and lower mortality, and lower education is associated with a lower rate of survival and higher mortality. Lower education is associated with poorer quality of life post-treatment. One study⁶² suggests that the mechanism by which lower education leads to higher mortality is through lower compliance with treatment regimes. There is a suggestion that education is non-significant in the likelihood of returning to work post-treatment. It is also identified as being non-significant with regard to survival from advanced cancer (as opposed to early cancer).^{15, 35, 39, 52, 55, 62, 94, 102}

Occupation and outcome

Higher-status/non-manual occupation is associated with higher rate of survival and lower mortality. Occupation is non-significant in likelihood of return to work post-treatment.^{15, 44, 94}

Income and outcome

Lower income is associated with higher mortality, lower rates of survival and poorer quality of life post-treatment (six studies controlled for stage and treatment). Two studies reported no significant relationship between income and outcomes when controlled for stage, age and treatment.^{6, 19, 20, 30, 59, 60, 73, 102}

Area of residence and outcome

There is evidence that the region of residence and rural versus urban is related to survival and mortality; however, the direction varies depending on the country. When the stage of disease and treatment are controlled for these variations are non-significant.^{8, 16, 31, 50, 58, 96}

Lifestyle and outcome

Smoking and obesity are associated with recurrence and lower rates of survival. Being single is associated with lower rates of survival, and lower quality of life post-treatment. Marital status is not associated with return to work post-treatment.^{15, 33, 35, 44, 52, 55, 57, 58, 67, 74, 81}

No references

There were no references on the relationship between outcomes and employment or housing.

Step 4: Synthesise evidence from Steps 2 and 3 and current clinical best-practice evidence to develop recommendations

Recommendations would be developed on the basis of the evidence collected. An example of this is provided in Section 3.4.

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5.1.4 Risk factor modification in cardiovascular rehabilitation

It is important to note that this case study is indicative only and illustrates a process for retrieving evidence. Relevance of the studies to the Australian context has not been assessed. The case studies presented here are not to be interpreted in any way as part of amended guidelines or standards.

Step 1: Identify the health decisions required

Develop CPGs for risk factor modification options for rehabilitation for cardiovascular disease.

Step 2: Search the literature for evidence that, due to SEP, population sub-groups may experience barriers to and/or have limited capacity or opportunities to achieve equal health gains

This case study focuses on risk factor modification—obesity—as part of cardiac rehabilitation. It should be noted that a search of the literature on cardiac rehabilitation and markers of socioeconomic disadvantage focuses on the literature regarding those who do, or do not have access to cardiac rehabilitation services, and on groups who gain the most benefit from cardiac rehabilitation services. In order to obtain literature regarding the modification of specific risk factors it was necessary to search on the terms for that particular risk factor. Few papers were located that specifically related to obesity and cardiac rehabilitation, and it was necessary to include papers that looked at obesity in primary risk modification as well as in other diseases, or health more broadly. The terms used in this search were ‘obesity’, ‘overweight’ or ‘obese’ and ‘heart disease’, ‘cardiovascular disease’, ‘ischaemic heart disease’, ‘coronary heart disease’, ‘heart failure’, ‘myocardial ischaemia’ or ‘pulmonary heart disease’ and the headings from the matrix shown at the beginning of this chapter. The following summary notes were made from the relevant literature which was accessed for this cardiac rehabilitation case study example. The notes are brief outlines and are presented here for illustrative purposes only.

Gender and risk modification

In obesity and exercise modification programs, female participants are more likely to identify stress and frustration because of disappointing results.⁷

Ethnicity and risk modification

African American women experience barriers to exercising due to lack of childcare, neighbourhood constraints, and family.⁴

Education and risk modification

Poor health literacy and lower levels of education are barriers to positive change in cardiovascular risk factors.¹⁴

Occupation and risk modification

In some occupations there are barriers to adopting healthy lifestyles. For example, labourers and shift workers are often fatigued and likely to resort to high-fat convenience foods. Labourers may also have less motivation to engage in formal exercise routines and shift workers may find it difficult to accommodate exercise routines around their hours of work.¹¹

Income and risk modification

Low-cost obesity and exercise modification programs would attract more participants, as would the provision of childcare.¹²

Area of residence and risk modification

Unsafe neighbourhoods are a barrier to adopting and maintaining a physically active lifestyle. Lack of transport to attend risk modification programs affected attendance.^{4, 11, 12}

Age and risk modification

Older participants are most likely to attend risk modification sessions.⁷

No References

There were no references relating to delivery of obesity risk modification and employment, housing, lifestyle or socioeconomic not elsewhere classified.

