The definition and prevalence of physical disability in Australia

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Abbreviations

ABS	Australian Bureau of Statistics
ADA	Americans with Disabilities Act
ADL	activities of daily living; also Activities of Daily Living (scale)
AGPS	Australian Government Publishing Service
AIHW	Australian Institute of Health and Welfare
AMA	American Medical Association
CSDA	Commonwealth/State Disability Agreement
DISTAT	(United Nations) Disability Statistics Data Base
FAM	Functional Assessment Measure
FIM	Functional Independence Measure
IADL	Instrumental Activities of Daily Living (scale)
ICD	International Statistical Classification of Diseases and Related Health Problems
ICIDH	International Classification of Impairments, Disabilities and Handicaps
MDS	Minimum Data Set
SPR	standardised prevalence ratio
WHO	World Health Organization

Summary

'Physical disability' is commonly recognised as a disability group in the disability field, and in legislative and administrative contexts in Australia. People with physical disabilities represent a significant client group of disability services. However, the scope of this group is often not clearly defined. Consequently, existing estimates of physical disability prevalence vary. Consistent and useable estimates of disability prevalence are needed to facilitate service planning and to inform the community.

The main objectives of this report are:

- to conduct a critical review of existing definitions, data collections and estimates of prevalence relating to disability generally and physical disability in particular;
- to discuss some central issues in defining and measuring disability;
- to estimate the prevalence and demographic pattern of physical disability in Australia; and
- to promote discussion and the development of improved national data on the main disability groups.

Definitions and approaches to estimating disability prevalence

Definition and classification of disability

Defining disability entails providing a statement and/or a set of criteria that essentially describe what is meant by 'disability'. A classification system provides a structure within which information about different aspects of the disability experience can be organised. A classification approach can be used to delineate different disability groups (physical, intellectual, etc.) within disability generally.

The International Classification of Impairments, Disabilities and Handicaps (ICIDH) was published in 1980. It has been widely accepted as a model for conceptualising disability and has been used in a range of applications. The ICIDH is currently being revised to incorporate new developments and criticisms of the original ICIDH from a range of people active in the disability field.

The draft ICIDH–2 provides a basis for classifying the '**consequences** of health conditions', defined as 'any disturbance in terms of functional changes associated with health conditions at body, person and society level' (WHO 1997). This underlying concept distinguishes disability from diseases, disorders, injuries and health-related problems (commonly classified using the International Statistical Classification of Diseases and Related Health Problems (ICD)). It also distinguishes disability from social disadvantage unrelated to health conditions.

The conceptual framework of the draft ICIDH–2 consists of three dimensions plus contextual factors. Each dimension focuses on a particular aspect of the disability experience. 'Impairment' focuses on any loss or abnormality of body structure or function. 'Activity' (replacing the term 'disability' in the 1980 ICIDH) relates to the nature and extent

of functioning at the level of the person. 'Participation' (replacing the term 'handicap' in the 1980 ICIDH) reflects the nature and extent of a person's involvement in life situations at society level, and reflects the interplay between impairments, activities, health conditions and contextual factors (e.g. physical and social environmental factors) (WHO 1997). 'Activity limitation' and 'participation restriction' are the terms used to describe negative experience in the activity and participation dimensions, respectively. Within each dimension a classification structure is provided, which can be used to organise information on aspects of the disability experience.

The three dimensions are distinct but interrelated. On the one hand, negative experience related to any one dimension can be considered to constitute disability. On the other hand, disability can be viewed as a 'multidimensional' phenomenon (WHO 1997). Although the ICIDH does not describe the 'process' of disability (i.e. the causal links between health condition, impairment, activity limitation and participation restriction), it provides a means of exploring the connections between the different dimensions of disability.

Depending on the purpose of the data collection, operational definitions of disability may focus on different dimensions of the ICIDH. Different operational definitions can produce different data, and therefore result in different estimates of disability prevalence. The draft ICIDH–2 provides a useful framework for comparing, identifying gaps and moving towards consistency in Australia's statistical and administrative definitions and data collections (Madden & Hogan 1997).

Definition of terms used in this paper

Disability terminology is in a transitional phase, partly because the terms used in the draft ICIDH–2 are beginning to replace those used in the 1980 ICIDH. Summary Table 1 sets out definitions for terms that are used frequently throughout this paper. Definitions of the dimensions of the 1980 ICIDH and draft ICIDH–2 are also given. We will be using the terminology of the draft ICIDH–2 in this publication.

The word 'disability' can be particularly confusing, as it has tended to be used in two quite different ways. The 1980 ICIDH used 'disability' to denote the second dimension of the classification—'any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being'. This usage of the word is still encountered in the literature. However, 'disability' has long been used in a looser sense as an umbrella term, and that is how it will be used in this paper.

Table S1: Working definitions of terms relating to disability, as used in this paper

Term	Working definition
Disability	An umbrella term meaning negative experience in any one or more of the draft ICIDH–2 dimensions (i.e. an impairment, activity limitation or participation restriction).
Health condition	A disease, disorder or injury, regardless of its exterior manifestation.
Disabling condition	A disease, disorder or event that leads to impairment, activity limitation or participation restriction. In the context of the 1993 ABS Survey of Disability, Ageing and Carers, a disabling condition is a disease, disorder or event that had lasted or was likely to last for six months or more, or had produced a long-term effect, resulting in one or more of the limitations, restrictions or impairments used to identify disability (ABS 1996).
Functional (ability or limitation)	Relating to functioning at the body, the person or the society level (depending on the context in which it is used). In the context of functional assessment measures, 'functional limitation' generally means a limitation of functioning at the person level (i.e. equivalent to activity limitation). It is also commonly used at the body level to mean impairment of body parts and organ systems.
Draft ICIDH–2 dimensions	
Impairment	(In the context of health condition) A loss or abnormality of body structure or of a physiological or psychological function.
Activity	(In the context of health condition) The nature and extent of functioning at the level of the person. Activities may be limited in nature, duration and quality.
Participation	(In the context of health condition) The extent of a person's involvement in life situations in relationship to impairments, activities, health conditions and contextual factors. Participation may be restricted in nature, duration and quality.
Context	Includes the features, aspects, attributes of, or objects, structures, human-made organisations, service provision, and agencies in, the physical, social and attitudinal environment in which people live and conduct their lives.
1980 ICIDH dimensions	
Impairment	(In the context of health experience) Any loss or abnormality of psychological, physiological or anatomical structure or function.
Disability	(In the context of health experience) Any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being.
Handicap	(In the context of health experience) A disadvantage for a given individual, resulting from an impairment or a disability, that limits or prevents the fulfilment of a role that is normal (depending on age, sex, and social and cultural factors) for that individual.

Source: Adapted from literature cited in Chapters 1 and 2.

Operational definitions and estimation

Disability can be identified and assessed at the level of the body (impairment), person (activity) or society (participation). The level or levels at which information is collected should reflect the purpose of collection and the operational definition of disability being used. However, within any one dimension different information can be gathered. For instance, impairment is often identified using a non-comprehensive list of selected impairments. The identification of activity limitation may focus on certain types of activities (e.g. basic activities of daily living (ADL)), and the identification of participation restriction may be restricted to certain realms of participation (e.g. paid employment). The type of information collected should reflect the purpose for which it is being collected.

Approaches to assessment and prevalence estimation can also vary in terms of the minimum severity and duration criteria used to identify disability. Variations across data collections can occur due to differences in the wording of questions, and how the data are collected (e.g. interviewer-administered versus self-administered questionnaires).

In disability surveys or administrative data collections, screening devices play a crucial role in identifying disability. A screening device is generally a set of questions or measurement instruments designed on the basis of the operational definition being used. The screening questions are used to identify the existence of 'disability', and the dimension on which they are focused—usually impairment or activity limitation—can substantially affect estimates of disability prevalence. Therefore, in moving towards consistency in disability data, the design of consistent screening questions is a crucial element (Madden & Hogan 1997).

The ICIDH does not provide assessment or measurement tools. However, there exist several measurement tools that are widely used and can be related to the ICIDH framework. For instance, the American Medical Association's Guides to the Evaluation of Permanent Impairment (the Guides) provide a widely used method for assessing the presence and severity of impairment. The Activities of Daily Living (ADL) scale and Instrumental Activities of Daily Living (IADL) scale, are measures of functional ability that have been widely used in clinical settings and population surveys to define disability and to assess need for services. They correspond to the activity dimension of the draft ICIDH–2 framework.

In summary, the diversity of efforts to describe disability experience reflects variation in the definition of disability and approaches to assessment and prevalence estimation. As we work towards consistency, we should aim to develop relatable operational definitions to enable the collection of comparable disability data, and a consistent module of screening devices to be used in identifying disability.

Delineating 'physical disability'

In Australia, disabilities are often divided into 'disability groups'. A 'disability group' is generally a broad categorisation of disabilities on the basis of underlying impairment, disabling condition or cause. The concept also implies similar activity limitations and common needs related to the underlying cause.

To estimate the prevalence of physical disability it is necessary to develop a basis for identifying physical disability. While disability is a multidimensional phenomenon, the delineation of individual groups within disability generally may be based on more limited information, corresponding to one or two ICIDH–2 dimensions only.

If we attempt to delineate 'physical disability' primarily on the basis of activity limitation some problems are encountered. Simple activities (e.g. gripping an object) can be readily identified as physical or otherwise. However, complex activities (e.g. driving) are more difficult to label because we use many different parts of ourselves, many different abilities, in combination.

Indeed, it seems that we identify an activity as physical, intellectual or sensory based on what parts of ourselves we use to do the activity. Therefore, to identify 'physical disability' it may be more appropriate to take an approach based largely on factors operating at the body level (i.e. corresponding to the impairment dimension of the ICIDH–2). A physical disability may then be identified as a disability associated with a physical impairment. Physical activity limitations may also be used to identify physical disability, but should be

defined as limitations in performing simple activities that are clearly associated with physical (rather than intellectual, sensory, etc.) abilities.

If such an approach is taken some means of identifying a 'physical impairment' must first be developed. The difficulty of defining physical impairment has tended to be solved by compiling lists of physical impairments (e.g. United Nations Disability Statistics Data Base (DISTAT) and expert report recommendation; Table 1.2).

In this paper we develop a primarily impairment-based operational definition of physical disability (described in Section 4.1). However, while information corresponding to the impairment dimension of the ICIDH–2 is used to delineate the physical disability group, information corresponding to the impairment, activity and participation dimensions is used to define disability. The list of physical impairments (and disabling conditions) that we use to identify physical disability as a basis for prevalence estimation is in line with significant international and Australian classifications (for the full list of codes used to identify physical impairments and disabling conditions see Appendix A).

Existing estimates of prevalence of physical disability

Prevalence of disability generally

Comparisons using the United Nations Disability Statistics Data Base (DISTAT) data show that estimates of disability prevalence range from 0.2% to 20.9% among the 55 countries studied. This large variation is mainly due to differences in operational definitions and approaches to measurement and estimation. Surveys using impairment-focused screening questions produced the lowest prevalence rates, ranging from about 0.3% to 5.0% of the general population. In contrast, surveys using activity-focused screening questions yielded the highest prevalence rates, ranging from about 7.1% to 20.9% (Chamie 1989, 1995; WHO 1990).

Using data from the 1993 Survey of Disability, Ageing and Carers, the Australian Bureau of Statistics (ABS) estimated that 18% of Australians had a 'disability' (ABS 1993b:1). Disability was defined by the ABS as the presence of one or more of a list of limitations, restrictions or impairments that had lasted, or were likely to last, for a period of 6 months or more.

Existing estimates of physical disability prevalence in Australia

Few overseas estimates of the prevalence of physical disability have been published. Estimates of the prevalence of physical disability in Australia vary, reflecting differences in operational definitions, measurement instruments, survey methodology and geographic location. Most existing estimates of physical disability are based on the 1993 ABS disability survey data. However, the operational definitions used to obtain estimates from the survey data vary (Summary Table 2). The estimates for South Australia are based on a State-wide telephone survey of disability prevalence.

Table S2: Existing estimates of the prevalence of physical disabling conditions and physical disability in Australia

Region	Prevalence	Definition	Data sources	Source
Australia	16.0%	Main disabling condition, physical—ABS broad grouping, including sensory conditions	1993 ABS Disability Survey	ABS 1993
Australia	10.3%	Impairment, physical—ABS grouping of survey screening questions	1993 ABS Disability Survey	ABS 1996
NSW	5.0%	'Single impairment group', physical	1993 ABS Disability Survey	Kennedy 1996
NSW	13.9%	Main disabling condition, physical—ABS broad grouping, including sensory conditions	1988 ABS Disability Survey	New South Wales Department of Family and Community Services 1990
Qld	16.0%	Main disabling condition, physical—ABS broad grouping, including sensory conditions	1993 ABS Disability Survey	Queensland Department of Families, Youth and Community Care 1997
WA	12.6%	Main disabling condition, physical (excluding sensory conditions)	1993 ABS Disability Survey	Alessandri et al. 1996
SA	11.9%	Musculoskeletal disability	South Australia Survey of Disability Prevalence, November 1996–February 1997	South Australian Health Commission 1998
	4.2%	Musculoskeletal disability (main condition)		
	0.7%	Neurological disability		
	0.4%	Limiting neurological disability		
ACT	16.8%[(a)]	Main disabling condition, physical—ABS broad grouping, including sensory conditions	1993 ABS Disability Survey (standardised rate)	Gilbert 1997

(a) The figure of 16.8 per 1,000 given on page 20 of Gilbert (1997) is a typographical error. The correct figure, as confirmed by the author, is 168 per 1,000.

AIHW estimates of the prevalence of physical disability in Australia

Estimates of disability prevalence published by the ABS are based on a fairly broad and inclusive definition of disability. In the 1993 disability survey, a person was identified as having a disability if they answered positively to one or more of the screening questions—a mixed list on limitations, restrictions or impairments. The ABS has published estimates of the proportion of people with a disability identified as having a physical impairment, via their response to the screening questions, and the proportion of people with a disability who reported a physical 'main disabling condition' (Table 2.2; ABS 1993b, 1996). However, the ABS has not specifically produced prevalence estimates for different disability groups based on the survey data.

In this paper we develop an approach for estimating the number of people with a physical disability (the 'AIHW method') based on data from the 1993 Survey of Disability, Ageing and Carers. The ABS broad definition of disability (based on response to screening questions) is used as a starting point. People with a physical disability are then identified using combined information from the screening questions, reported disabling conditions, and questions about limitations, restrictions and the need for assistance.

The AIHW method consists of two steps. Step one selects people who reported one or more physical impairments or disabling conditions, either through the screening device or through subsequent questions on disabling conditions (for the full list of physical impairments and disabling conditions see Appendix A). This group is then narrowed down in step two by applying a 'filter'—only people who have reported limitations or restrictions in one or more activities of daily or social life are retained in the group (for the full list of questions on limitations and restrictions see Appendix B). In effect, step one uses a primarily impairment-based approach to delineate the physical group, and step two is a means of standardising the definition of disability across disability groups, so that prevalence estimates are readily comparable. Physical disability is further divided into the subcategories circulatory, respiratory, arthritis, other musculoskeletal, neurological, and 'other physical'.

The measures of prevalence presented in this report include unstandardised estimates of prevalence rate, standardised prevalence ratio (SPR) and indirectly standardised rates. Indirectly standardised rates are calculated by multiplying the SPR for a particular sub-population by the national prevalence rate. The SPR is used to compare prevalence rates between populations with different age and/or sex structures. In this report SPR is used to compare prevalence in different jurisdictions, and between sub-populations defined by country of birth and Indigenous status.

Estimates at national level

In the 1993 ABS disability survey, people with a disability were asked to indicate their specific disabling conditions. The condition reported to cause the most problems was identified as the person's main disabling condition.

Main disabling condition

In 1993, there were 1,726,200 people, or 9.8% of the Australian population, with a disability (using the ABS broad definition) who reported a physical main disabling condition (Summary Table 3). Of these, 423,100 people, or 2.6% of the Australian population aged 5 years and over, also had a severe or profound handicap, meaning that they always or sometimes needed personal assistance or supervision with activities of daily living (self-care, mobility or verbal communication).

Arthritis (2.9% of Australians) was the most commonly reported physical main disabling condition, followed by other musculoskeletal disorders (2.0%).

All disabling conditions

About 2,350,300 people, or 13.3% of Australians, reported one or more physical impairments or disabling conditions in 1993 (Summary Table 3). Of these, 620,400 people, or 3.8% of Australians, also had a severe or profound handicap. The figure of 3.8% (620,400 people) is comparable with the AIHW estimate of intellectual disability prevalence—178,000 or 1.0% of the Australian population—which included only those people with a severe or profound handicap (Wen 1997).

Using the AIHW method (i.e. selecting people who reported one or more physical impairments or disabling conditions and one or more activity limitations), the prevalence of physical disability in 1993 was 11.9%, or 2,099,600 people. Arthritis was the most frequently reported condition (5.1% of the total population).

Table S3: People with a disability: physical disability by method of calculation, Australia 1993[a]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Main disabling condition plus severe or profound handicap[a]							
('000)	56.9	47.6	118.1	83.6	41.8	75.1	423.1
%	0.3	0.3	0.7	0.5	0.3	0.5	2.6
Main disabling condition							
('000)	276.7	290.4	504.3	359.0	111.0	184.9	1,726.2
%	1.6	1.6	2.9	2.0	0.6	1.0	9.8
All disabling conditions plus severe or profound handicap [a] [b]							
('000)	225.6	121.9	259.8	143.6	90.7	387.1	620.4
%	1.4	0.7	1.6	0.9	0.6	2.4	3.8
All disabling conditions							
('000)	826.7	524.1	974.2	516.5	205.2	925.4	2,350.3
%	4.7	3.0	5.5	2.9	1.2	5.3	13.3
AIHW method (all disabling conditions plus activity limitation)							
('000)	765.6	464.8	891.8	474.8	177.9	864.1	2,099.6
%	4.3	2.6	5.1	2.7	1.0	4.9	11.9

(a) Severity of handicap was not determined for children aged 0–4 years with a disability—these estimates apply to people aged 5 and over.
(b) Prevalence estimates based on all disabling conditions plus severe or profound handicap are comparable with the AIHW estimate of the prevalence of intellectual disability (Wen 1997).