Step 3: Search the literature to identify interventions that address barriers and/or opportunities to achieving equal health gains

A search of the literature was conducted using the search terms 'obesity', 'overweight' or 'obese' and 'heart disease', 'cardiovascular disease', 'ischaemic heart disease', 'coronary heart disease', 'heart failure', 'myocardial ischaemia' or 'pulmonary heart disease' and 'patient education', 'health education' and 'intervention', and the headings from the matrix shown at the beginning of this chapter. The following summary notes (presented for illustrative purposes only) were made from the relevant literature.

Gender and outcomes

Weight gain over time is highest in younger rural women, urban men, and rural women with low education. Physical inactivity is related to being male with low income. Among women, being married was associated with consistently low levels of physical activity.^{5, 9, 10}

Ethnicity and outcomes

Higher levels of recreational exercise were associated with whites. Minority individuals are less physically active than the general population, and are less likely to show positive changes in response to risk modification programs.^{3, 6, 14}

Education and outcomes

In Europeans, obesity is inversely associated education. Among women, weight gain is highest in rural women with low education. Higher levels of recreational exercise were associated with higher education. Increases in education were associated with increases in physical activity. Groups with the lowest health knowledge are least likely to show positive changes from risk factor modification programs.^{3, 5, 8, 10}

Occupation and outcomes

Occupational differences account for more than one fifth of the effect of obesity on the hourly wages of both white and black women.²

Income and outcomes

Lower probability of marriage and lower earnings of husbands among those who marry, account for the majority of the income differences between obese white women and those of recommended weight. Higher levels of recreational exercise were associated with higher family income. Data suggest that those on low incomes and individuals who are members of minorities are less physically active than the general population. Low income was an independent risk factor for physical inactivity in men only.^{2, 3, 6, 9, 11}

Area of residence and outcomes

Weight gain was highest in younger rural women, urban men and rural women with low education.⁵

Lifestyle and outcomes

Higher levels of recreational exercise were associated with being a never or past smoker. In Europeans, obesity was inversely associated with smoking, alcohol intake, and distance walked and positively associated with time spent watching television. Among women, being married was associated with consistently low levels of physical activity. Among both men and women, maintenance of single marital status was associated with increased physical activity levels.^{3, 8, 10}

Socioeconomic not elsewhere classified and outcomes

Support of family and friends, food costs, time constraints and shopping practicalities suggests that practical issues and situational barriers need to be addressed. In Europeans, obesity was inversely associated with social class. Low SEP was a strong determinant of being overweight and obesity among middle-aged Swedish women. The odds of being overweight or obese increased with lower social position.^{1, 8, 13}

No references

There were no references on outcomes of obesity risk modification and housing, employment or age.

Step 4: Synthesise evidence from Steps 2 and 3 and current clinical best-practice evidence to develop recommendations

Recommendations would be developed on the basis of the evidence collected. An example of this is provided in Section 3.4.

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5.2 Chapter summary

This chapter provides detailed examples of how the framework can be applied to assessing literature in order to find evidence of SEP. Four case studies are presented covering four disease processes and five different aspects of the health-disease continuum. A matrix relating the impact of SEP across the health-disease continuum is also provided.

APPENDIX A

Terms of reference and membership of Working Party

The terms of reference for the Working Party were:

- to develop a handbook providing an overview of existing evidence on SEP and health as a reference for developers of clinical guidelines, explaining why and how they need to take evidence of socioeconomic disadvantage into account in formulating advice;
- to develop and utilise a search strategy to assess information on the socioeconomic gradient of health;
- to develop the handbook in accordance with the standards and principles for the development of NHMRC publications; and
- to prepare an implementation plan for the handbook for the consideration of the NHMRC Health Advisory Committee.

Membership for the Working Party for this handbook was as follows:

Dr Terri Jackson, Chair
Health Economics Unit
Monash University

Dr Rosemary Aldrich
Newcastle Institute of Public Health
University of Newcastle
(Resigned April 2002)

Dr Jane Dixon
National Centre for Epidemiology and Population Health
Australian National University

Dr John Furler
Department of General Practice and Public Health
University of Melbourne

Dr Gavin Turrell
School of Public Health
Queensland University of Technology

Professor Andrew Wilson
School of Population Health
Faculty of Health Sciences
University of Queensland

Mr Nicholas Duell, Ms Linda Robertson and Mr John Leonard
National Health and Medical Research Council Secretariat

APPENDIX B

Process report

The Health Advisory Committee (HAC) is one of four principal committees of the NHMRC. Members of the 2000–2003 NHMRC Health Advisory Committee ranked the growing disparities in health and health care outcomes across the spectrum of SEP in Australia as one of their six priority areas for the 2000–2003 triennium.

A HAC Working Party on Socioeconomic Position in Health was established to guide the development of this handbook. The Working Party decided that the handbook would take the form of a guide to writers of clinical practice guidelines on socioeconomic position. At its September 2001 Meeting the Health Advisory Committee approved the project and appointed an Assessment Panel.

At an early stage in the writing process the Assessment Panel called for tenders for researchers to carry out a literature review and to write the publication according to the framework specified. The Commonwealth, on behalf of the NHMRC, contracted with the University of Newcastle, in partnership with the Newcastle Institute of Public Health (NIPH) and the Centre for Health Equity Training, Research and Evaluation (CHETRE), to undertake a literature review and draft this publication. The team, led by Dr Rosemary Aldrich, comprised Ms Jenny Stewart Williams, Ms Amanda Wilson, Ms Katie McGill, Dr Julia Lowe and Associate Professor Julie Byles from NIPH, and Dr Lynn Kemp, Ms Sarah Simpson and Ms Elizabeth Harris from CHETRE.

Dr Aldrich provided additional advice to the Working Party throughout this project.

Following the drafting phase a targeted consultation of experts in the field was conducted. Comments were received from:

Adjunct Professor Bill Bellew
Director, Centre for Health Promotion NSW Department of Health

Professor Dick Heller
Professor of Public Health
School of Epidemiology and Health Sciences
University of Manchester

Dr Françoise Cluzeau
Lecturer
Department of Public Health Sciences
St George's Hospital Medical School, London

Dr Mark Petticrew
Associate Director
Social and Public Health Sciences Unit
University of Glasgow

Dr Elizabeth Comino
Department of General Practice
Fairfield Hospital, NSW

Dr Nicole Rankin
Manager, Psychological Services
National Breast Cancer Centre

Dr Sophie Couzos
Public Health Officer
National Aboriginal Controlled Community Health Organisation

And these, together with comments from Members of the Working Party, were incorporated into the document.

Using Socioeconomic Evidence in Clinical Practice Guidelines was endorsed by the National Health and Medical Research Council out of session in November 2002.

APPENDIX C

Search strategy for evidence of the use of socioeconomic information in CPGs

Published evidence

An electronic search of the English language published peer-reviewed literature between 1990 and 2002 was conducted on the Medline, Sociofile, PsycInfo, Econlit, CINAHL, Current Contents, Proquest and AustHealth databases.

The aims of this literature review were to identify and describe instances of where CPG developers:

- have explicitly acknowledged evidence of the relationship between SEP and health; and
- have used that evidence to shape their CPGs.

The majority of published peer-reviewed references (approximately 80%) were located in the Medline databases. Table 4 shows a breakdown of the findings from Medline searches (1998–2001 and 1990–1998). The key words used in the searches are listed following Table 4.