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Demographic pattern of physical disability

Country of birth

People born overseas accounted for 25.4% of people with a physical disability, whereas they made up only 22.2% of the total Australian population.

Unstandardised estimates using the AIHW method show that the overall physical disability prevalence rate for people born in Australia (11.4%) was lower than for people born overseas—14.5% for people born in other English-speaking countries and 13.0% for people born in non-English-speaking countries.

In contrast to the unstandardised estimates, the standardised prevalence ratios (SPRs) that take account of different age and sex structures within sub-populations show that people born in Australia were more likely to report physical disability than those born overseas. The SPR for the Australian-born population was 1.04, higher than for people born overseas—0.90 for people born in non-English-speaking countries and 0.92 for people born in other English-speaking countries.

The contrast between the unstandardised estimates and the SPR can be mainly attributed to marked differences in age structure between the three population groups. The overseas-born populations are more concentrated in the later age groups, in which rates of physical disability are higher. Therefore, unstandardised estimates suggest that overall prevalence rates are higher for the overseas-born than for the Australian-born population, when age-specific rates are in fact lower in the overseas-born population. People aged 65 and over made up much higher proportions of the population for people born in other English-speaking countries (16.9%) and non-English-speaking countries (13.5%) than for people born in Australia (10.7%). The most striking contrasts in population age structure, however,

were in the 20–64 age group. In the two overseas-born populations, the proportion of people in this age group was about 75%, as compared with 55% in the Australian-born population.

Age and sex pattern of prevalence

Total Australians

The overall prevalence of physical disability was higher for females than for males. This pattern was more marked for people with a severe or profound handicap and people aged 65 and over. Females had higher rates of arthritis than males across all age groups.

Country of birth

Overall unstandardised prevalence rates of physical disability were higher for females than for males among people born in Australia. There were no significant sex differences in prevalence rates among people born in overseas countries, either for physical disability generally or within particular subgroups.

Australian-born females had higher prevalence rates than Australian-born males in three of the six sub-categories of physical disability (circulatory, arthritis and other physical). Males had higher rates of other musculoskeletal disorders.

Associated disabilities

Some people with a physical disability also reported other types of disability. Hearing impairment was the most commonly associated disability for people with physical disability of all ages. Psychiatric disorders and acquired brain injury were the second most commonly reported conditions, each accounting for 14% of people with physical disability.

Estimates at State and Territory level

All disabling conditions using AIHW method

The unstandardised prevalence rates estimated using the AIHW method show that South Australia had the highest rate (13.9%) of all the jurisdictions while the Northern Territory had the lowest rate (7.7%). The Australian Capital Territory (10%) and New South Wales (11.2%) also had rates below the national average (11.9%). Rates for the other States were close to the national average (Summary Table 4).

In contrast to the unstandardised rates, age-standardised rates in the Australian Capital Territory and the Northern Territory were close to the national average. Both Territory populations have younger age structures than the Australian population as a whole—notably, the proportion of people aged 65 and over is much lower than the national average. Thus the low unstandardised rates for the Australian Capital Territory and the Northern Territory can be attributed largely to their younger population structure.

In South Australia the proportion of people aged 65 and over is higher than for all Australians. But even when the effect of age structure was removed, the prevalence of physical disability in South Australia was still higher than the national average. Thus, the higher unstandardised rate in South Australia may reflect a combination of high age-specific prevalence and a high proportion of people aged 65 years and over.

Only New South Wales had prevalence rates lower than the national average using both standardised and unstandardised measures, despite the fact that the proportion of people aged 65 and over in New South Wales (12.2%) was slightly higher than the national average

(11.6%). This suggests that, overall, the effect of lower age-specific prevalence rates in New South Wales outweighed the effect of an older population age structure. The low prevalence rates were particularly evident among people under the age of 65 years.

Standardised prevalence rates for the population aged under 65 provided a slightly different picture for some States and Territories. Queensland had a significantly higher rate (8.5%) than the national average (7.6%). New South Wales had a very low rate of 6.6%, significantly below the national average.

Table S4: People with a disability: physical disability calculated using the AIHW method, by State or Territory, by age, unstandardised prevalence rate, standardised prevalence ratio (SPR), and standardised prevalence rate[(a)], Australia 1993

	States and Territories								
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Under 65 years									
Unstandardised rate	6.7	7.9	8.4	8.2	8.5	7.4	7.4	6.3	7.6
SPR	0.87	1.03	1.12	1.10	1.08	0.97	1.05	0.98	1.00
Standardised rate	†6.6	7.8	†8.5	8.4	8.2	7.4	8.0	7.4	7.6
All ages									
Unstandardised rate	†11.2	12.4	12.2	11.6	†13.9	12.3	†10.0	†7.7	11.9
SPR	0.92	1.03	1.05	1.04	1.09	1.01	1.06	1.04	1.00
Standardised rate	†10.9	12.3	12.5	12.4	†13.0	12.0	12.6	12.4	11.9

† Rates are significantly different from the national rate.

(a) Standardised prevalence rate was calculated by multiplying the standardised prevalence ratio for a particular State or Territory by the national prevalence rate.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

1 An overview of existing definitions and classifications

1.1 Introduction

'Physical disability' is commonly recognised as a disability group in the disability field, and in legislative and administrative contexts in Australia. People with physical disabilities represent a significant client group of disability services. However, the scope of this group is often not clearly defined. Consequently, existing estimates of physical disability prevalence vary. Consistent and usable estimates of disability prevalence are needed to facilitate service planning and inform the community.

The main objectives of this report are:

- to conduct a critical review of existing definitions, classifications, data collections and estimates of prevalence relating to disability generally and physical disability in particular;
- to discuss some central issues in defining, classifying and measuring disability;
- to estimate the prevalence and demographic pattern of physical disability in Australia; and
- to promote discussion and the development of improved national data on the main disability groups.

Much of the material reviewed and the estimates presented in this report relate to people of all ages. However, the experiences and needs of elderly people with disability may differ from those of younger people with disability. These differences are not specifically addressed in this paper. The focus of this paper reflects a disability services perspective.

Chapter 1 of this paper provides an overview of definitions and classifications of disability, focusing particularly on physical disability. Existing international and Australian estimates of prevalence are reviewed in Chapter 2. Chapter 3 summarises some important issues relating to operational definitions and approaches to estimating prevalence. Chapter 4 discusses in detail the methods of estimating prevalence used in this report. Newly derived estimates of the prevalence of physical disability in Australia, based on the 1993 ABS Survey of Disability, Ageing and Carers, are presented, and demographic patterns of prevalence are discussed.

This is the second publication in a series of reports on the definition and prevalence of different disability groups in Australia. The first report in the series, focusing on intellectual disability, was published in 1997 (Wen 1997).

'Physical disability' is sometimes used as a broad category for all disabilities that are not 'mental disabilities'. The terms 'physical impairment', 'physical disability', 'physical activity' and 'physical function' are in common use in the disability field in Australia, but are rarely clearly defined.

The International Classification of Impairments, Disabilities and Handicaps (ICIDH) and the International Statistical Classification of Diseases and Related Health Problems (ICD) are

two major international classifications used to define and classify disability and disease/disorder, respectively. The ICD has also been widely used as a coding system to classify health conditions underlying disability. In addition to these two classifications there is a variety of definitions of disability based on functional assessment. These definitions focus on measuring functional ability or activity limitation.

Depending on the purpose for which they are used, the application of these various definitions and classifications can result in different operational definitions and approaches to data collection, affecting the estimation of prevalence rates. These issues are discussed in this chapter, first in the international context (Sections 1.2 to 1.5), then in the Australian context (Section 1.6). Different approaches and methodologies for estimating prevalence will be reviewed in Chapter 2.

1.2 International Classification of Impairments, Disabilities and Handicaps (ICIDH)

The 1980 version of ICIDH

The International Classification of Impairments, Disabilities and Handicaps (ICIDH) was published in 1980. It has been widely accepted as a model for conceptualising disability and has been used in a range of applications. The ICIDH provides a framework for defining and classifying information about the 'long-term consequences of disease, injuries, or disorders' (WHO 1980). The framework views the consequences of disease in terms of three dimensions: impairment, disability and handicap.

Impairment is concerned with the functioning of individual parts of the body, and is defined as 'any loss or abnormality of psychological, physiological or anatomical structure or function'.

Disability relates to whole person functioning, and is defined as 'any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being'.

Handicap reflects the interaction between disability and environmental factors (i.e. the physical and social characteristics of a person's environment). It is defined as 'a disadvantage for a given individual, resulting from an impairment or a disability, that limits or prevents the fulfilment of a role that is normal (depending on age, sex, and social and cultural factors) for that individual' (WHO 1980).

According to the framework, an impairment may lead to a number of disabilities. These disabilities then may lead to handicaps in several areas. However, the actual interrelationship between the three dimensions is much more complex than a simple linear progression (WHO 1980; Badley 1995). In some cases, an impairment may not lead to any disability or handicap.

The 1980 ICIDH provides a classification system for each of the three dimensions. While each classification is independent of the others, there are overlaps between impairment and disability and between disability and handicap. The following table shows the broad categories within the three dimensions.

Table 1.1: ICIDH classification of impairments, disabilities and handicaps—broad categories

Impairments	Disabilities	Handicaps
Intellectual	Behaviour	Orientation
Other psychological	Communication	Physical independence
Language	Personal care	Mobility
Aural	Locomotor	Occupation
Ocular	Body disposition	Social integration
Visceral	Dexterity	Economic self-sufficiency
Skeletal	Situation	Other handicap
Disfiguring	Particular skill	
Generalised, sensory, and other impairments	Other activity restrictions	

Source: WHO 1980.

The Draft ICIDH–2

The ICIDH is currently being revised to incorporate new developments and criticisms of the original ICIDH. In the revised framework, the term 'disablement' is used as an 'umbrella' term to encompass the universe of disability experience, including three basic dimensions: impairment, activity and participation. The terms 'activity' and 'participation' replace 'disability' and 'handicap', respectively.

The proposed definitions of impairment, activity, and participation are as follows:

> In the context of health condition:
>
> Impairment is a loss or abnormality in body structure or of a physiological or psychological function.
>
> Activity is the nature and extent of functioning at the level of the person. Activities may be limited in nature, duration and quality.
>
> Participation is the nature and extent of a person's involvement in life situations in relationship to impairments, activities, health conditions and contextual factors. Participation may be restricted in nature, duration and quality. (WHO 1997)

A recent AIHW study found, after a critical review of nationally significant definitions and data collections in Australia, that the proposed draft ICIDH–2 framework is generally consistent with Australian disability service definitions (Madden & Hogan 1997). It also provides a useful framework for comparing, identifying gaps and moving towards consistency in Australia's statistical and administrative definitions and data collections.

There are a number of new features of the draft ICIDH–2, which may improve our understanding and encourage the use of its conceptual framework, definitions and classifications in data collection and the estimation of disability prevalence:

- It emphasises that, in the context of health condition, the three dimensions are distinct but parallel classifications. They should not be seen as a 'process' or a series of events that happen to people. Rather, they should be seen as conceptual dimensions to be used for classifying specific aspects of the disability experience at one point in time (WHO 1997). The dimensions can be used alone or in an interrelated way to provide a more comprehensive picture. It is important to collect data independently on each dimension and then explore associations and causal links between dimensions.

- It further clarifies the role of environment in the experience of persons with a disability by including contextual factors (e.g. physical and social environmental factors) in the conceptual framework.
- The classification of impairment is divided into body functions and structures (the 1980 ICIDH classification of impairment does not separate the two aspects).

1.3 International application of the ICIDH

The 1980 ICIDH provided a general conceptual framework as a starting point for defining and describing disability. Based on the ICIDH, many countries have designed and conducted disability surveys according to their own priorities and social and economic circumstances. The United Nations has developed an international disability statistics database using the ICIDH framework. A number of US legislative and administrative documents have used concepts or definitions adapted from the ICIDH. These documents are major sources of reference for similar documents in Australia. This section reviews these applications of the ICIDH and begins to draw out their approach, if any, to physical disability.

American Medical Association (AMA) definitions and classifications

The AMA's Guides to the Evaluation of Permanent Impairment (the Guides) provide a widely used method for estimating the severity of permanent impairment of human organ systems, and the resultant impact on a person's physical and mental functioning and capabilities (AMA 1993:371).

The Guides define impairment as 'the loss, loss of use, or derangement of any body part, system, or function' (AMA 1993:315). The definition closely parallels that of the 1980 version of the ICIDH, which defines an impairment as 'any loss or abnormality of psychological, physiological, or anatomical structure or function' (WHO 1980:47).

Permanent impairment is defined as impairment 'that has become static or well stabilised with or without medical treatment and is not likely to remit despite medical treatment' (AMA 1993:315).

The AMA Guides do not specifically mention physical impairment. Rather, impairments are classified using chapter headings based chiefly on body systems, such as musculoskeletal, nervous, respiratory and cardiovascular. Mental and behavioural disorders are grouped as one category of impairment.

It is important to note that, although the Guides' main focus is the impairment dimension of the ICIDH framework, they also emphasise that impairments should be considered as conditions that interfere with a person's 'activities of daily living'. The evaluation process requires an assessment of the impact of a condition(s) on a person's activities of daily living. This includes whether the person is likely to suffer injury, harm or further impairment through participating in activities necessary to meet personal, social or occupational demands, and whether accommodations or assistive devices are needed to help the person carry out the activities. However, the Guides do not provide guidelines regarding procedures or instruments for measuring the impact of a condition on activities, though a list of daily activities is provided. Among other activities, such as eating and walking, 'occupation' is considered as one of a person's daily activities (AMA 1993).

The Guides also use the concept of 'whole person impairment'. An able-bodied human being is viewed as a whole organism and any impairment to the functioning of the whole organism is reflected in a proportionate reduction of the whole (AMA 1993:2, 8). If a person has more than one impairment or condition, the estimates for the separate conditions can be combined into an overall impairment estimate using the Combined Values Chart (AMA 1993:2–8).

The AMA Guides are one of the major references for Australian legislation on disability and disability services, such as Australia's Social Security Act 1991, Commonwealth Employees Rehabilitation and Compensation Act 1988 and the Veterans' Entitlements Act 1986. These Acts have adapted the impairment classification categories and the concept of 'whole person impairment', including the rating system for calculating overall impairment (see Section 1.6 for more discussion of Australia's legislative definitions). Each of the Acts stipulates a set of criteria for entitlement to services, including an assessment of impairment. The AMA Guides are also used as a reference in a number of Australian accident compensation schemes.

Americans with Disabilities Act of 1990

The purpose of the Americans with Disabilities Act (ADA) is to provide a clear and comprehensive national mandate to eliminate discrimination against people with a disability and to bring them into the mainstream of social and economic community life (Americans with Disabilities Act of 1990, 42 USCA § 12101(b)—(West 1995)).

The ADA defines disability, with respect to an individual, as 'a physical or mental impairment that substantially limits one or more of the major life activities of such individual; a record of such an impairment; or being regarded as having such an impairment' (42 USCA § 12102(2) (West 1995)).

Physical impairment is defined as 'any physiological disorder or condition, cosmetic disfigurement, or anatomic loss affecting one or more of the following body systems: neurological, musculoskeletal, special sense organs, respiratory (including speech organs), cardiovascular, reproductive, digestive, genitourinary, hemic and lymphatic, skin, and endocrine systems' (Table 1.2; Americans with Disabilities Act of 1990, Pub L No 101–485, 267 (legislative history)).

The scope of physical impairment in the definition of the ADA is very broad. It is basically a 'catch all' category, including all impairments other than mental or psychiatric disorders.

Mental impairment includes any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional or mental illness, and specific learning disabilities (Pub L No 101–485, 267 (legislative history)).

The ADA definition of disability combines the impairment and activity limitation dimensions of the draft ICIDH–2 framework. The identification of impairment and disability does not necessarily depend on a medical evaluation, and the definition specifically includes people 'regarded as having impairment'.

Table 1.2: International definitions of physical impairments/disabilities

Source	Definition
United Nations 1986 Development of Statistics of Disabled Persons: Case Studies.	Physical impairments include visceral, skeletal and disfiguring impairments—for example, amputations, paralysis, limping and lameness, deformity, and hunched back.
United Nations 1988a. UN Expert Group on Development of Statistics of Disabled Persons: suggestions on topics concerning disability for use in household surveys.	Physical impairments are divided into two groups: 'sensory' (aural, language and ocular), and 'other physical impairments' (visceral, skeletal and disfiguring). Physical disabilities are disabilities in the areas of locomotion (includes ambulation and confining disabilities), communication (speaking, listening, seeing, and other disabilities), personal care (includes excretion, personal hygiene, dressing and feeding), body disposition (includes domestic disabilities, such as preparing and serving food and care of dependants, and body movement disabilities such as fingering, gripping and holding) and dexterity (includes daily activity disabilities, such as use of doors, domestic appliances and windows, and manual activity disabilities, such as fingering, gripping and holding).
Americans with Disabilities Act of 1990. 42 USCA § 12102(2) (West 1995); Pub L No 101–485, 267 (legislative history). These definitions are based on concepts of EEOC Title 1 Regulations and Interpretive Appendix (29 CFR 1630).	'Physical or mental impairment' means the following: (1) any physiological disorder or condition, cosmetic disfigurement, or anatomic loss affecting one or more of the body systems: neurological, musculoskeletal, special sense organs, respiratory (including speech organs), cardiovascular, reproductive, digestive, genitourinary, hemic and lymphatic, skin, and endocrine systems; or (2) any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional or mental illness, and specific learning disabilities. 'Disability' means, with respect to an individual, (a) a physical or mental impairment that substantially limits one or more of the major life activities of such individual; (b) a record of such an impairment; or (c) being regarded as having such an impairment.
Wood & Badley 1988.	The three major classes of medical disorder giving rise to disablement: (a) emotional and intellectual impairments, due to mental retardation and mental illness; (b) sensory impairments including the special senses of vision and hearing—data specific to other functions of communication, notably speech, are not readily available; (c) physical impairments (cognitive, the result of trauma, or due to other conditions).

Sources: United Nations 1986; United Nations 1988; Americans with Disabilities Act of 1990 PL101–338; Wood & Badley 1988.