Table 4: Medline search summary by key words

Key Words	Medline 1998–2001		Medline 1990–1998	
	Result	Full Text	Result	Full Text
1and2	21	5	15	0
1and4	2	1	2	0
1and6	7	0	4	0
1and9	39	6	37	2
1and12	4	1	1	1
1and15	2	0	0	0
1and18	16	0	11	0
1and21	11	0	23	0
1and24	27	0	27	0
1and27	25	0	26	0
1and30	2	0	2	0
1and32	1	0	0	0
1and34	166	3	124	1
1and37	83	7	57	0

continued next page

Table 4 continued

Key Words	Medline 1998–2001		Medline 1990–1998	
	Result	Full Text	Result	Full Text
1and39	47	0	40	0
1and2and41	6	0	2	0
1and43	44	3	37	0
1and45	29	5	38	2
1and47	83	0	81	0
1and49	21	0	34	0
1and51	17	0	15	0
1and53	5	0	3	0
1and55	16	0	8	0
1and57	41	1	28	0
1and59	35	1	32	0
1and61	15	1	12	0
1and76	16	1	16	0
1and79	6	0	1	0
1and82	0	0	2	0
1and84	21	6	17	2
Totals	808	41	695	8

Key words:

1= practice guidelines or clinical guidelines; 2=aging or depression or health status or income or mental health or social class or socioeconomic factors; 4= social class or socioeconomic status; 6= health status or lifestyle or occupations or risk factors or social class or stress or psychological or social gradient of health; 9= health policy or health promotion or health status or public health or risk factors or socioeconomic factors or social determinants of health; 12= ethnic groups or health status or health status indicators or social class or socioeconomic factors or social position in health; 15=health status indicators; 18= health status; 21= mental disorders or single parent or social class or socioeconomic factors or social disadvantage; 24= health policy or health status or health status indicators or poverty or social class or socioeconomic factors or health inequalities; 27= health policy or social justice or socioeconomic factors or health equity; 30= social class; 32= socioeconomic factors or inequality; 34=education; 37=mortality; 39=morbidity, 41=disease; 43=disorder; 45=mental disorders or psychosocial deprivation or social support or stress or psychological; 47=pregnancy; 49=dental; 51=abuse; 53=accidents; 55=alcohol; 57=smoking; 59=exercise; 61=suicide; 76=sex or gender; 79= employment; 82=housing or housing for the elderly or public housing; 84= hospitals, rural or rural health or rural health services or rural population. While some of the above key words, for example, 'pregnancy' do not alone imply social disadvantage, they do so when used in combination with other terms.

Table 5 presents a summary of the results of all electronic databases used in this literature search (1990 to 2001).

Table 5: Summary of electronic database searches

Database	Result	Full Texts
Medline 1998 to 2001	808	41
Medline 1990 to 1998	695	8
Sociofile 1990 to 2001	14	0
PsycInfo 1990 to 2001	130	1
Econlit 1990 to 2001	12	0
CINAHL 1990 to 2001	162	5
Current Contents 1990 to 2001	51	2
Proquest 1990 to 2001	33	1
AUSTHEALTH 1990 to 2001	0	0
Total electronic databases	1,905	58

As shown in Table 5, the published literature search identified 1,905 peer-reviewed papers. Approximately 6–10% of these papers were repeats. The abstracts were reviewed for relevant content and 58 papers were identified for full text review. The full text papers were accessed and subjected to assessment for inclusion in the literature review presented in this handbook. A random selection of papers was circulated to more than one member of the project team for assessment and this confirmed inter-rater congruence.

The assessment steps taken in the review of full text papers for inclusion in the literature review are outlined as follows.

A: Is the paper relevant to any of the following:

1= Breast Cancer

2= Asthma

3= Cardiovascular disease

4= Diabetes

5= Other Disease/Illness

6= Not applicable

More than one response possible.

B: What is the focus of the paper in relation to the health-disease continuum:

1= Prevention

2= Diagnosis

3= Treatment/Management

4= Rehabilitation

5= All

6= Not applicable

More than one response possible.

C: Is there explicit mention of SEP and health and CPGs: Y=Yes; N= No.*

D: If C= No, is there implicit mention of SEP and health and CPGs: Y= Yes; N= No*

E: If C= Yes, does the paper acknowledge the relevance of SEP and health and CPGs for:

1= health outcomes

2= health care delivery

3= both

4= neither

F: If C= Yes, is the focus of the paper on:

1= guideline development

2= guideline implementation

3= clinician education

4= consumer education

5= none of these.

More than one response possible.

Key to assessment steps

* Explicit mention: must be stated in the aims and/or abstract.

* Implicit mention: not stated in the aims and/or abstract, but mentioned elsewhere.

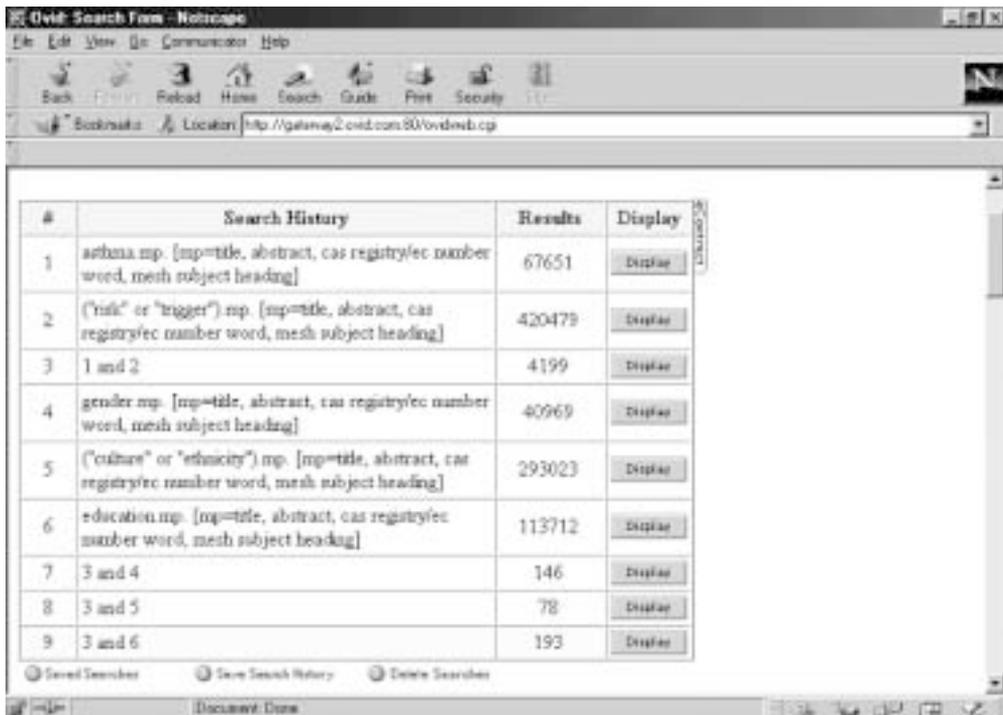
Unpublished evidence

National and international colleagues were contacted (using personal networks as well as established international health and equity electronic listserver networks) in order to further ascertain the extent to which SEP and health data have been used in the development of clinical guidelines. The listserver networks accessed were the Health Equity Network (HEN) the Equidad Network and the Gensalud Network. The key question posted to each of these networks was 'we are seeking to identify, appraise and report upon the extent to which CPG developers have acknowledged, used and/or included socioeconomic position and/or the socioeconomic determinants of health in developing their guidelines'. There were over forty responses to the listserver postings. The majority of these were received from the South American countries (almost 40%). Multiple responses were received from a number of countries including the US, Canada, England and Scotland.

APPENDIX D

Model computer search for evidence of SEP for given condition and therapy

The following screen shows an example of how a search strategy can be conducted. This search was conducted on Medline (1966–Week 2, 2002). The information identified mirrored that of the search strategy used for the asthma case study. The disease of interest was ‘asthma’ (search 1). The area of interest on the health-disease continuum was that of primary prevention. The key words of ‘risk’ or ‘trigger’ were used (search 2). These two searches were then combined (search 3). The screen shows search results for the SEP markers of gender, culture or ethnicity and education (search 4, 5, 6). These markers were then combined with the asthma-risk/trigger search (search 7, 8, 9) and the number of references returned was identified. Depending upon the database accessed, it is sometimes possible to map the key words to subject heading to broaden or focus the search. Medline has this facility.