International population surveys on disability

Prior to the publication of the 1980 ICIDH many efforts to define disability were made in the course of planning and conducting population disability surveys. These efforts provided useful experience leading to the development of concepts in the ICIDH (United Nations 1988a).

Examples relating to physical disability are the 1971–72 survey of 'physically handicapped persons' in the Netherlands, and the 1968–69 Survey of the Handicapped and Impaired in Britain. The Netherlands' survey focused on 'persons with a physical handicap in conjunction with a physical defect'. A physical defect was defined as 'a state of imperfection of the body which can be objectively defined by a physician' (United Nations 1988a:67).

The publication of the ICIDH has provided a coherent framework for survey design and has greatly improved data collection on disability. The United Nations has developed an international, unified database to facilitate the global monitoring of population censuses and surveys on disability and to maximise the use of information on disability and disability services (United Nations 1984, 1986, 1988b). The Disability Statistics Data Base (DISTAT) uses the ICIDH as a framework to integrate and compile data collected from 55 countries in population censuses, household surveys and registration systems. The database covers surveys conducted both before and after the publication of the 1980 ICIDH.

In the United Nations database the scope of 'physical impairments' covers three of the nine broad categories in the impairment classification of the 1980 ICIDH: visceral, skeletal and disfiguring impairments (United Nations 1986; Tables 1.1 and 1.2).

A United Nations expert report on the development of statistical concepts and methodology on disability for household surveys recommends a wider scope for 'physical impairments',

including a sensory sub-category (United Nations 1988a; Table 1.2). It also suggests that multiple dimensions of information be collected in household surveys. Surveys could cover impairment, disability (activity limitation), cause of impairment, social, economic and environmental characteristics, and the distribution and use of services and support. The report generally supports the 1980 ICIDH concepts of impairment and disability, but notes that the scope of handicap should include the measurement of important social, economic and environmental factors (United Nations 1988a).

The 1988 report suggests that using the general concept of disablement, that cuts across the three dimensions of the 1980 ICIDH, can maximise the usefulness of statistics collected in household surveys, both for health indicators and disability service planning. It recommends that, in household surveys, the specific term 'disability' should only refer to those consequences of diseases and injury that are reflected in restrictions on a person's daily living and social activities, as it is in the 1980 ICIDH (United Nations 1988a).

The recommended scope of 'physical disability' consists of five of the nine 1980 ICIDH broad categories of disabilities: locomotor, communication, personal care, body disposition and dexterity (United Nations 1988a; Tables 1.1 and 1.2).

1.4 Measures of functional assessment

Measures of functional assessment have been developed over several decades to assess degree of disability, to characterise health status, to project need for disability and health services and to measure outcomes of service provision (e.g. Fried et al. 1994; Katz & Akpom 1976; Katz et al. 1963; Lawton & Brody 1969; Mahoney & Barthel 1965; Manton et al. 1993).

Functional assessment is about measuring the performance of, or capacity to perform, a variety of activities normal for people in good health. Two basic measures of activity limitation, the Activities of Daily Living (ADL) scale and the Instrumental Activities of Daily Living (IADL) scale, have been widely used in clinical settings and population surveys to define disability and to assess need for services. The ADL scale focuses on assessing ability to perform basic self-care activities—e.g. bathing, dressing, toileting, getting in and out of bed, continence and feeding. The IADL scale assesses ability to carry out activities central to independent functioning in the community—e.g. light housework, laundry, meal preparation, grocery shopping, outside mobility, travel, money management, and telephoning (Fried et al. 1994; Katz & Akpom 1976; Katz et al. 1963; Lawton & Brody 1969; Manton et al. 1995).

Functional assessment corresponds to the activity dimension of the draft ICIDH–2 framework, and is not concerned with particular impairment or disease. However, the scope of the activity dimension of the draft ICIDH–2 is much broader than the ADL or IADL scales.

The two scales collect information either through self-report or professional assessment. 'ADL disability' has been defined as the inability to perform at least one of a number of basic self-care activities without equipment or personal assistance, and 'IADL disability' as the inability to perform one of the activities central to independent functioning in the community due to health conditions (Manton et al. 1995).

The ADL scale is considered to represent a more basic level of functioning than the IADL scale and, consequently, many people with an ADL limitation also have an IADL limitation. The ADL scale is suited therefore to the measurement of more severe limitations. The two scales can also provide information on the particular types of assistance people need and are useful in determining eligibility for services and benefits (Ficke 1992).

Many modified versions of the ADL and the IADL have been created by users of the scales to meet specific needs. Some versions are more complex than the original scales, and some items of different versions overlapped. For example, the Rosow-Breslau Functional Health Scale (Rosow & Breslau 1966) was developed to assess ability to perform more physically demanding activities (e.g. heavy housework, climbing stairs and walking half a mile).

Other scales, for instance the Functional Independence Measure (FIM), have been devised to incorporate communication and cognitive functional assessment (Kidd et al. 1995). The cognitive aspect of the FIM scale includes comprehension, expression, social interaction, problem solving and memory (Kidd et al. 1995).

The FIM is widely used to evaluate outcome in rehabilitation (McPherson et al. 1996; Kidd et al. 1995). An expanded version of the FIM, the Functional Assessment Measure (FIM+FAM), was developed to assess rehabilitation outcome for people with brain injuries. The FIM+FAM scale includes additional cognitive items and some psychosocial items, such as emotion, employability, orientation, attention and safety judgement (McPherson et al. 1996).

It has been found that items relating to 'physical activities', such as self-care and mobility, are generally easier to assess and more reliably scored than communication and cognitive behavioural items (McPherson et al. 1996).

As ADL scales tend to focus primarily on physical activities or physical functions they are sometimes used to assess physical disability (e.g. Bruce et al. 1994; Fried et al. 1994; Ward et al. 1995). However, there is no universally agreed definition of what 'physical activities' are. Most activities of daily living have a physical component, but many also have a cognitive component (Johnson & Wolinsky 1993; Stewart & Kamberg 1992). Thus, a limitation in performing an activity may be due to mental or psychiatric impairment, rather than physical impairment.

Johnson and Wolinsky have proposed a three-dimensional scale incorporating basic, household, and advanced ADLs and used the scale in the analysis of survey data on health status and service usage of older Americans. The basic ADL and household ADL roughly correspond to the conventional ADL and IADL, respectively. The advanced (or cognitive) ADL includes those activities in the conventional ADL and IADL that are more closely related to cognitive capacity, such as managing money and using a telephone (Johnson & Wolinsky 1993; Wolinsky & Johnson 1991).

Analysing different survey data, Fitzgerald et al. (1993) have replicated the proposed three-dimensional scales and confirmed that the underlying structure of ADLs consists of at least three separate dimensions, one of which is aligned with cognitive capacity.

1.5 International Statistical Classification of Diseases and Related Health Problems (ICD)

The primary purpose of the ICD is to provide standards for classifying diseases and causes of death (WHO 1993). It can also be used as a framework for classifying information about cause of disability and underlying disabling conditions. This is particularly useful for disability prevention, rehabilitation and monitoring programs.

The ICD is also the primary classification used for the study of morbidity. Morbidity is defined as the level and type of sickness within a population. Morbidity indicators are commonly expressed in terms of the incidence and/or prevalence of specific diseases and other health-related events (e.g. injuries). Morbidity is an important predictor for disability. In conjunction with other factors (such as socioeconomic status) it can help predict or

explain the prevalence and demographic pattern of disability in a community (Chamie 1995; Pol & Thomas 1992; United Nations 1988b).

Using the ICD–10 there are two broad approaches to including morbidity data in the study of disability (Chamie 1995). First, morbidity categories may be used to describe medical or pathological conditions underlying disability, regardless of 'what happened' to cause the condition. These underlying conditions are mostly classified using coding categories in Chapters I–XVIII of the ICD–10.

Second, morbidity categories can be used to describe an 'event' ('what happened') leading to impairment or disability (as defined in the 1980 ICIDH). The United Nations Statistical Division has proposed a short-list for classifying the external causes of disability (Chamie 1995; United Nations 1988a). The short-list was first derived from the ICD–9 classification of external causes of injury and poisoning, and then expanded to include three broad categories of diseases. The proposed short-list of external causes of disablement is as follows:

- Infectious and parasitic disease (Chapter I)
- Congenital anomalies and perinatal conditions (Chapters XVI, XVII)
- Other diseases and conditions (Chapter XIX)
- Injury:
    - Motor vehicle accidents
    - Other transport accidents
    - Accidental poisoning
    - Injury resulting from accidental falls, fire, and operations of war
- Other causes including natural and environmental factors.

In Australia, the ABS disability surveys have adopted the ICD as a coding system for disabling conditions. Some major administrative data collections, such as CentreLink (formerly Department of Social Security), have also applied the ICD coding system to their client characteristic data.

1.6 Australian administrative definitions and classifications

The draft ICIDH–2 framework can be used to compare definitions of disability used in administrative contexts. A review of definitions of disability in Australia, in which various administrative definitions were mapped to the draft ICIDH–2 conceptual framework, was presented in a recent AIHW study (Madden & Hogan 1997). This section highlights some of the main features of administrative and legislative definitions of disability, and raises some key conceptual and methodological issues relevant to defining and estimating the prevalence of physical disability.

Broad legislative definitions

Definitions of disability in anti-discrimination legislation tend to be broad. This is because the legislation generally aims to eliminate discrimination on the grounds of disability across all domains of social and economic community life, and to bring as many people as possible under its operation. Main features of such definitions are:

- Definitions encompass all three dimensions of the ICIDH framework, plus the contextual factors. Negative experience in one or more dimensions is considered to constitute disability.
- There is no requirement of minimum duration or severity.
- Particular impairment or disability groups (such as intellectual or physical) are not specifically mentioned.

For example, the definition of disability in the Commonwealth *Disability Discrimination Act 1992* is very broad and inclusive. Apart from the above features, it also includes people with a disability that 'previously existed but no longer exists; or may exist in the future; or is imputed to a person' (Commonwealth of Australia 1992). The impairment component of the Act's definition includes an unstructured mix of impairment, disease and disorder.

State and Territory anti-discrimination and equal opportunity Acts have adopted similar definitions with minor variations (Australian Law Reform Commission 1996).

Legislative definitions—disability and disability services

Definitions of disability in disability services legislation tend to be more specific. This reflects the more specific purposes of the legislation in defining the target population groups for certain program areas. Main features of such definitions are:

- The presence of specific impairments is a gateway to eligibility.
- Particular impairment types, such as intellectual or physical, are specified (though rarely defined).
- A combination of impairment and activity limitation or participation restriction is often required.
- There are requirements regarding minimum duration and severity of impairment and/or activity limitation, and need for assistance.

For example, the 1998 Commonwealth/State Disability Agreement (CSDA) targets disability that:

- is attributable to an intellectual, psychiatric, sensory, physical or neurological impairment or acquired brain injury (or some combination of these);
- is likely to be permanent;
- results in a substantially reduced capacity in at least one of the specified activities relating to self-care/management, mobility and communication; and
- requires ongoing or episodic support.

The Commonwealth *Disability Services Act 1986* (which preceded the CSDA) and corresponding State legislation use similar wording.

Some legislation is more specific than the Disability Discrimination Act, imposing criteria concerning the duration and minimum severity of impairment.

For instance, the Commonwealth *Social Security Act 1991* provides tables for the assessment of impairment as part of the eligibility assessment for the Disability Support Pension. The Disability Support Pension assessment table has adapted the concepts, including the 'whole person impairment' concept, the structure of impairment categories and the rating system used in the AMA Guides (see Section 1.3)—people with multiple impairments are assessed by weighting the scores for each individual impairment and calculating a total impairment score (Department of Social Security 1993). The Act specifies an impairment score of 20% or

more as one of the eligibility criteria for the Disability Support Pension. In addition to the minimum score requirement, the impairment must be permanent or expected to last for more than two years, and must prevent the person from working for at least 30 hours per week at award wages.

In summary, Australian legislative definitions of disability range from very broad to more specific, reflecting the different purposes of individual Acts. Requirements regarding minimum duration and severity of impairment, activity limitation and participation restriction vary. The terms 'physical impairment' and 'physical disability' may be used but are not defined. Consequently, administrative data collections (and any estimates of disability prevalence based on them) can differ greatly.

Definitions used in national data collections on disability support services and open employment services for people with a disability

The Commonwealth/State Disability Agreement (CSDA) Minimum Data Set (MDS) provides data items and definitions which are used to compile nationally consistent data on disability support services provided or funded under the CSDA (Black & Maples 1998). Data are collected annually across the country.

In Australia, disabilities are often categorised into 'disability groups'. Existing 'groups' in Australia (e.g. intellectual, physical and acquired brain injury) tend to include people with a disability who are considered—by themselves, society, or service providers—to have similar characteristics and related needs, often arising from a similar cause, impairment or disabling condition (unpublished agenda paper of MDS annual network meeting 1998).

The 'disability group' concept reflects common usage in the disability field. For example, 'a disability attributable to a physical impairment' tends to be condensed to 'physical disability' (Madden & Hogan 1997).

The concept of 'disability group' was first formally introduced in the CSDA MDS data guide for the 1997 collection (AIHW 1998). 'Disability group', one of the data items of the consumer profile in the MDS, is a broad categorisation defined on the basis of underlying impairment, condition or cause. The groups reflect the impairments identified in the CSDA, which refers to its target group as people with a disability 'that is attributable to an intellectual, psychiatric, sensory, physical or neurological impairment or acquired brain injury (or some combination of these)' (Commonwealth of Australia 1998).

The CSDA MDS data guide provides a non-exhaustive list of examples of associated conditions or impairments for the physical disability group: paraplegia, quadriplegia, muscular dystrophy, motor neurone disease, neuromuscular disorders, cerebral palsy, absence or deformities of limbs, spina bifida, arthritis, and back disorders (AIHW 1998).

The CSDA MDS data guide further classifies disability groups as 'primary' and 'other significant' disability groups. A person's primary disability group is 'that disability, impairment or condition causing most difficulty to the person'. 'Other significant' disability group(s) are 'disability group(s) (other than indicated as being 'primary') causing difficulty to the person' (AIHW 1998). Another major data collection—the National Information Management System for open employment services for people with disabilities—has adopted the CSDA MDS definitions of disability groups (Anderson & Golley 1998).

2 Existing estimates of prevalence of physical disability

This chapter presents an overview of existing international and Australian estimates of the prevalence of disability. Issues relating to operational definitions and different approaches to estimating prevalence are discussed.

2.1 International estimates

The United Nations Disability Statistics Data Base (DISTAT) uses the ICIDH as a framework to integrate and compile data collected from 55 countries in population censuses, household surveys and registration systems. DISTAT covers five subject areas: prevalence of impairments; prevalence of disability; causes of impairment; social, economic and environmental characteristics; and the distribution and use of services and social support (WHO 1990:42).

DISTAT has re-grouped published national statistics on impairment and disability into meaningful subgroups using ICIDH impairment and disability codes. Each impairment or disability classification used in national censuses or surveys has been coded to fit as closely as possible the ICIDH classifications of impairments and disabilities (Chamie 1989).

Comparisons using the DISTAT data show that estimates of disability prevalence range from 0.2% to 20.9% among 55 countries (Table 2.1, Figure 2.1). This large variation is mainly due to differences in operational definitions and case identification methodology (Chamie 1989, 1995).

Table 2.1: Prevalence of disability by data collection type in selected countries

Data collection type	Country	Year	Prevalence (%)	Population
Disability (activity limitation)	Austria	1976	20.9	all ages
	Spain	1986	15.0	all ages
	UK	1985–86	13.5	age 16+
	Canada	1986	13.2	all ages
Impairment	China	1987	4.9	all ages
	Thailand	1981	0.8	all ages
	Sri Lanka	1981	0.4	all ages
	Peru	1981	0.2	all ages

Source: United Nations International Statistics Database (DISTAT), cited from Chamie 1989.

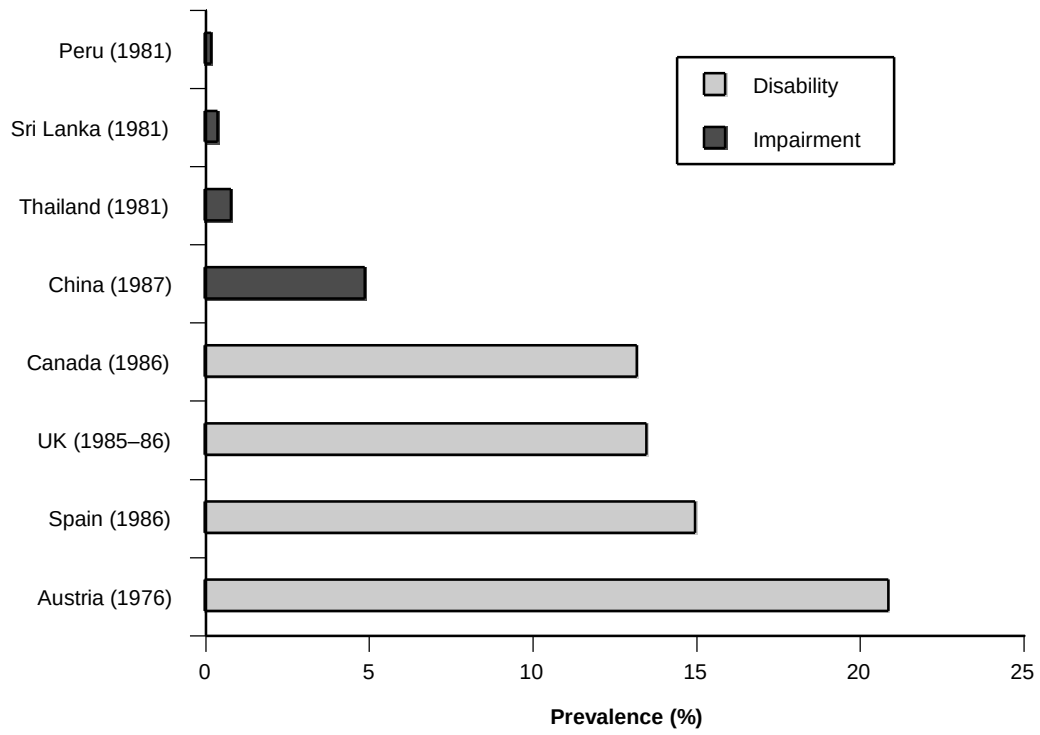

Figure 2.1: Estimates of disability prevalence, by data collection type, in selected countries

The data show that developed countries generally report higher prevalence of disability than developing countries. The developing countries of Asia and Africa have generally used screening questions that are impairment-focused and limited in scope. For instance, screening questions might be targeted to identify people who are blind, deaf, paralysed, or amputees. Such questions identify the most severe or visible cases of disability. Developed countries more often use broad survey screening questions that focus on functional or activity limitations, resulting in higher estimates of disability prevalence (Chamie 1989).