GLOSSARY

Absolute risk reduction

The effect of a treatment can be expressed as the difference between relevant outcomes in the treatment and control groups by subtracting one rate (given by the proportion that experienced the event of interest) from the other. The reciprocal is the number needed to treat (NNT).

Allocation

Or assignment to groups in a study. The way subjects are assigned to the different groups in a study (eg drug treatment/placebo; usual treatment/no treatment). This may be by a random method (see randomised controlled trial) or a non-random method.

Bias

Bias is systematic deviation of a measurement for the 'true' value leading to either an over- or under-estimation of the treatment effect. Bias can originate from many different sources such as allocation of patients, measurement, interpretation, publication and review of data.

Case-control study

Patients with a certain outcome or disease and an appropriate group of controls without the outcome or disease are selected (usually with careful consideration of appropriate choice of controls, matching etc) and then information is obtained on whether the subjects have been exposed to the factor under investigation.

Clinical outcomes

An outcome for a study that is defined on the basis on the clinical outcome being studied (eg fracture in osteoporosis, peptic ulcer healing and relapse rates).

Clinical practice guidelines

Systematically developed statements to assist clinicians, consumers and policy makers to make appropriate health care decisions. Such guidelines present statements of 'best-practice' based on a thorough evaluation of the evidence, contained in published research, on the outcomes of treatment or other health care procedures.

Cohort study

Data are obtained from groups who have been exposed, or not exposed, to the new technology or factor of interest (eg from databases). Careful consideration is usually given to patient selection, choice of outcomes, appropriate controls, matching. However, data on outcomes may be limited.

Comparative study

A study including a comparison or control group.

Concurrent controls

Controls receive the alternative intervention and undergo assessment concurrently with the group receiving the new technology/intervention. Allocation to the intervention or control is not random.

Confounding

The measurement of a treatment effect is distorted because of difference in variables between the treatment and control groups that are also related to the outcome. For example, if the treatment (or new intervention) is trialed in younger patients then it may appear to be more effective than the comparator, not because it is better but because the younger patients had better outcomes.

Consequences

The health outcomes associated with a health option.

Cross-sectional

A study that examines the relationship between disease (or other health-related characteristics) and other variables of interest as they exist in a defined population at one particular time (ie exposure and outcomes are both measured at the same time).

Economic evaluation

The comparative analysis of alternative courses of action in terms of both their costs and their consequences. This can be done in a formal framework and is designed to help with decision-making.¹

Effect modifier

The relationship between a single variable (or covariate) and the treatment effect. Significant interaction between the treatment and such a variable indicates that the treatment effect varies across levels of this variable.

Efficacy/ effectiveness

The extent to which an intervention produces favourable outcomes under ideally controlled conditions such as in a randomised controlled trial.

Equity

Fairness in the allocation of resources between individuals or groups.²

¹ Health Technology Assessment of the Net Glossary (<http://hta.uvic.ac>)

² World Bank Glossary (www.worldbank.org/healthreform/class/module1/glossary.htm)

Evidence

Data about the effectiveness of a new treatment or intervention derived from studies comparing it with an appropriate alternative. Preferably the evidence is derived from good quality randomised controlled trials but it may not be.

Evidence-based medicine/health care

The process of finding relevant information in the medical literature to address a specific clinical problem. Patient care based in evidence derived from what is considered to be the best available ('gold standard') studies.

External validity

The degree to which the results of a study can be applied to situations other than those under consideration by the study, for example, in routine clinical practice.

Extrapolation

Refers to the application of results to a wider population and means to infer, predict, extend or project the results beyond that which was recorded, observed or experienced.

Health care

A process that is applied to a patient or group of interest, encompassing both interventions and diagnostic procedures.

Health differentials

The difference in health between persons of different socioeconomic groups (often expressed as a quantitative measure such as differences in risk, morbidity or mortality).

Health-disease continuum

All health states ranging from full health, through to pre- and early disease, acute and chronic disease and terminal disease.

Health gain

The addition to health status that someone has or can have from health care.³

Health inequalities

The observed differences in health between individuals or groups that may include natural, unavoidable variations between individuals due to biological factors as well as avoidable and unjust variations due to SEP. The term 'health inequity' is used specifically to describe inequalities that are considered unnecessary, avoidable, unfair and unjust.

³ Earl-Slater (1999) *Dictionary of Health Economics*. Radcliffe Medical Press: Abingdon, Oxon.

Incidence

The number of new events (new cases of a disease) in a defined population, within a specified period of time.

Interaction

The relationship between a single variable (or covariate) and the treatment effect.

Interrupted time series

Treatment effect is assessed by comparing the pattern of (multiple) pre-test scores and (multiple) post-test scores (after the introduction of the intervention) in a group of patients. This design can be strengthened by the addition of a control group, which is observed at the same points in time, but the intervention is not introduced to that group. This type of study can also use multiple time series with staggered introduction the intervention.

Intervention

An intervention will generally be a therapeutic procedure such as treatment with a pharmaceutical agent, surgery, a dietary supplement, a dietary change or psychotherapy. Some other interventions are less obvious such as early detection (screening), patient educational materials or legislation. The key characteristic is that a person or their environment is manipulated in order to benefit that person.

Level of evidence for clinical intervention

A hierarchy of study evidence that indicates the degree to which bias has been eliminated in the study design.

Number needed to treat (NNT)

When the treatment reduces the risk of specified adverse outcomes of a condition, NNT is the number of patients with a particular condition who must receive a treatment for a prescribed period in order to prevent the occurrence of the adverse outcomes. This number is the inverse of the absolute risk reduction.

Observational studies

Also known as epidemiological studies. These are usually undertaken by investigators who are not involved in the clinical care of the patients being studied and who are not using the technology under investigation in this group of patients.

Options

Different courses of health service action associated with the prevention, treatment and rehabilitation of an illness or injury.

Outcome

The result of health care on the subject. All identified changes in health arising as a consequence of the handling of a health problem. Outcomes can be divided into different categories such as patient relevant, clinical and surrogate.

Precision

A measure of how close the estimate is to the true value. It is defined as the inverse of the variance of a measurement or estimate. It is related to the *P*-value (the smaller the *P*-value, the greater the precision). Also called statistical precision.

Pre-test/post-test study

Outcomes (pain, symptoms etc) are measured in patients before receiving the new technology and the same outcomes are measured after 'improvement' in the outcome is reported. Often referred to as before-and-after studies.

Prevalence

Prevalence is a measure of the proportion of people in a population who have some attribute or disease at a given point in time or during some time period.

***P*-value**

The probability (obtained from a statistical test) that the null hypothesis (that there is no treatment effect) is incorrectly rejected. NOTE: the *P*-value is often misunderstood. It does not, as commonly believed, represent the probability that the null hypothesis is true (a small *P*-value therefore being desirable). The *P*-value obtained from a statistical test corresponds to the probability of claiming that there is a treatment effect when in fact there is no real effect.

Quality of evidence

Degree to which bias has been prevented through the design and conduct of research from which evidence is derived.

Quality of life

The degree to which persons perceive themselves able to function physically, emotionally and socially. In a more 'quantitative' sense, an estimate of remaining free of impairment, disability or handicap as captured by the concept of quality-adjusted life-years (QALYs).

Randomisation

A process of allocating participants to treatment or control groups within a controlled trial by using a random mechanism such as a coin toss, random number table or computer generated random numbers. Study subjects have an equal chance of being allocated to an intervention or control group and so the two groups are comparable.

Randomised controlled trial

An experimental comparison study in which participants are allocated to treatment/intervention or control/placebo groups using a random mechanism such as a coin toss, random number table or computer generated random numbers. Participants have an equal chance of being allocated to an intervention or control group and so allocation bias is eliminated.

Relevance

The usefulness of the evidence in clinical practice, particularly the appropriateness of the outcome measures used.

Resources

Input that can be used in the production of goods and services. For example, buildings, surgical equipment, anaesthetic gas and the time of doctors, nurses, physiotherapists and ancillary staff are resources that can be used to produce health care in the form of operations.

Robust

Results remain stable (ie if cost-effective they remain cost-effective, if not cost-effective they remain not cost-effective) within plausible tested bounds of variation.

Size of effect

Refers to the size (or distance from the null value indicating no treatment effect) of the summary measure (or point estimate) of the treatment effect and the inclusion of only clinically important effect in the 95% confidence interval.