Surveys that use impairment-focused screening questions often also ask respondents to describe the activity limitations associated with their impairments. Likewise, surveys that use activity limitation screening questions often ask respondents to describe the impairments/conditions that underlie their activity limitations. However, as cases of disability are identified on the basis of response to the screening questions, it is the screening questions that determine the scope of 'disability'. Therefore, the dimension on which the screening questions are focused—impairment or activity limitation—can substantially affect estimates of disability prevalence.

Surveys using impairment-focused screening questions produced the lowest prevalence rates, ranging from about 0.3% to 5.0% of the general population. In contrast, surveys using activity screening questions gave the highest prevalence rates, ranging from about 7.1% to 20.9% (Table 2.1, Figure 2.1) (Chamie 1989).

When impairment-based screening questions were used, the prevalence rates for males were generally higher than for females. When broad activity-based screening questions, or

questions combining impairment and activity limitations were used, prevalence rates were similar for females and males, and in some cases rates for females were higher (Chamie 1989, 1995). This suggests that operational definitions of disability may influence patterns of reporting differently for males and females (Chamie 1989).

The diversity of survey methodology, particularly the two broad types of screening question (impairment-focused and activity-focused), indicates a need for an internationally agreed conceptual approach to disability survey screening procedures in order to produce internationally comparable data on the prevalence of disability.

Although the DISTAT database defines the scope of physical impairment (Table 1.2), and provides detailed sub-categories, operational definitions in national surveys vary in scope. Hence, detailed international comparisons of the prevalence of physical disability are problematic.

Nevertheless, international data appear to show that physical disabilities are the most commonly reported disabilities. For example, the 1987 national disability survey of Spain estimated that 60.2% of people with a disability reported physical impairments as their underlying condition. Data from the 1989 Survey of National Registry of Germany show that underlying physical conditions were reported by about 70% of all people with a severe disability receiving rehabilitation services (Chamie 1995).

2.2 Australian estimates of the prevalence of physical disability

Estimates at national level

ABS Survey of Disability, Ageing and Carers

The Australia Bureau of Statistics (ABS) disability surveys provide the only available data on disability based on a comprehensive national sample of the Australian population. The surveys cover rural and urban areas in all States and Territories and gather data from both households and establishments. In the 1993 Survey of Disability, Ageing and Carers, the household sample included about 17,800 private dwellings and 1,600 special dwelling units, while the establishment sample included approximately 700 establishments. This gave a sample size of about 42,000 persons in the household component and 4,800 persons in the establishment component (ABS 1993a).

The ABS disability surveys have collected cross-sectional data at three points in time (1981, 1988 and 1993) spread over a period of 12 years*. Unlike the data obtained from administrative agency records, the ABS disability surveys rely on respondents reporting information that may or may not reflect professional assessment.

The operational definitions of disability used in the surveys were adapted from the ICIDH definition of disability. The survey definitions are relatively broad, aiming to ensure that all people with a disability are identified by the survey. The 1993 survey used a list of 15 screening questions to identify people with a disability. Thus, disability was operationally defined as the presence of one or more of a list of impairments, limitations, restrictions and disabling conditions, which had lasted, or was likely to last, for 6 months or more (Box 2.1).

* Data for the 1998 disability survey have been collected but are not yet available.

Box 2.1: Limitations, restrictions and impairments for disability identification

In the 1993 ABS disability survey people were identified as having a disability if they had one or more of the limitations, restrictions or impairments summarised below (ABS 1993b: 6):

- *loss of sight (even when wearing glasses or contact lenses)*
- *loss of hearing*
- *speech difficulties in native languages*
- *blackouts, fits, or loss of consciousness*
- *slowness at learning or understanding*
- *incomplete use of arms or fingers*
- *difficulty gripping or holding things*
- *incomplete use of feet or legs*
- *treatment for nerves or an emotional condition*
- *restriction in physical activities or in doing physical work*
- *disfigurement or deformity*
- *need for help or supervision due to a mental illness*
- *long-term effects of head injury, stroke or any other brain damage*
- *treatment or medication for a long-term condition or ailment and still restricted*
- *any other long-term condition resulting in a restriction.*

In the survey, people with a disability were also asked to indicate their specific disabling conditions. A disabling condition is a disease, disorder or event (e.g. poisoning or accident) which has lasted or is likely to last for six months or more, or which has produced a long-term effect. To be included, a disabling condition must have resulted in one or more of the limitations, restrictions or impairments listed in the screening questions (ABS 1996:47).

The survey allowed for a maximum of 48 conditions to be recorded but, in practice, the highest number of reported conditions was 14. Disabling conditions were recorded using codes adapted from the ICD–9. The condition reported to cause the most problems was identified as the person's main disabling condition.

ABS estimates of prevalence from the 1993 disability survey

Using data from the survey, the ABS estimated that 18% of the Australian population had a disability in 1993, defined on the basis of a positive response to one or more of the 15 screening questions (ABS 1993a). The ABS grouped disabling conditions into two broad categories: mental disorders and physical conditions. 'Physical conditions' covers all conditions other than mental disorders, including disorders of eyes and ears, and head injury, stroke and other brain damage. 'Mental disorder' covers mental psychoses and all other mental disorders including intellectual impairment (Table 2.2). A classification of broad impairment types was also developed by the ABS on the basis of the 15 screening questions. 'Physical impairments' are identified by a positive response to screening questions about restriction in physical activity or work, difficulty gripping or holding things, lack of full use of arms or fingers, and lack of full use of feet or legs (Table 2.2).

Table 2.2: ABS groupings of main disabling condition and impairment

Type of main disabling condition	Grouping of screening questions into impairment types
Mental disorders	Sensory
Mental psychoses	Loss of sight
Other mental disorders	Loss of hearing
Physical conditions	Intellectual
Disorders of the eye and adnexa	Slow at learning or understanding
Disorders of the ear and mastoid process	Psychological
Nervous system diseases	Receiving treatment for nerves or an emotional condition
Circulatory diseases	Needs help or supervision in doing things because of a mental illness
Respiratory diseases	Blackouts, fits and loss of consciousness
Arthritis	Physical
Other musculoskeletal disorders	Restriction in physical activity or work
Head injury/stroke/any other brain damage	Difficulty gripping or holding things
All other diseases and conditions	Lacking full use of arms or fingers
	Lacking full use of feet or legs

Sources: ABS 1993b, 1996.

Using the ABS grouping of disabling conditions, physical disabling conditions were reported as the main disabling condition by 2,823,200 people—16% of the Australian population, or 88.9% of people with a disability (Table 2.3). Based on the ABS impairment type groups, 10.3% of the Australian population, or more than half of all people with a disability had a physical impairment, either alone (30%) or in combination with other impairments (27%) (ABS 1996:3) (Table 2.3).

The large gap between the two ABS estimates is mainly because of different operational definitions. The figure of 10.3% was based on relatively limited information from the screening questions, while the figure of 16% was obtained using more detailed information about disease, disorders and disabling conditions (see Chapter 3 for a detailed discussion).

Table 2.3: Australian estimates of the prevalence of physical disabling conditions and physical disability

Region	Prevalence	Definition	Data sources	Source
Australia	16.0%	Main disabling condition, physical—ABS broad grouping, including sensory conditions	1993 ABS Disability Survey	ABS 1993b
Australia	10.3%	Impairment, physical—ABS grouping of survey screening questions	1993 ABS Disability Survey	ABS 1996
NSW	5.0%	'Single impairment group', physical	1993 ABS Disability Survey	Kennedy 1996
NSW	13.9%	Main disabling condition, physical—ABS broad grouping, including sensory conditions	1988 ABS Disability Survey	New South Wales Department of Family and Community Services 1990
Qld	16.0%	Main disabling condition, physical—ABS broad grouping, including sensory conditions	1993 ABS Disability Survey	Queensland Department of Families, Youth and Community Care 1997
WA	12.6%	Main disabling condition, physical (excluding sensory conditions)	1993 ABS Disability Survey	Alessandri et al. 1996
SA	11.9%	Musculoskeletal disability	SA Survey of Disability Prevalence, November 1996–February 1997	South Australian Health Commission 1998
	4.2%	Musculoskeletal disability (main condition)		
	0.7%	Neurological disability		
	0.4%	Limiting neurological disability		
ACT	16.8%[(a)]	Main disabling condition, physical—ABS broad grouping, including sensory conditions	1993 ABS Disability Survey (standardised rate)	Gilbert 1997

(a) The figure of 16.8 per 1,000 given on page 20 of Gilbert 1997 is a typographical error. The correct figure, as confirmed by the author, is 168 per 1,000.

Estimates at State level

Most of the existing estimates of physical disability at State level are based on the 1993 ABS disability survey data (Table 2.3, Figure 2.2). The estimates for South Australia, however, were based on a State-wide telephone survey of disability prevalence.

Most estimates derived from the ABS disability survey have used the ABS grouping of main disabling conditions. Based on this broad grouping (which includes sensory conditions) the Australian Capital Territory had the highest prevalence rate at 16.8%*. The Queensland estimate was next highest at 16%. The Western Australian estimate of 12.6% was based on the grouping of physical conditions, but with sensory conditions excluded (Table 2.3).

* This estimate was derived by applying Australian Capital Territory age-specific rates (perhaps not very reliable statistically) to the Australian population in March 1993.

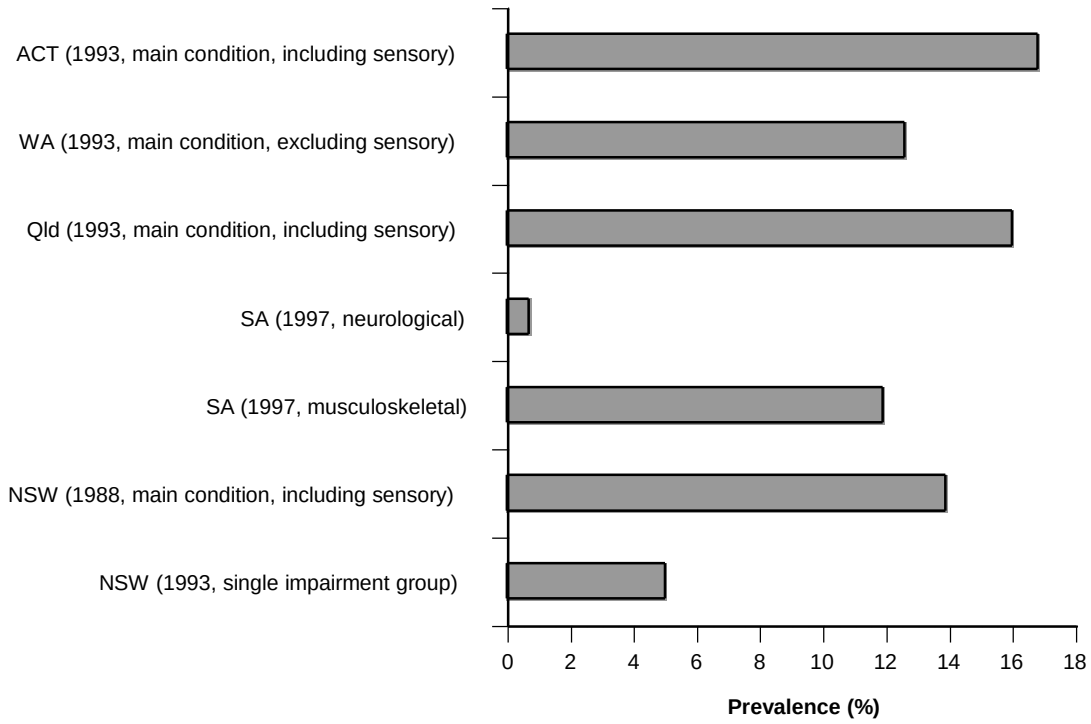

Figure 2.2: Australian estimates of the prevalence of physical disabling conditions and physical disability

One New South Wales report gave an estimate of 13.9%, using physical main disabling conditions (including sensory conditions) and based on the 1988 ABS disability survey data (New South Wales Department of Family and Community Services 1990). Another New South Wales report estimated the prevalence of physical disability at 5%, using the physical 'single impairment group' (Kennedy 1996), but it was not clear how this group was defined.

These State-level estimates demonstrate that, even using the same data source, prevalence estimates can vary substantially when different operational definitions and methods of estimation are used.

The South Australian prevalence estimates were derived from the South Australia Survey of Disability Prevalence, conducted by the South Australian Health Commission between November 1996 and February 1997 (South Australian Health Commission 1998). It was the first State-wide population disability survey ever conducted in Australia. The survey was based on a simple random sample of South Australian household telephone numbers.

The survey yielded a prevalence estimate of 11.9% for 'musculoskeletal disabilities', defined as all people who reported that they had one or more of the following conditions: arthritis, rheumatoid arthritis, paraplegia, quadriplegia, amputation (legs/arms), chronic idiopathic polyneuritis, osteogenesis imperfecta, and familial spastic pariesis (Table 2.3).

An estimate of 4.2% for people with a 'musculoskeletal disability' (main condition) was obtained by excluding people for whom arthritis was their main or only musculoskeletal

condition, but who reported that their arthritis did not limit their usual daily activities, or that it only affected parts of their body other than their arms, legs, or neck (South Australian Health Commission 1998). The rationale for this exclusion is not clear, since substantial proportions of people who reported conditions other than arthritis as their main musculoskeletal condition also reported that the condition caused no limitation in their usual daily activities but were not excluded. The prevalence of neurological disabilities was estimated at 0.7% of the South Australian population and the prevalence of 'limiting neurological disabilities' (i.e. people who reported a neurological condition that limited their usual daily activities) was estimated at 0.4% (South Australian Health Commission 1998).

The South Australian survey estimates are not directly comparable with the estimates derived from the ABS disability surveys because the two surveys differ fundamentally in terms of conceptual framework, scope, survey methodology and operational definitions. The South Australian survey yielded an overall prevalence of disability of 21.3%, which is very high, particularly considering the limited scope of the survey—excluding people living in establishments. Even within the South Australia survey operational definitions varied between different disabilities. For instance, intellectual disability was defined as 'people who have been told by a doctor that they have an intellectual disability' (resulting in a prevalence estimate of 0.57%). This is in contrast to the definition of other types of disability, which did not require verification by professional assessment.

The differences between the estimates presented in Table 2.3 indicate the need to use standardised approaches and operational definitions to estimate prevalence rates if those rates are to be comparable between States and Territories.

Estimates of level of service usage based on national collection of service provision data

As mentioned in Section 1.5, the CSDA MDS is a significant source of data on disability support services provided under the CSDA. In 1997 the national collection gathered 64,432 consumer forms from service providers, representing people receiving services on the 'snapshot' day.

The data on consumers show that physical disability was the second most frequently reported primary disability type—12.2% (7,718 people) of the total 64,432 service recipients (intellectual disability was the most frequently reported primary disability type). The data also show that if all reported significant disabilities (including primary disability) were considered, 18,513 people, or 29.3% of all clients, reported having a physical disability (Black & Maples 1998).

The data collected through the National Information Management System for open employment services for people with disabilities show that 13.3 % (3,260 people) of the total 24,590 clients in 1996–1997 reported physical disability (Anderson & Golley 1998)

It should be mentioned that these estimates only include people known to the administrators or service providers. CSDA services are not 'entitlement' services (as social security payments are) but are limited by supply. Further, they have been historically shaped by the expressed needs of different groups and different service approaches that may have developed in different parts of Australia. Hence, these data provide information on service usage and do not reflect prevalence of particular disability groups.

3 Issues relating to operational definitions and approaches to estimating prevalence

Advocates for people with a disability, service providers, people responsible for policy and planning of disability programs, administrators of legislation on the rights of people with a disability, clinicians and statisticians are all interested in 'measuring' disability for different purposes (AIHW 1994). Operational definitions and approaches to measuring disability that are based on the ICIDH framework can vary substantially depending on the purpose for which they are developed. Operational definitions vary from broad, inclusive ones to narrow, specific ones (Chapter 1). As demonstrated in Chapter 2, variations in definition can affect estimates of prevalence.

Before calculating prevalence estimates it is necessary to examine some important conceptual and methodological factors. In this chapter these factors are divided into two groups. Section 3.1 discusses the issue of whether disability is defined in surveys on the basis of impairment or activity limitation. In practice, the operational definitions used in most disability surveys reflect a combination of impairment-focused and activity-focused approaches, with an emphasis on one or other component. Section 3.2 discusses other methodological factors affecting prevalence estimates. These include criteria for inclusion, such as minimum severity requirements, and data collection methods.

The final section of this chapter discusses the working definition of physical disability that is used in Chapter 4 as a basis for estimating prevalence.

3.1 Impairment-focused versus activity-focused approaches

Using an impairment-focused approach to identifying disability

As discussed previously (Table 2.1), using impairment-based screening questions in population surveys tends, in practice, to result in estimates of prevalence that are lower than those obtained using activity-based screening questions. This is probably because the number of impairments listed in survey screening questions is often limited. Also, in many cases, a person may have an activity limitation that is not obviously associated with an impairment.

If an impairment-focused approach is taken the particular impairments specified in the definition or screening questions may affect the prevalence rates estimated—a short list of specific impairments is likely to result in a lower estimate than a more comprehensive list.

Another consideration is whether impairment is identified by medical examination or self-report. Impairment may be identified by a health professional, as the effect of a health condition on the structure or function of body parts and organ systems. More commonly in disability surveys, the presence of impairment is reported by survey respondents.

Respondents may report impairments that would not be confirmed by medical assessment, or may fail to report impairments that would be identified by medical assessment.

Assessment of impairment has been widely used as one of the main eligibility criteria for compensation, disability benefits and other entitlement programs in Australia. The eligibility criteria of the Department of Family and Community Services, the Department of Veterans' Affairs and Commonwealth Employees Rehabilitation and Compensation (COMCARE) reflect a strict medical basis for assessment of impairment.

Using an activity-focused approach to identify disability

As was discussed in Section 1.3, the functional assessment approach to measuring disability appeared almost two decades before the release of the first version of the ICIDH and has been developed over several decades. The approach focuses on the activity dimension of the draft ICIDH–2. A main feature of this approach is the measurement of a range of activity limitations without necessarily considering associated impairments or disabling conditions. In some cases the impairment causing an activity limitation may not be obvious. In population surveys people may report activity limitations without knowing what impairments or health conditions underlie them.

As can be seen from the international estimates of prevalence presented in Table 2.1, using broad disability (activity limitation) screening questions in surveys seems to result in higher prevalence estimates than those obtained using impairment-based questions.

As for impairment-based approaches, the scope of the list of activities used to identify disability can affect prevalence estimates. The same problem occurred in assessment of impairment. The number of people reporting activity limitations or impairments increases with the number of activities or impairments in a survey pick-list. Longer activity or impairment pick-lists tend to produce higher prevalence rates. Because of this it is often difficult to compare the results of different surveys and studies.

This problem can be demonstrated by the ABS disability surveys. The 1993 survey contained three new screening questions about activity limitations, restrictions and effects of long-term conditions, in addition to the 12 screening questions contained in the 1988 survey. The inclusion of these three questions resulted in an increase in the estimated disability prevalence rate of 256,000 people, or 1.5% of the population (AIHW analysis of ABS disability survey data).

Associations between impairment, activity limitation and participation

The associations between health conditions and the impairment, activity and participation dimensions of the draft ICIDH–2 are complex. A given health condition may result in a variety of impairments, and a single impairment may be caused by a combination of health conditions. An impairment or health condition may lead to a number of different activity limitations or participation restrictions, and an activity limitation or participation restriction could be associated with a number of different impairments or health conditions (Badley & Lee 1987a; WHO 1980).

The ICIDH is not a system for classifying people. Rather, its three dimensions are used to classify the 'attributes or experience' of disability and 'situations or circumstances' in which people with a disability find themselves (WHO 1997). An individual may have several impairments, activity limitations and participation restrictions, the associations between which may not be clear.

Some efforts have been made to investigate relationships between disorders, impairments and activity limitations. For example, Badley and her colleagues conducted a series of analyses looking at the relationship between underlying condition, impairment and activity limitations based on the British Survey of People with Physical Impairment and Disability in 1969 (Badley & Lee 1987a; Badley & Lee 1987b; Badley et al. 1987).

Badley and Lee (1987a) used the survey data on impairment (or 'functional limitation'—derived from tests of motor capacity) and activity limitation (or 'disability'—derived from questions about performance of self-care activities) to explore relationships between impairment and activity limitation. Using factor analysis to explore groupings of variables they concluded that impairments could be considered in four groups—three to do with upper extremity function (manipulative functions, movements of the arm, and the ability to lift objects) and one concerning lower extremity function. Results of the analysis suggested that these impairment groups were correlated with limitations in specific self-care activities (disabilities), with particular associations reflecting the parts of the body involved.

Further, Badley et al. (1987) investigated the relationship between underlying health condition and impairment profile (again using the four impairment groups). Three groups of conditions, expected to result in different impairment profiles, were used in the analysis: conditions affecting control (e.g. stroke, multiple sclerosis), mechanical performance (e.g. arthritis), and energy levels (e.g. cardio-respiratory conditions). There was a greater similarity of impairment profile between conditions within groups than between groups. This was interpreted as supporting the proposition that, for people with physical disability, there are three general patterns of impairment profile, reflecting these three groups of underlying conditions.

However, activity limitation profiles did not closely reflect the grouping of underlying conditions as impairment profile did. A suggested explanation for this was that it may be the effect of an impairment on overall body functioning, rather than its physical location or biochemical nature, that determines the activity limitation profile. Also, not only individual impairments, but also the combinations in which they occur, may affect the nature of activity limitation experienced (Badley & Lee 1987b).

The authors suggest that these relationships between underlying condition, impairment and activity limitation may have implications for developing simpler approaches to describing the consequences of disease. A large number of different conditions may give rise to a relatively few impairments, and these relatively few impairments may lead to limitation in a wide variety of activities. Thus, impairment mediates between the underlying disease and the resultant activity limitation.

3.2 Other factors affecting estimates of prevalence

Self-reported versus observed disability

Data on disability in the general population are usually derived from self-reported information collected through population surveys that use a set of screening questions about impairments and/or activity limitations to identify disability. There has been growing acceptance of self-reported measures of health as a valid way of obtaining health status data. Such measures have been found to be a good predictor of relative mortality risks among older Australians (McCallum et al. 1994).

However, estimates of disability based on self-report data may vary because respondents interpret survey questions differently. People of different age or sex, or with different cultural, language and educational backgrounds, can have different perceptions of disability. Self-reported disability measures do not provide comparable measures for populations that do not share common standards and assumptions about good health (Mathers 1997). Nevertheless, most of the variation in self-reported disability that is due to changing perceptions and standards affects reporting at the very mild end of the disability spectrum (Mathers 1991, 1996). People appear to have interpreted the survey questions relating to assistance with activities of daily living in a similar way over the three ABS disability surveys (AIHW 1997).

Prevalence estimates may also be affected by the actual questions asked, the wording of questions and the procedure by which information is collected (e.g. personal interview, phone interview, questionnaire).

In some cases the results of self-reporting may be affected by the purpose of the reporting. For instance, a person who is seeking to establish entitlement to benefits or services may tend to over-state his or her condition(s). However, as information provided in the context of population surveys does not have a direct outcome for the individual, respondents are less likely to over- or under-state their health conditions.

Registration data and service provision data collected by administrators often contain information on disability obtained by professional assessment. However, this information usually only covers people known to the administrators or service providers. Hence, these data provide information on those people using services, rather than the prevalence of disability in the general population.

Minimum severity requirement and other criteria

Variations in prevalence estimates may reflect factors such as whether the level of difficulty experienced or need for assistance was assessed, and whether there was a minimum requirement for 'severity' or duration of disability.

For instance, the broad definition of disability in the Commonwealth *Disability Discrimination Act 1992* contains no minimum requirement for severity or duration of disability. Rather, the Act covers people who presently have a disability, who had a disability that no longer exists, or to whom a disability is imputed.

In the ABS disability surveys, a minimum duration requirement of 6 months applies to the impairments, conditions, limitations and restrictions listed in the screening questions if they are to be considered to constitute 'disability'.

In contrast, the narrower definition used in the Commonwealth *Social Security Act 1991* requires, among other criteria, a minimum severity of 20% impairment which must be permanent or expected to last for more than two years. Prevalence estimates derived from data based on such an exclusive definition will represent a subset of the people with a disability who would be identified using broader, more inclusive definitions.

Using impairment or disabling conditions to describe underlying cause of disability

Either impairment or disabling condition can be used as the primary variable for explaining the underlying cause of disability. The distinction between the two approaches is subtle and complex. The United Nations DISTAT database shows that most international disability

surveys use disabling condition rather than impairment (Chamie 1995). In many cases a person may have an activity limitation that is not obviously associated with an impairment, but the disease or disorder underlying the activity limitation may be more easily identified. Thus, in population surveys, people may be unable to specify a particular impairment, but may describe a disabling condition, disorder or injury.

In the ABS disability surveys people with a disability, as defined by the survey, were asked to specify their disabling conditions. The conditions were recorded using codes adapted from the ICD–9 (see Section 2.2). As well as the ABS disability survey, major administrative disability data sources in Australia, such as the client data of CentreLink, Department of Employment, Education, Training and Youth Affairs and the Commonwealth Rehabilitation Service, have also used a classification of health conditions as a basis for so-called 'disability groupings'.

The current impairment dimension of the ICIDH does not accommodate the experience of disease, disorder and injury, though they are implied in the definition of impairment by the words 'in the context of health condition'. This feature causes some practical problems when classifying disability data. Information about disease or disorder associated with activity limitations or participation restrictions cannot be readily classified within the current ICIDH. This may explain why the ICD classification is more commonly used for classifying underlying conditions associated with disability.

The mixed use of the two classifications (ICIDH and ICD) in classifying impairment has resulted in some difficulties in disability data classifications and groupings. For example, the ABS grouping of disabling conditions (ABS 1996) uses two types of classification: impairment groups and disabling condition groups. The two types of classification overlap, both conceptually and in terms of data items. As mentioned in Chapter 2, the broad impairment grouping is based on information from the survey screening questions that are a mixed set of impairment, disorder, disabling condition and activity limitation.

3.3 An operational definition of physical disability

Earlier sections of this report have critically reviewed existing definitions and estimates of physical disability. This section discusses the desirable features of an operational definition.

Table 3.1 provides working definitions for a number of terms that have appeared in the first three chapters of this paper. While the terms may be used differently by some authors, it is important to clarify the sense in which they will be used in the remainder of this report.

Table 3.1: Working definitions of terms relating to disability, as used in this paper

Term	Working definition
Disability	An umbrella term meaning negative experience in any one or more of the draft ICIDH–2 dimensions (i.e. an impairment, activity limitation or participation restriction).
Health condition	A disease, disorder or injury, regardless of its exterior manifestation.
Disabling condition	A disease, disorder or event that leads to impairment, activity limitation or participation restriction.
	In the context of the 1993 ABS disability survey, a disabling condition is a disease, disorder or event that had lasted or was likely to last for six months or more, or had produced a long-term effect, resulting in one or more of the limitations, restrictions or impairments used to identify disability (ABS 1996).
Functional (ability or limitation)	Relating to functioning at the body, the person or the society level (depending on the context in which it is used).
	In the context of functional assessment measures 'functional limitation' generally means a limitation of functioning at the person level (i.e. equivalent to activity limitation). It is also commonly used at the body level to mean impairment of body parts and organ systems.
Draft ICIDH–2 dimensions	
Impairment	(In the context of health condition) A loss or abnormality of body structure or of a physiological or psychological function.
Activity	(In the context of health condition) The nature and extent of functioning at the level of the person. Activities may be limited in nature, duration and quality.
Participation	(In the context of health condition) The extent of a person's involvement in life situations in relationship to impairments, activities, health conditions and contextual factors. Participation may be restricted in nature, duration and quality.
Context	Includes the features, aspects, attributes of, or objects, structures, human-made organisations, service provision, and agencies in, the physical, social and attitudinal environment in which people live and conduct their lives.
1980 ICIDH dimensions	
Impairment	(In the context of health experience) Any loss or abnormality of psychological, physiological or anatomical structure or function.
Disability	(In the context of health experience) Any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being.
Handicap	(In the context of health experience) A disadvantage for a given individual, resulting from an impairment or a disability, that limits or prevents the fulfilment of a role that is normal (depending on age, sex, and social and cultural factors) for that individual.

Sources: Adapted from literature cited in Chapters 1 and 2.

The terms physical impairment, physical activity limitation, and physical disability are concepts that are not clearly defined in the literature.

As discussed previously (Section 1.3), there is substantial variation in the definition and scope of the terms 'physical impairment' and 'physical disability' as used in some international documents. In Australian legislation and administrative documents these terms are not generally defined. However, it is important to develop a clear operational definition of physical disability as a basis for prevalence estimations.

In Australia, disability groups tend to reflect a broad categorisation of disability on the basis of underlying impairment, disabling condition or cause. The concept of a disability group also implies similar activity limitations and common needs related to underlying impairments or disabling conditions. When defining disability groups for the purpose of prevalence estimation the issue is whether the grouping of information about disability experience should be based primarily on impairment, activity limitation or participation

restriction, or a combination. The classifications used in current data collections often start with, or focus on, impairments and disabling conditions. Hence, the classification of disability groups reflects a mainly impairment-focused approach.

This approach to defining disability groups is consistent with the provision of information that can be used to tailor service provision. This is because, to provide appropriate services it is relevant to know not just what activities people have difficulty with, but also why and how. If somebody has difficulty moving about outside the house because of a physical impairment (e.g. paraplegia) they are likely to need different support to someone who has difficulty moving around outside the house because of a sensory, intellectual or psychiatric impairment.

We classify our functions or activities as physical, intellectual or sensory based on what parts of ourselves we use to do the activity (e.g. if we use parts of our body the activity is physical, if we use our mind/cognitive abilities the activity is intellectual, etc.). There is no other obvious way to label an activity as 'physical' or otherwise. For this reason complex activities (e.g. driving) are difficult to label—because we use many different parts of ourselves, many different abilities, in combination. Therefore, to identify 'physical disability' it may be more appropriate to take an approach based largely on factors operating at the body level (i.e. corresponding to the impairment dimension of the ICIDH–2).

However, if such an approach is taken, some means of identifying a 'physical impairment' must be developed. Looking at classifications in common use (e.g. in existing data collections) there seem to be no unifying characteristics that can form the basis of an operational definition. The difficulty of defining 'physical impairment' has tended to be solved by simply compiling lists of impairments deemed to be 'physical' (e.g. United Nations DISTAT database and expert report recommendation).

If an activity-based approach, rather than an impairment-based approach, was to be used to define disability groups, a division based on types of activities (e.g. 'communication', 'mobility') might be more appropriate than the current body-centred groups ('physical', 'intellectual', etc.).

Participation, the third dimension of the draft ICIDH–2, is to do with functioning at society level. It seems unlikely that information on participation restrictions could be used to identify disability as 'physical' or otherwise. There is also the practical consideration that, in Australia, information collected on participation restrictions is generally less comprehensive than information collected on impairments and activity limitations. Therefore, the participation dimension probably does not currently provide a good basis for defining disability groups.

Further research is needed to investigate the associations between the three dimensions of disability experience. A better understanding of the associations might lead to the development of an approach to defining disability groups that combines elements of the three ICIDH–2 dimensions (Section 3.1).

It seems, at this stage, most feasible to define physical disability as disability associated with a physical impairment. Physical activity limitations may also be used to identify physical disability, but should be defined as limitations in performing simple activities that are clearly associated with physical (rather than intellectual, sensory, etc.) abilities.

The operational definition of physical disability developed in Section 4.1 and used for prevalence estimation is based largely on a list of physical impairments (and disabling conditions) that is in line with significant international and Australian classifications. However, although an impairment-based approach is used to delimit the physical disability group, a person is only counted as having a physical disability if they have reported an

activity limitation or participation restriction, as well as a physical impairment or disabling condition. In this way the estimation procedure incorporates information on all three draft ICIDH–2 dimensions.

4 Estimates of the prevalence of physical disability in Australia

This chapter discusses the method developed by the AIHW for estimating the prevalence of physical disability using the ABS 1993 Survey of Disability, Ageing and Carers. Estimates of the prevalence of physical disability, at national and state or territory level, are presented.

4.1 The AIHW method of estimating prevalence of physical disability

Our main purpose in estimating prevalence rates for particular disability groups is to provide statistical measures that may be used as broad indicators of need for services—disability support, rehabilitation, prevention and mainstream services. It is desirable that the estimates should also provide information that can be used to facilitate the removal of social and economic barriers that can affect a person's full participation in community life.

As prevalence estimates will be derived using the ABS 1993 Survey of Disability, Ageing and Carers, the method used to delineate disability groups must be applicable to the survey data. The method must also be in line with the ICIDH conceptual framework and reflect the common understanding of disability groups—both in Australia and in the international literature previously discussed—and the use of disability information, in the field.

As outlined in Section 3.3, the AIHW method for estimating the prevalence of physical disability (the 'AIHW method') uses a classification approach—a listing of physical impairments and disabling conditions—to delimit the physical disability group. The ABS survey has extensive information on impairment and disabling condition. Limited information on 'physical' activity limitations (i.e. activities clearly associated with physical abilities) obtained through the screening questions will also be used.

In line with a multidimensional approach to disability, only people who report an activity limitation or participation restriction as well as a physical impairment or disabling condition are retained in the physical disability group. In the sense that it incorporates these different aspects of the disability experience, the AIHW method reflects the common understanding of the disability group concept (see discussion in Section 1.6).

The AIHW method uses a list of physical impairments and disabling conditions that is quite broad in scope, in line with a number of internationally significant definitions and classifications (Table 1.2). Sensory impairments have not been included in the physical category, as they are in some classifications (e.g. UN 1988a). However, this is in line with the CSDA 'target' impairment groups, in which sensory impairments are identified as a separate group (AIHW 1998). The physical category includes the subcategories circulatory, respiratory, arthritis, other musculoskeletal, neurological, and 'other physical'. Speech impairments and disabling conditions are included in the sensory disability group (for the full list of codes of physical impairments and disabling conditions see Appendix A; for detailed AIHW classification of other disability groups see AIHW 1997).

The AIHW method and ABS disability survey data

As the 1993 ABS disability survey is to be used as the basis for calculating prevalence estimates it is necessary to discuss some important features of the survey data before we describe the AIHW method in detail.

As outlined in Section 2.2, the survey used a list of 15 screening questions about disabling conditions, impairments, activity limitations and participation restrictions, to identify people with a disability (Box 2.1). One of the screening questions asked people about 'any other condition' resulting in restriction, with a prompt card listing five conditions including arthritis, asthma and heart disease. Particular conditions reported in response to this question were coded using ICD–9 codes and recorded under the data item 'all disabling conditions'.

The screening questions were designed to capture a broad spectrum of people potentially experiencing some level of disability. Thus, the operational definition of disability used in the survey was relatively broad and inclusive. People who responded positively to one or more of the screening questions were then asked further questions about activity limitations, participation restrictions and need for help.

The screening questions provide only limited information about physical impairments and disabling conditions, and omit specific mention of some significant impairments and disabling conditions, such as cardiovascular and respiratory disorders. There are only two items relating to physical impairment—'lacking full use of arms or fingers' and 'lacking full use of feet or legs' (Table 2.2). Because of the limited information the screening questions provide, the AIHW method also draws on information on disabling conditions from other parts of the survey to delineate the physical disability group.

The screening questions include two items that, arguably, relate to physical activity limitation—'difficulty gripping or holding small objects' and 'restriction in physical activities or doing physical work'. 'Difficulty gripping or holding small objects' suggests limitation in performing simple activities, likely to be caused by a physical impairment. Information from this screening question is therefore used in the delimitation of the physical disability group. The question about 'restriction in physical activities or doing physical work' is much broader, and is likely to have been designed to 'catch' a broad range of people who might have a disability rather than to identify people with 'physical' disability particularly. Restrictions in physical activity and physical work could be caused by a wide range of physical and non-physical impairments. Therefore, information from this question is used in a more limited way in the delimitation of the physical disability group (see 'step one' in the following section).