Socioeconomic determinants of health

Socioeconomic determinants of health refer to those social and economic factors which affect a person's circumstance and which may have an impact on their health.

Socioeconomic lens

Consideration of the relationship and impact of socioeconomic position (SEP).

Socioeconomic position (SEP)

The term socioeconomic position refers to the components of economic and social well-being in a societal context. It is a concept that includes both resource-based measures such as income and educational qualifications, and prestige-based measures such as an individual's rank or status in a social hierarchy. Socioeconomic position is used in this publication because it recognises the way in which a person is positioned or valued within society as well as the resources they have available.

Socioeconomic position and health

Socioeconomic position and health describes the impact of SEP upon health outcomes and health services delivery.

Socioeconomic status (SES)

Describes a person's circumstance or context in society, which may be expressed and/or measured using such criteria as income, educational level attained, occupation, value of dwelling places, etc.⁴ SES is often used as a technical construct to measure a person's versus societal circumstance. This handbook uses the terms socioeconomic determinants of health, SES and SEP with reference to the same concept, with subtle differences.

Statistical precision

See precision.

Systematic review

The process of systematically locating, appraising and synthesising evidence from scientific studies in order to obtain a reliable overview.

Time series

A set of measurements taken over time. An interrupted time series is generated when a set of measurements is taken before the introduction of an intervention (or some other change in the system) followed by another set of measurements taken over time after the change.

Validity

Of measurement: an expression of the degree to which a measurement measures what it purports to measure, it includes construct and content validity. Of study: the degree to which the inferences drawn from the study are warranted when account is taken of the study methods, the representativeness of the study sample and the nature of the population from which it is drawn (internal and external validity, applicability).

Variance

A measure of the variation shown by a set of observations defined by the sum or the squares of deviation from the mean, divided by the number of degrees of freedom in the set of observations.

⁴ Last JM (1995). *A Dictionary of Epidemiology*. New York: Oxford University Press Inc.

ACRONYMS AND ABBREVIATIONS

AIHW	Australian Institute of Health and Welfare
BCS	Breast-conserving surgery
CHETRE	Centre for Health Equity Training Research and Evaluation
CPGs	Clinical practice guidelines
EISBERG	Evaluation and Interventions for Systolic Blood Pressure Elevation—Regional and Global project
HAC	Health Advisory Committee (Principal Committee of the National Health and Medical Research Council)
HCH	Health Care for the Homeless (US)
HEN	Health Equity Network
IDDM	Insulin dependent diabetes mellitus
NHCH	National Health Care for the Homeless Council (US)
NHMRC	National Health and Medical Research Council
NIDDM	Non-insulin dependent diabetes mellitus
NIPH	Newcastle Institute of Public Health
NNT	Number needed to treat
NZ	New Zealand
OATSIH	Office of Aboriginal and Torres Strait Islander Health (Department of Health and Ageing)
QALYs	Quality-adjusted life-years
RCT	Randomised controlled trial
SEP	Socioeconomic position
SES	Socioeconomic status
UK	United Kingdom
US	United States
WHO	The World Health Organization

The National Health and Medical Research Council

The National Health and Medical Research Council (NHMRC) is a statutory body within the portfolio of the Commonwealth Minister for Health and Ageing, established by the *National Health and Medical Research Council Act 1992*. The NHMRC advises the Australian community and Commonwealth; State and Territory Governments on standards of individual and public health, and supports research to improve those standards.

The NHMRC advises the Commonwealth Government on the funding of medical and public health research and training in Australia and supports many of the medical advances made by Australians.

The NHMRC also develops guidelines and standards for the ethical conduct of health and medical research.

The Council comprises nominees of Commonwealth, State and Territory health authorities, professional and scientific colleges and associations, unions, universities, business, consumer groups, welfare organisations, conservation groups and the Aboriginal and Torres Strait Islander Commission.

The Council meets up to four times a year to consider and make decisions on reports prepared by committees and working parties following wide consultation on the issue under consideration.

A regular publishing program ensures that Council's recommendations are widely available to governments, the community, scientific, industrial and educational groups.

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