Information on activity limitations and participation restrictions from other parts of the survey is also used in the estimation of physical disability prevalence.

In summary, the AIHW method uses the ABS survey broad definition of disability (based on response to screening questions) as a starting point. People with a physical disability are then identified using combined information from the screening questions, reported disabling conditions, and questions about activity limitations, participation restrictions and the need for assistance. The ABS has published estimates of the proportion of people with a disability identified as having a physical impairment, via their response to the screening questions, and the proportion of people with a disability who reported a physical 'main disabling condition' (Table 2.2; ABS 1993b, 1996). However, the ABS has not specifically produced prevalence estimates for different disability groups based on the survey data.

The AIHW method of prevalence estimation in detail

The AIHW method of estimating prevalence consists of two steps. Step one selects people who reported one or more physical impairments, disorders or disabling conditions, either in response to the screening questions or through subsequent questions on disabling conditions. This step defines a fairly broad group of people that is then narrowed down in step two by applying a 'filter'—only people who have reported limitations or restrictions in one or more activities of daily or social life are retained in the group.

Step one: identifies 'physical' impairments, disabling conditions and/or activity limitations

This step uses information about physical impairments, physical disabling conditions and/or 'physical' activity limitations from responses to the screening questions and from responses to survey questions about disabling conditions.

A person is initially included in the physical disability group if:

- a positive response was made by or for them to one or more of the following screening questions:
  'incomplete use of arms or fingers', 'incomplete use of feet or legs', 'difficulty gripping or holding things'; and/or
- a positive response was made by or for them to one or more of the 15 screening questions **and** one or more physical impairments or disabling conditions was reported (for detailed codes for physical impairments and disabling conditions see Appendix A); or
- a positive response was made by or for them to one of the following screening questions:
  'blackouts, fits, or loss of consciousness', 'disfigurement or deformity', 'restriction in physical activities or doing physical work', **and** the person's disability could not be assigned to any disability group on the basis of answers to other screening questions or reported disabling conditions (for detailed AIHW classification of other disability groups see AIHW 1997).

Step two: focuses on people with some activity limitations

After step one, an activity limitation 'filter' is applied. Only people who have reported any one or more of a list of activity limitations and participation restrictions (via their response to certain survey questions) remain in the physical disability group (for the full list of questions see Appendix B). Step two is used to produce estimates of prevalence that can be related to two or three dimensions of the draft ICIDH–2 framework—impairment, plus activity limitation and/or participation restriction. The same list of activity limitations and participation restrictions will be used consistently in the estimation of other disability groups. Thus step two is a means of standardising the definition of disability across disability groups, so that prevalence estimates are readily comparable.

The prevalence of severe or profound handicap among people who reported one or more physical impairments or disabling conditions is also presented for comparison with estimates previously calculated for intellectual disability (Wen 1997).

Limitations of the 1993 ABS disability survey data

It should be noted, however, that there are some limitations in the disability survey data concerning the questions used as a basis for the activity limitation 'filter'.

The survey questions on limitations and restrictions are not exhaustive. Also, they focus more heavily on activities that have a strong component of physical functioning, rather than activities associated with other types of functioning and ability (e.g. intellectual, psychiatric). This issue may need to be considered when comparing estimates of physical disability with estimates of other disability groups based on the ABS survey data.

People in establishments were asked fewer questions than were people in households. Therefore, it is possible that some people in establishments are excluded by the activity limitation 'filter' because of the less extensive set of questions. Similarly, questions about activity limitations and participation restrictions were not asked in respect of children aged 0–4, so many children who satisfied the criteria of step one may have been excluded by the 'filter' in step two. Only children for whom a positive answer was given to the screening question about 'receiving treatment or medication for a long-term condition or ailment and still restricted' would pass through the activity limitation 'filter', as this question forms part of the 'filter' (Appendix B).

Measures of prevalence

The measures of prevalence used in this chapter include survey estimates of prevalence rate (unstandardised estimates), standardised prevalence ratios (SPR) and standardised prevalence rates. Unstandardised estimates based on main disabling condition, all disabling conditions and the AIHW method (as described above) will all be presented in tables but the discussion will focus on estimates obtained using the AIHW method.

The unstandardised overall prevalence rate is effectively the weighted mean of the rate at each age. The weights used are the numbers of people at each age in the population being studied. If the prevalence rates of two populations with quite different age structures are compared, the weights used will be quite different and this may give misleading results. If a standardised measure is not used, differences in prevalence rate may largely reflect different population age structures.

The SPR is used to compare prevalence rates between populations with different age structures. In the following sections, SPR is used to compare prevalence rates in different States and Territories, and between sub-populations defined by country of birth and Indigenous status.

The SPR, adapted from the standardised mortality ratio (e.g. Pollard 1983), is an indirectly age-standardised measure of relative prevalence. Because there are relatively few people with physical disability in small jurisdictions and in some population groups, and even fewer in each five-year age group within those sub-populations, calculation of reliable age-specific prevalence rates is not usually possible. Hence, a direct age-standardised measure that applies the age-specific prevalence rates of the study populations to a standard population is not appropriate.

The SPR overcomes this problem to some extent. It can be used as a single index of overall prevalence that permits meaningful comparison between relatively small population groups, adjusting for the different age structures of the subgroups being considered. Nevertheless, caution should be exercised in interpreting estimates containing high relative standard errors.

The SPR was calculated separately for males and females though some estimates are presented in terms of persons. In general terms, SPR = O/E, where O is the observed number of cases in a study population group (in this case, a population subgroup), and E is the expected number of cases, obtained by applying the age-specific prevalence rates in the

standard population (in this case the total Australian population) to the actual age structure of the study population group*. A ratio of 1 indicates no difference between the population subgroup and the total Australian population. A ratio of less than 1 indicates a lower level of prevalence, and a ratio of more than one indicates a higher level of prevalence than the total Australian population.

The SPR can be used to calculate indirectly standardised prevalence rates, by multiplying the SPR for the study population by the prevalence rate of the standard population. In this report, indirectly standardised rates are calculated by multiplying the SPR for a particular sub-population by the national prevalence rate.

For the comparison of prevalence rates between different population groups 95% confidence intervals were calculated. If the confidence intervals of two rates overlapped, the rates were deemed not to be significantly different from each other.

It is worth noting that SPR is used only for comparison of relative prevalence of different populations. The ratio and the indirectly age-adjusted rate do not reflect the actual prevalence within a given population. Unstandardised survey estimates should be used for estimating need or demand for disability services.

4.2 Estimates at national level

Main disabling condition

Tables 4.1 and 4.2 present estimates based on reported physical 'main disabling condition'. Main disabling condition is the condition identified by the survey respondent with multiple conditions as the one causing the most problems. Where only one condition is reported, this is coded as the main disabling condition (ABS 1993b). The estimates include people who answered positively to any one or more of the screening questions and had a physical main disabling condition. (For the full list of codes for physical impairments/disabling conditions see Appendix A.)

In 1993, there were 1,726,200 people, 9.8% of the Australian population, with a disability who reported a physical main disabling condition. Of these, 423,100 people, or 2.6% of the total Australian population aged 5 years and over, also had a severe or profound handicap, meaning that they always or sometimes needed personal assistance or supervision with activities of daily living (self-care, mobility or verbal communication). Arthritis was the most commonly reported physical main disabling condition, followed by other musculoskeletal disorders (Tables 4.1 and 4.2).

For people aged under 65 years, there were 1,045,600 people with a disability, or 6.7% of Australians in that age group, reporting a physical main disabling condition. Of these, 210,300 people, or 6.7% of Australians aged 5 to 64 years, had a severe or profound handicap (Tables 4.1 and 4.2).

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* The SPR was calculated as follows:

$SPR = \Sigma D_{ai} / \Sigma(R_s i \times P_{ai})$

Where D_{ai} = the number of disabilities in age group *i* for the study population

R_{si} = the age-specific prevalence rate in age group *i* for the appropriate total Australian population

P_{ai} = the study population in age group *i*.

Table 4.1: People with a disability: physical 'main disabling condition' by disability status, by sex and age, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Main disabling condition plus severe or profound handicap							
Males							
5–64[(b)]	8.4	11.4	17.2	30.2	10.7	20.9	98.9
65+	15.4	8.5	14.5	*7.7	*5.1	14.4	65.7
Total	*23.9*	*20.0*	*31.7*	*37.9*	*15.7*	*35.4*	*164.5*
Females							
5–64[(b)]	*6.5	15.3	29.1	26.1	13.6	20.7	111.4
65+	26.6	12.3	57.3	19.6	12.5	19.0	147.2
Total	*33.1*	*27.7*	*86.4*	*45.7*	*26.0*	*39.7*	*258.6*
Persons							
5–64[(b)]	14.9	26.8	46.3	56.4	24.2	41.7	210.3
65+	42.0	20.8	71.8	27.3	17.5	33.4	212.9
Total	**56.9**	**47.6**	**118.1**	**83.6**	**41.8**	**75.1**	**423.1**
Main disabling condition							
Males							
0–64	69.9	106.5	102.1	155.0	41.4	70.0	544.9
65+	80.7	41.8	89.8	35.3	*8.0	33.4	288.9
Total	*150.6*	*148.3*	*191.9*	*190.3*	*49.3*	*103.4*	*833.8*
Females							
0–64	42.0	111.7	126.0	126.3	43.8	50.9	500.7
65+	84.0	30.4	186.4	42.4	17.9	30.6	391.7
Total	*126.1*	*142.1*	*312.4*	*168.7*	*61.7*	*81.5*	*892.4*
Persons							
0–64	112.0	218.2	228.1	281.3	85.1	120.9	1,045.6
65+	164.7	72.2	276.2	77.6	25.9	64.0	680.6
Total	**276.7**	**290.4**	**504.3**	**359.0**	**111.0**	**184.9**	**1,726.2**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.
(b) Severity of handicap was not determined for children aged 0–4 years with a disability.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table 4.2: People with a disability: physical 'main disabling condition' by disability status, by sex and age, as a percentage of the Australian population of that sex and age, Australia 1993[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Main disabling condition plus severe or profound handicap							
Males							
5–64[(b)]	0.1	0.2	0.2	0.4	0.1	0.3	1.4
65+	1.7	1.0	1.6	*0.9	*0.6	1.6	7.4
Total	*0.3*	*0.2*	*0.4*	*0.5*	*0.2*	*0.4*	*2.0*
Females							
5–64[(b)]	*0.1	0.2	0.4	0.4	0.2	0.3	1.6
65+	2.3	1.1	4.9	1.7	1.1	1.6	12.6
Total	*0.4*	*0.3*	*1.1*	*0.6*	*0.3*	*0.5*	*3.1*
Persons							
5–64[(b)]	0.1	0.2	0.3	0.4	0.2	0.3	1.5
65+	2.1	1.0	3.5	1.3	0.9	1.6	10.4
Total	**0.3**	**0.3**	**0.7**	**0.5**	**0.3**	**0.5**	**2.6**
Main disabling condition							
Males							
0–64	0.9	1.3	1.3	2.0	0.5	0.9	6.9
65+	9.1	4.7	10.2	4.0	*0.9	3.8	32.7
Total	*1.7*	*1.7*	*2.2*	*2.2*	*0.6*	*1.2*	*9.5*
Females							
0–64	0.5	1.5	1.6	1.6	0.6	0.7	6.5
65+	7.2	2.6	16.0	3.6	1.5	2.6	33.7
Total	*1.4*	*1.6*	*3.5*	*1.9*	*0.7*	*0.9*	*10.1*
Persons							
0–64	0.7	1.4	1.5	1.8	0.5	0.8	6.7
65+	8.0	3.5	13.5	3.8	1.3	3.1	33.3
Total	**1.6**	**1.6**	**2.9**	**2.0**	**0.6**	**1.0**	**9.8**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.
(b) Severity of handicap was not determined for children aged 0–4 years with a disability.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

All disabling conditions

The prevalence of a particular disability group will be underestimated if only main disabling conditions are considered. The 1993 disability survey shows that 61.4% of people with a disability reported more than one disabling condition, and about 30% reported conditions related to two or more disability groups, such as intellectual, psychological, physical and sensory (ABS 1996:28, Table 20).

A comparison of the prevalence of various conditions reported by people in the 1993 survey showed that prevalence estimates based on all reported conditions were substantially higher than estimates based on main disabling conditions only (AIHW 1995). Therefore, estimates of the prevalence of physical disability presented in the remainder of this chapter have been derived on the basis of all disabling conditions, or using the AIHW method described in Section 4.1 (except in Section 4.3, where estimates based on main disabling condition are presented for different jurisdictions).

Tables 4.3 and 4.4 show estimates of prevalence based on all reported disabling conditions. The estimates include people who answered positively to any of the selected 'physical' screening questions, and/or reported a physical disabling condition, whether or not this was their main disabling condition. As people could report more than one physical disabling condition, a person can be counted in more than one of the categories of physical disabling conditions. Therefore, the sum of the six categories may be greater than the total number. (In Tables 4.1 and 4.2 the total number of people reporting a physical main disabling condition is the sum of the six categories, since each person can have only one main disabling condition).

About 2,350,300 people, or 13.3% of Australians, reported one or more physical impairments or disabling conditions in 1993. Of these, about 620,400 people, or 3.8% of Australians, also had a severe or profound handicap (Figure 4.1, Tables 4.3 and 4.4). The figure of 3.8% (620,400 people) is comparable with the AIHW estimate of intellectual disability prevalence—178,000 or 1.0% of the Australian population—which included only those people with a severe or profound handicap (Wen 1997).

Using the AIHW method (i.e., selecting people who reported one or more physical impairments or disabling conditions and one or more activity limitations), the prevalence of physical disability in 1993 was 11.9%, or 2,099,600 people. Arthritis was the most frequently reported condition (5.1% of the total population) (Figure 4.1, Tables 4.3 and 4.4). The prevalence of physical disability for Australians aged under 65 years was 7.6%, or 1,190,000 people.

Table 4.3: People with a disability: physical 'all disabling conditions' by disability status, by sex and age, Australia 1993 ('000)[a]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
All disabling conditions plus severe or profound handicap							
Males							
5–64[b]	25.9	33.6	37.0	42.5	24.9	79.9	140.9
65+	49.7	18.8	42.9	17.5	10.4	65.8	103.7
Total	*75.6*	*52.4*	*79.9*	*60.0*	*35.3*	*145.7*	*244.6*
Females							
5–64[b]	27.8	37.8	54.9	38.4	32.2	84.6	153.3
65+	122.3	31.7	125.0	45.2	23.2	156.8	222.5
Total	*150.0*	*69.5*	*179.9*	*83.6*	*55.3*	*241.3*	*375.9*
Persons							
5–64[b]	53.7	71.5	91.8	80.8	57.1	164.5	294.2
65+	172.0	50.4	167.9	62.7	33.6	222.6	326.2
Total	**225.6**	**121.9**	**259.8**	**143.6**	**90.7**	**387.1**	**620.4**
AIHW method (all disabling conditions plus activity limitation)							
Males							
0–64	149.7	156.2	182.5	176.8	61.2	232.1	625.1
65+	209.5	71.6	172.7	67.5	19.0	158.9	384.9
Total	*359.2*	*227.8*	*355.2*	*244.3*	*80.2*	*391.1*	*1,010.0*
Females							
0–64	111.9	164.2	209.9	143.2	62.4	205.7	564.9
65+	294.4	72.8	326.7	87.3	35.3	267.4	524.7
Total	*406.3*	*237.0*	*536.6*	*230.6*	*97.7*	*473.0*	*1,089.5*
Persons							
0–64	261.6	320.4	392.4	320.0	123.6	437.8	1,190.0
65+	504.0	144.4	499.4	154.8	54.3	426.3	909.6
Total	**765.6**	**464.8**	**891.8**	**474.8**	**177.9**	**864.1**	**2,099.6**
All disabling conditions							
Males							
0–64	168.1	183.3	203.7	196.9	73.3	258.7	726.0
65+	221.5	75.8	191.6	70.8	19.7	170.4	417.9
Total	*389.6*	*259.1*	*395.3*	*267.6*	*92.9*	*429.1*	*1,143.9*
Females							
0–64	125.1	189.5	231.4	159.5	76.8	222.6	649.5
65+	312.0	75.4	347.5	89.3	35.4	273.7	556.9
Total	*437.1*	*264.9*	*578.9*	*248.8*	*112.2*	*496.3*	*1,206.4*
Persons							
0–64	293.2	372.8	435.2	356.4	150.1	481.3	1,375.5
65+	533.5	151.2	539.1	160.1	55.1	444.1	974.8
Total	**826.7**	**524.1**	**974.2**	**516.5**	**205.2**	**925.4**	**2,350.3**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.
(b) Severity of handicap was not determined for children aged 0–4 years with a disability.

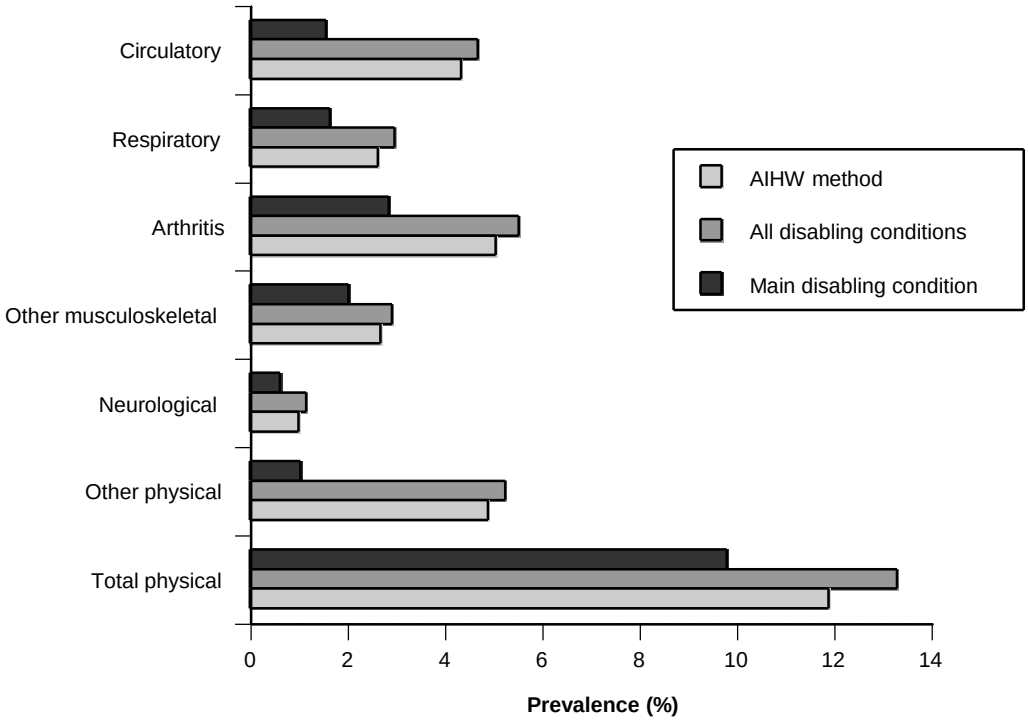
Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table 4.4: People with a disability: physical 'all disabling conditions' by disability status, by sex and age, as a percentage of the Australian population of that sex and age, Australia 1993[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
All disabling conditions plus severe or profound handicap							
Males							
5–64[(b)]	0.4	0.5	0.5	0.6	0.3	1.1	1.9
65+	5.6	2.1	4.9	2.0	1.2	7.5	11.7
Total	*0.9*	*0.6*	*1.0*	*0.7*	*0.4*	*1.8*	*3.0*
Females							
5–64[(b)]	0.4	0.5	0.8	0.5	0.5	1.2	2.2
65+	10.5	2.7	10.7	3.9	2.0	13.5	19.1
Total	*1.8*	*0.8*	*2.2*	*1.0*	*0.7*	*2.9*	*4.6*
Persons							
5–64[(b)]	0.4	0.5	0.6	0.6	0.4	1.2	2.1
65+	8.4	2.5	8.2	3.1	1.6	10.9	15.9
Total	**1.4**	**0.7**	**1.6**	**0.9**	**0.6**	**2.4**	**3.8**
AIHW method (all disabling conditions plus activity limitation)							
Males							
0–64	1.9	2.0	2.3	2.2	0.8	2.9	7.9
65+	23.7	8.1	19.6	7.6	2.2	18.0	43.6
Total	*4.1*	*2.6*	*4.0*	*2.8*	*0.9*	*4.5*	*11.5*
Females							
0–64	1.5	2.1	2.7	1.9	0.8	2.7	7.4
65+	25.3	6.3	28.1	7.5	3.0	23.0	45.1
Total	*4.6*	*2.7*	*6.1*	*2.6*	*1.1*	*5.3*	*12.3*
Persons							
0–64	1.7	2.1	2.5	2.1	0.8	2.8	7.6
65+	24.6	7.1	24.4	7.6	2.7	20.8	44.4
Total	**4.3**	**2.6**	**5.1**	**2.7**	**1.0**	**4.9**	**11.9**
All disabling conditions							
Males							
0–64	2.1	2.3	2.6	2.5	0.9	3.3	9.2
65+	25.1	8.6	21.7	8.0	2.2	19.3	47.3
Total	*4.4*	*3.0*	*4.5*	*3.0*	*1.1*	*4.9*	*13.0*
Females							
0–64	1.6	2.5	3.0	2.1	1.0	2.9	8.5
65+	26.8	6.5	29.9	7.7	3.0	23.5	47.8
Total	*4.9*	*3.0*	*6.5*	*2.8*	*1.3*	*5.6*	*13.6*
Persons							
0–64	1.9	2.4	2.8	2.3	1.0	3.1	8.8
65+	26.1	7.4	26.3	7.8	2.7	21.7	47.6
Total	**4.7**	**3.0**	**5.5**	**2.9**	**1.2**	**5.3**	**13.3**

(a) Estimates marked with ** has an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.
(b) Severity of handicap was not determined for children aged 0–4 years with a disability.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.



Source: Tables 4.2 and 4.4.

Figure 4.1: People with a physical disability: physical disabling conditions by method of calculation used, as a percentage of total population, Australia 1993

Country of birth

Country of birth was grouped into three categories: Australia, other English-speaking countries, and non-English-speaking countries. Other English-speaking countries were the United Kingdom, Ireland, Canada, the United States of America, South Africa and New Zealand, according to the ABS standard classification of countries for social statistics (ABS 1990). About 39,000 people in the general population and 4,300 people with physical disability for whom birthplace was not recorded were excluded from the comparative analysis.

For all people with a physical disability, defined using the AIHW method, the distribution was 74.6% (1,563,400 people) born in Australia, 11.0% (230,800 people) in other English–speaking countries and 14.4% (301,000 people) in non-English-speaking countries (Table 4.5).

Comparing the distribution of physical disability with the distribution of the general population, the proportion of people with a physical disability born in Australia was lower than the expected 77.8%. The proportions of people born in other English-speaking countries and non-English-speaking countries were higher than their representation in the general population (9.0% and 13.2%, respectively). The proportions were calculated using data in Table A4.1 (Appendix C).

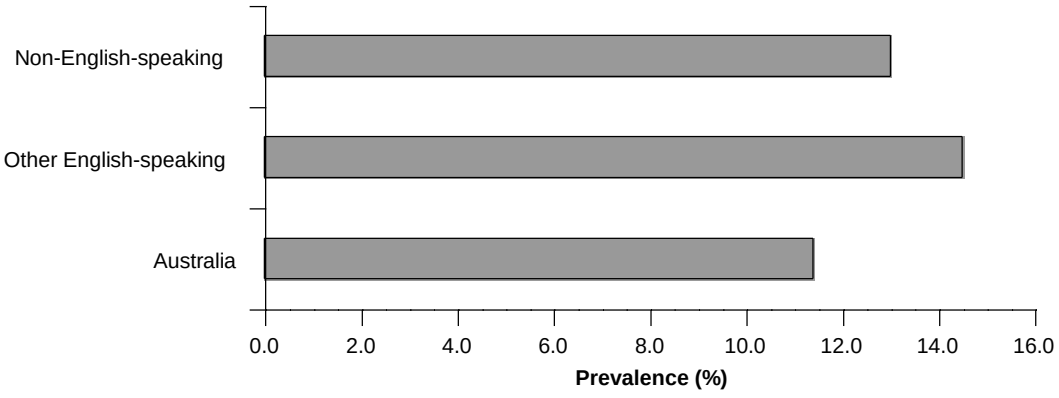
Table 4.5: People with a disability: physical disability calculated using AIHW method, by sex and country of birth, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
Australia	253.7	180.1	258.8	173.2	61.7	280.3	744.6
Other English-speaking	43.1	25.7	40.8	24.6	*7.0	45.7	110.5
Non-English-speaking	61.9	21.7	55.2	46.4	11.3	64.3	153.7
Females							
Australia	304.3	190.2	406.9	166.4	77.9	347.8	818.8
Other English-speaking	48.1	25.3	58.1	23.9	9.1	57.0	120.4
Non-English-speaking	52.5	21.3	70.1	40.1	10.2	66.2	147.3
Persons							
Australia	558.0	370.4	665.7	339.5	139.6	628.1	1,563.4
Other English-speaking	91.2	51.0	98.9	48.4	16.1	102.7	230.8
Non-English-speaking	114.4	43.0	125.2	86.5	21.5	130.5	301.0

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Unstandardised estimates using the AIHW method show that the overall prevalence rate for people born in Australia (11.4%) was lower than for people born overseas. The prevalence rates for people born in other English-speaking countries was 14.5%, and for people born in non-English-speaking countries was 13.0% (Figure 4.2, Table 4.6).



Source: Table 4.7.

Figure 4.2: Prevalence of physical disability (AIHW method) by country of birth, as a percentage of total population of that country of birth, Australia 1993

Prevalence rates were lowest for people born in Australia in the sub-categories of circulatory and other physical conditions. People from non-English-speaking countries had the lowest rates of respiratory conditions. The three populations had similar rates of neurological conditions (Table 4.6).

Table 4.6: People with a disability: physical disability calculated using AIHW method, by sex and country of birth, as a percentage of the Australian population of that sex and country of birth, Australia 1993[(a)]

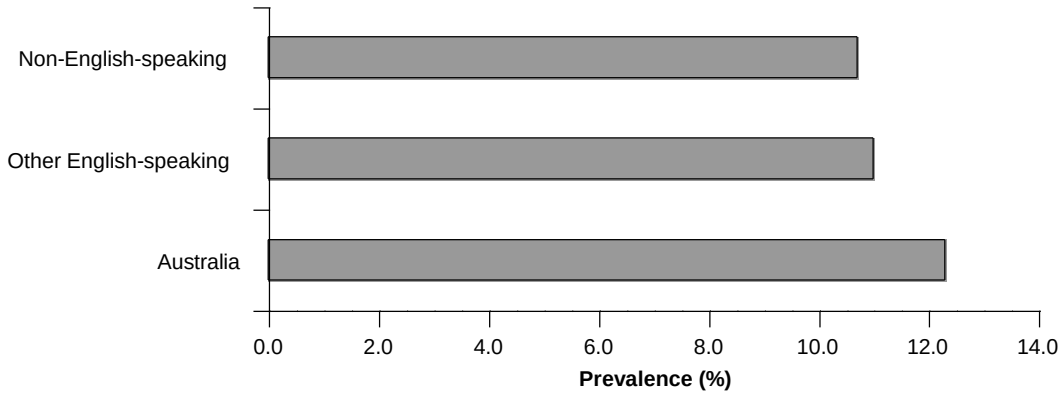
	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
Australia	3.7	2.7	3.8	2.6	0.9	4.1	11.0
Other English-speaking	5.4	3.2	5.1	3.1	*0.9	5.7	13.8
Non-English-speaking	5.3	1.8	4.7	3.9	1.0	5.5	13.0
Females							
Australia	4.4	2.8	5.9	2.4	1.1	5.0	11.9
Other English-speaking	6.1	3.2	7.4	3.0	1.2	7.2	15.3
Non-English-speaking	4.6	1.9	6.1	3.5	0.9	5.8	12.9
Persons							
Australia	4.1	2.7	4.9	2.5	1.0	4.6	11.4
Other English-speaking	5.7	3.2	6.2	3.0	1.0	6.5	14.5
Non-English-speaking	4.9	1.9	5.4	3.7	0.9	5.6	13.0

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

However, standardised prevalence ratios allow a comparison of prevalence rates between the three population groups that takes into account their different age structures.

In contrast to the unstandardised estimates, the SPR shows that people born in Australia were more likely to report physical disability than those born overseas. The ratio for the Australia-born population was 1.04, higher than for people born overseas. The ratios for people born in non-English-speaking countries and people born in other English-speaking countries was 0.90 and 0.92, respectively (Figure 4.3, Table 4.7).



Source: Table 4.7.

Figure 4.3: Prevalence of physical disability (AIHW method) by country of birth, standardised rates, Australia 1993

Table 4.7: People with a disability: physical disability calculated using AIHW method, by age and country of birth, standardised prevalence ratio and standardised prevalence rate, Australia 1993[(a)(b)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Standardised prevalence ratio							
Under 65 years							
Australia	1.05	1.11	1.06	0.98	1.07	1.03	1.05
Other English-speaking	0.89	0.85	0.98	0.87	*0.77	1.01	0.91
Non-English-speaking	0.90	0.51	0.78	1.14	0.82	0.89	0.87
All ages							
Australia	1.03	1.06	1.06	1.02	1.07	1.01	1.04
Other English-speaking	0.93	1.09	0.88	0.83	0.81	0.97	0.92
Non-English-speaking	0.93	0.65	0.85	1.05	0.79	0.95	0.90
Standardised prevalence rate[(c)]							
Aged under 65 years							
Australia	1.8	2.3	2.7	2.0	0.9	2.9	8.0
Other English-speaking	1.5	1.7	2.5	1.8	*0.6	2.8	6.9
Non-English-speaking	1.5	†1.1	2.0	2.3	0.6	2.5	†6.6
Total Australians	*1.7*	*2.1*	*2.5*	*2.1*	*0.8*	*2.8*	*7.6*
All ages							
Australia	4.5	2.8	5.3	2.7	1.1	5.0	12.3
Other English-speaking	4.0	2.9	4.5	2.2	0.8	4.8	11.0
Non-English-speaking	4.0	†1.7	†4.3	2.8	0.8	4.7	†10.7
Total Australians	*4.3*	*2.6*	*5.1*	*2.7*	*1.0*	*4.9*	*11.9*

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

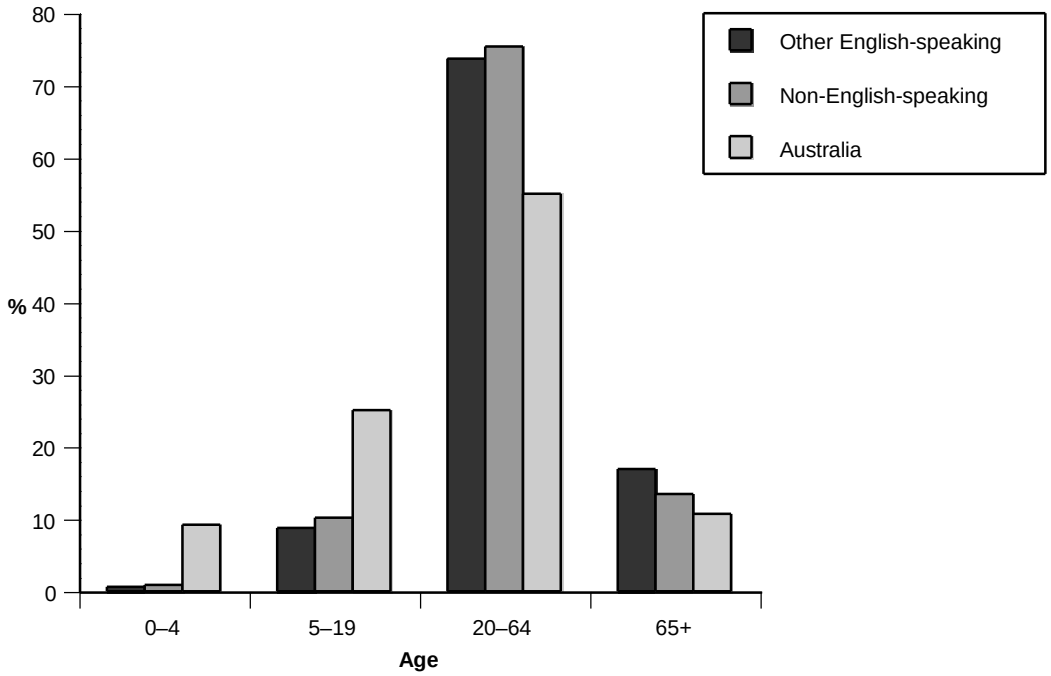
(b) Estimates marked with † indicate that the rates are significantly different from the rates for all Australians.

(c) Standardised prevalence rate was calculated by multiplying the SPR for a particular sub-population group by the national prevalence rate.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

The contrast between the unstandardised estimates and the SPR can be mainly attributed to marked differences in age structure between the three population groups. Overseas-born populations are more concentrated in the later age groups, in which rates of physical disability are higher. Therefore, unstandardised estimates suggest that overall prevalence rates are higher than for the Australian-born population, when age-specific rates are in fact lower.

People aged 65 and over made up much higher proportions of the population for people born in other English-speaking countries (16.9%) and non-English-speaking countries (13.5%) than for people born in Australia (10.7%). The most striking contrasts were in the 20–64 age group. In the two overseas-born populations, the proportion of people in this age group was about 75%, as compared with 55% in the Australia-born population (Figure 4.4, Table 4.8).



Source: Table 4.8.

Figure 4.4: Population age structure by country of birth, Australia 1993

Differences in standardised prevalence rates may be partly explained by the routine health screening of applicants for immigration to Australia, which may result in lower prevalence of disability among the overseas-born population (Black et al. 1998; Madden et al. 1996). As screening is likely to pick up some impairments and conditions more easily than others, this might also explain the variation in prevalence rates within individual sub-categories of physical disability. In addition, different cultural groups may have different attitudes towards and perceptions of disability, which could influence levels of reporting.

Table 4.8: Population age structure: country of birth, by sex and age, Australia 1993[(a)]

	Country of birth				
Age	Not known	Australia	Other English-speaking	Non-English-speaking	Total Australians
Male					
0–4	0.0	9.5	0.6	1.2	7.5
5–19	84.2	26.0	8.2	10.8	22.5
20–64	3.5	55.7	74.8	74.9	59.9
65+	12.4	8.8	16.4	13.1	10.1
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Female					
0–4	0.0	8.9	0.7	0.7	7.1
5–19	82.9	24.2	9.4	9.5	21.1
20–64	0.6	54.3	72.6	75.8	58.6
65+	16.5	12.5	17.4	14.0	13.2
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Persons					
0–4	0.0	9.2	0.6	0.9	7.3
5–19	83.4	25.1	8.8	10.2	21.8
20–64	1.7	55.0	73.7	75.4	59.3
65+	14.9	10.7	16.9	13.5	11.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) See Table A4.1 (Appendix C) for population numbers.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Indigenous origin

This section explores the feasibility of estimating the prevalence of physical disability in the Indigenous population, and comparing prevalence rates between the Indigenous and non-Indigenous populations.

The 1993 ABS disability survey collected information about Indigenous status. However, for about 199,300 people, Indigenous status was not stated or not known. Those people have been excluded from the comparative analysis. There were 250,800 Indigenous people identified in the survey (Table A4.2).

Gething (1995) discussed cultural differences in the understanding of the concept of disability. These differences contribute to the difficulty of collecting meaningful data on levels of disability in the Indigenous population in some regions of Australia. It is also difficult to derive reliable disability statistics for Indigenous people from the survey data because of large sampling errors associated with small estimates.

Unstandardised survey estimates indicate that the overall prevalence of physical disability is much lower in the Indigenous population than the non-Indigenous population. The prevalence rate of 11.4% for non-Indigenous Australians was more than two times higher than that for Indigenous Australians (4.9%) (Table 4.9).

Table 4.9: People with a disability: physical 'all disabling conditions' by Indigenous status, by disability status and age, as a percentage of the Australian population of that Indigenous status and age, Australia 1993[(a)]

	Number ('000)		Percentage of population	
Age	**Indigenous**	**Non-Indigenous**	**Indigenous**	**Non-Indigenous**
AIHW method (all disabling conditions plus activity limitation)				
0–4	**0.9	10.1	**2.3	0.8
5–14	**1.5	96.9	**2.6	3.9
15–19	**0.0	39.6	**0.0	3.1
20–29	**0.6	113.3	**1.2	4.1
30–44	*2.2	276.6	*5.0	6.8
45–64	*6.5	623.9	*28.0	18.0
65+	**0.4	796.2	**14.1	41.8
Total 0–64	*11.8*	*1,160.3*	*4.7*	*7.6*
Total 15–64	*9.3*	*1,053.3*	*6.3*	*9.1*
Total	**12.2**	**1,956.5**	**4.9**	**11.4**
All disabling conditions				
0–4	*2.6	27.3	*6.8	2.2
5–14	*2.0	108.6	*3.2	4.4
15–19	**0.0	47.3	**0.0	3.8
20–29	**0.6	142.0	**1.2	5.1
30–44	*3.1	318.6	*6.8	7.8
45–64	*6.7	698.4	*29.2	20.1
65+	**0.4	856.1	**14.1	44.9
Total 0–64	*15.1*	*1,342.2*	*6.1*	*8.8*
Total 15–64	*10.4*	*1,206.2*	*7.0*	*10.4*
Total	**15.5**	**2,198.3**	**6.2**	**12.8**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

By excluding people aged 65 and over, the difference in prevalence rate between the two population groups is greatly reduced (Table 4.9). This may be partly because people aged 65 and over made up only about 1% of the Indigenous population. In contrast, people aged 65 and over accounted for about 11% of the non-Indigenous population (Table 4.10).

The Indigenous population had a much younger age structure than the non-Indigenous population. Over 50% of all Indigenous people were aged under 20 years and about 46% were aged 20 to 64 years. In contrast, 28% of non-Indigenous people were aged under 20 years and about 60% were aged 20 to 64 years (Table 4.10).

Using the SPR for people aged under 65 years there was no difference in the prevalence of physical disability between the Indigenous and non-Indigenous populations (Table 4.11). However, the lack of any significant difference may reflect the fact that estimates for Indigenous people are subject to very high relative standard errors. Furthermore, the prevalence estimates for the Indigenous population could be affected by factors other than age structure and relative standard errors. Therefore, reliable comparison of prevalence rates between Indigenous and non-Indigenous Australians is not possible.

Table 4.10: Population age structure: Indigenous status, by sex and age, Australia 1993[(a)]

		Indigenous status		
Age	**Not stated**	**Non-Indigenous**	**Indigenous**	**Total Australians**
Male				
0–4	0.2	7.5	14.4	7.5
5–19	20.8	22.3	33.6	22.5
20–64	20.2	60.4	51.2	59.9
65+	58.8	9.8	0.8	10.1
Total	*100.0*	*100.0*	*100.0*	*100.0*
Female				
0–4	0.0	7.1	16.4	7.1
5–19	16.2	21.0	35.9	21.1
20–64	8.4	59.5	46.2	58.6
65+	75.5	12.4	1.5	13.2
Total	*100.0*	*100.0*	*100.0*	*100.0*
Persons				
0–4	0.1	7.3	15.4	7.3
5–19	17.8	21.7	34.8	21.8
20–64	12.5	60.0	48.7	59.3
65+	69.7	11.1	1.1	11.6
Total	**100.0**	**100.0**	**100.0**	**100.0**

(a) See Table A4.2 for population numbers.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table 4.11: People with a disability aged under 65: physical 'all disabling conditions' by disability status, by Indigenous status, standardised prevalence ratio, Australia 1993[(a)]

	Indigenous	**Non-Indigenous**
AIHW method (all disabling conditions plus activity limitation)	0.93	0.99
All disabling conditions	1.00	0.99

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Age and sex pattern of prevalence

Total Australians

The overall prevalence of physical disability was higher for females than for males. (Tables 4.2 and 4.4; for detailed estimates see Tables A4.3, A4.4, A4.7, A4.8, A4.11 and A4.12). Among people with severe or profound handicap overall prevalence rates were also higher for females. This pattern was more marked for those aged 65 and over (Tables 4.2 and 4.4; for detailed estimates see Tables A4.5, A4.6, A4.9 and A4.10).

Prevalence estimates for specific categories of disabling condition show that females had higher rates of arthritis than males. This pattern was consistent across all age groups (Tables 4.2 and 4.4). For people with a severe or profound handicap prevalence rates in

circulatory conditions and arthritis were higher for females than for males (Tables 4.2 and 4.4).

Country of birth

Overall prevalence rates of physical disability were higher for females than for males among people born in Australia. There were no significant sex differences in prevalence rates among people born in other English-speaking countries and non-English-speaking countries (Table 4.6).

Australian-born females had higher prevalence rates than Australian-born males in three of the six sub-categories of physical disabling conditions (circulatory, arthritis and other physical). Males had higher rates of other musculoskeletal disorders (Table 4.6).

There were no significant sex differences in prevalence rates of the sub-categories of physical disabling conditions among people born in other English-speaking countries and non-English-speaking countries (Table 4.6).

Associated disabilities

Table 4.12 and Figure 4.5 present data on other disabilities reported by people with physical disabilities, based on reported main disabling condition, all disabling conditions and the AIHW method.

The 'other' category contains all conditions that were not readily classified into a particular disability group (for the detailed groupings of impairments and disabling conditions see AIHW 1997, Table A1.2). Over 60% of people with physical disability aged under 65 years, and more than 70% of those aged 65 years and over, also had an 'other' disability.

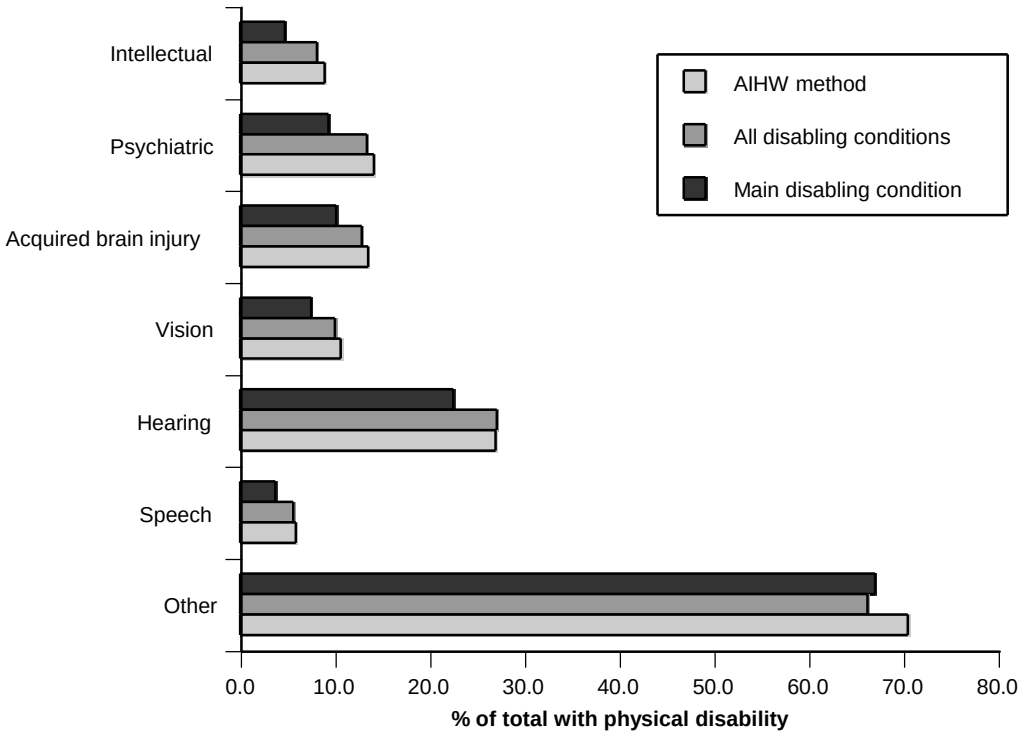
Of conditions that were classified into particular disability groups, hearing impairment was the most commonly associated disability for people with physical disability of all ages. Psychiatric disorders and acquired brain injury were the second most commonly reported disabilities, each accounting for about 14% of people with physical disability (Table 4.12).

Table 4.12: People with a disability: physical disability by age, by other reported disabilities or impairments, Australia 1993[a]

Reported other disabilities or impairments	Main disabling condition		All disabling conditions		AIHW method (all disabling conditions plus activity limitation)	
	Number ('000)	% of total	Number ('000)	% of total	Number ('000)	% of total
Under 65 years						
Intellectual	47.1	4.5	113.8	8.3	110.1	9.2
Psychiatric	78.3	7.5	158.8	11.5	144.9	12.2
Acquired brain injury	97.3	9.3	157.6	11.5	142.6	12.0
Vision	35.9	3.4	68.8	5.0	62.4	5.2
Hearing	150.4	14.4	246.5	17.9	206.0	17.3
Speech	36.3	3.5	75.2	5.5	67.4	5.7
Other	661.7	63.3	858.0	62.4	804.2	67.6
Total physical disability group[b]	*1,045.6*	*100.0*	*1,375.5*	*100.0*	*1,190.0*	*100.0*
65 years and over						
Intellectual	35.4	5.2	77.9	8.0	77.4	8.5
Psychiatric	83.3	12.2	155.9	16.0	151.8	16.7
Acquired brain injury	78.5	11.5	144.7	14.8	141.3	15.5
Vision	93.8	13.8	167.6	17.2	161.5	17.8
Hearing	238.0	35.0	390.9	40.1	360.1	39.6
Speech	28.6	4.2	57.7	5.9	56.7	6.2
Other	495.4	72.8	697.9	71.6	675.7	74.3
Total physical disability group[b]	*680.6*	*100.0*	*974.8*	*100.0*	*909.6*	*100.0*
All ages						
Intellectual	82.5	4.8	191.7	8.2	187.5	8.9
Psychiatric	161.6	9.4	314.8	13.4	296.6	14.1
Acquired brain injury	175.8	10.2	302.2	12.9	283.9	13.5
Vision	129.7	7.5	236.5	10.1	223.9	10.7
Hearing	388.3	22.5	637.5	27.1	566.1	27.0
Speech	65.0	3.8	132.9	5.7	124.1	5.9
Other	1,157.1	67.0	1,555.9	66.2	1,480.0	70.5
Total physical disability group[b]	**1,726.2**	**100.0**	**2,350.3**	**100.0**	**2,099.6**	**100.0**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.
(b) This total is less than the sum of all other reported disabilities or impairments since a person may have more than one other disability or impairment

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.



Source: Table 4.12.

Figure 4.5: People with a physical disability: prevalence of other reported disabilities as a percentage of all people with physical disability, by method of calculation, Australia 1993

4.3 Estimates at State and Territory level

Unstandardised estimates

Unstandardised prevalence estimates show that, when only main disabling conditions are considered, two States had higher rates than the national average of 9.8%. South Australia had the highest rate (11.1%), followed by Victoria (10.6%). Rates for the Australian Capital Territory (8.6%) and the Northern Territory (5.1%) were well below the national average. Rates for the other States were similar to the national average (Tables 4.13, A4.13).

The prevalence of physical disability as defined by the AIHW method (physical 'all disabling conditions' plus activity limitation) was again highest in South Australia (13.9%)—two percentage points higher than the national average of 11.9%. The Northern Territory had the lowest rate (7.7%), about four percentage points lower than the national average. The rate for the Australian Capital Territory (10.0%) was well below the national average. New South Wales also had a lower rate (11.2%) than the national average. Rates for the other States were close to the national average (Tables 4.15 and A4.15, Figure 4.6).

Table 4.13: People with a disability: physical 'main disabling condition' by sex, by State or Territory, as a percentage of the population of that sex and State or Territory, Australia 1993[(a)(b)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
NSW	1.8	1.6	2.0	2.1	0.5	1.1	9.1
Vic	1.7	1.7	2.3	2.4	0.6	1.1	10.0
Qld	1.9	1.9	2.1	2.0	0.6	1.3	9.8
WA	1.3	1.3	2.0	2.4	*0.5	1.2	8.7
SA	1.8	2.1	3.0	2.3	*0.6	1.6	11.4
Tas	1.4	1.6	2.8	1.8	*0.6	1.2	9.4
ACT	*0.6	1.9	1.1	2.1	*0.5	1.2	7.3
NT	**0.7	**0.8	*1.2	**0.6	**0.6	**0.2	4.2
Females							
NSW	1.5	1.4	3.4	1.9	0.6	0.7	9.6
Vic	1.5	1.5	4.1	2.3	0.8	1.0	11.1
Qld	1.2	2.2	2.9	1.7	0.7	0.7	9.5
WA	1.4	1.5	3.4	1.6	*0.5	1.3	9.7
SA	1.3	1.8	3.9	1.8	0.9	1.2	10.8
Tas	1.7	1.1	5.0	1.5	*0.8	*0.8	10.9
ACT	1.5	1.3	2.9	2.0	0.9	1.3	9.9
NT	**0.8	**0.5	*1.7	*1.8	*0.4	*1.0	6.2
Persons							
NSW	1.7	1.5	2.7	2.0	0.5	0.9	9.3
Vic	1.6	1.6	3.2	2.3	0.7	1.1	10.6
Qld	1.6	2.1	2.5	1.8	0.7	1.0	9.6
WA	1.4	1.4	2.7	2.0	0.5	1.3	9.2
SA	1.6	1.9	3.5	2.0	0.7	1.4	11.1
Tas	1.5	1.3	3.9	1.6	0.7	1.0	10.1
ACT	1.0	1.6	2.0	2.0	0.7	1.2	8.6
NT	*0.8	*0.6	1.5	*1.2	*0.5	*0.6	5.1

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.
(b) See Table A4.13 for number estimates.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Prevalence rates based on physical disability reported among all disabling conditions, regardless of whether activity limitation was reported, were slightly higher than rates estimated using the AIHW method, but show similar patterns between States and Territories (Tables 4.14 and A4.14).

Table 4.14: People with a disability: physical 'all disabling conditions' by sex, by State or Territory, as a percentage of the population of that sex and State or Territory, Australia 1993[(a)(b)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
NSW	4.4	2.8	4.0	3.0	1.0	4.8	12.3
Vic	4.5	2.8	4.7	3.3	1.0	4.7	13.2
Qld	4.7	3.4	4.9	2.7	1.2	5.2	13.7
WA	3.7	2.7	4.1	3.0	0.9	4.5	12.7
SA	5.4	3.8	5.7	3.3	1.4	5.9	15.9
Tas	4.4	2.3	5.0	3.0	1.2	5.4	13.0
ACT	2.1	3.1	2.8	2.9	*0.9	3.8	10.3
NT	*1.9	*1.6	3.2	*1.8	*1.3	*2.7	9.3
Females							
NSW	5.2	2.9	6.5	2.8	1.2	5.2	12.9
Vic	5.5	2.9	6.9	3.0	1.2	6.3	14.6
Qld	4.1	3.7	5.9	2.8	1.5	4.8	13.3
WA	4.1	2.6	6.3	2.5	1.2	5.7	13.6
SA	5.5	3.1	7.6	2.9	1.5	7.0	15.1
Tas	4.8	2.3	7.5	2.0	1.3	6.6	14.1
ACT	3.9	2.5	5.3	3.3	1.4	5.7	12.8
NT	*1.9	*1.6	*3.0	*2.1	*1.3	3.3	8.1
Persons							
NSW	4.8	2.9	5.3	2.9	1.1	5.0	12.6
Vic	5.0	2.8	5.8	3.2	1.1	5.5	13.9
Qld	4.4	3.5	5.4	2.8	1.3	5.0	13.5
WA	3.9	2.6	5.2	2.7	1.0	5.1	13.1
SA	5.4	3.4	6.7	3.1	1.5	6.4	15.5
Tas	4.6	2.3	6.3	2.5	1.2	6.0	13.5
ACT	3.0	2.8	4.0	3.1	1.2	4.8	11.5
NT	1.9	1.6	3.1	1.9	*1.3	3.0	8.7

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.
(b) See Table A4.14 for number estimates.

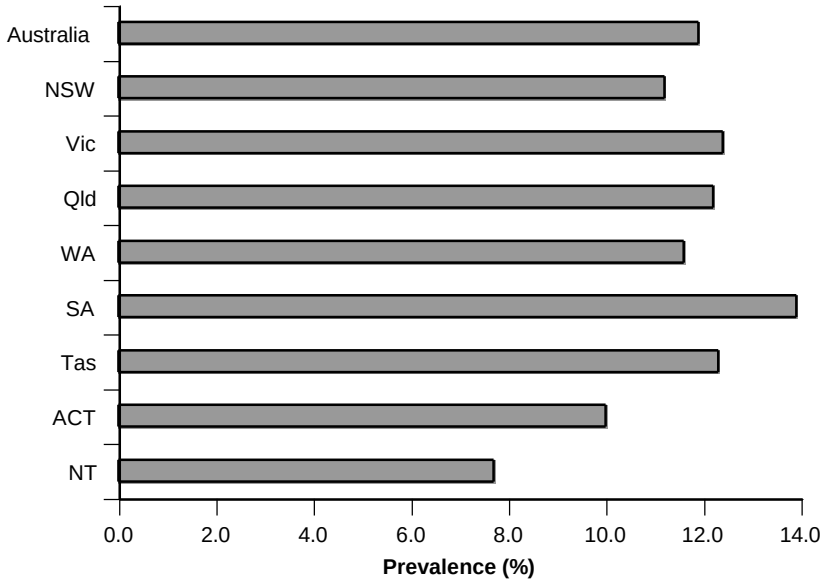
Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table 4.15: People with a disability: physical disability calculated using AIHW method, by sex, by State or Territory, as a percentage of the population of that sex and State or Territory, Australia 1993[(a)(b)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
NSW	4.0	2.5	3.6	2.7	0.9	4.2	10.7
Vic	4.2	2.3	4.2	3.0	0.9	4.3	11.6
Qld	4.5	2.9	4.5	2.5	1.0	4.9	12.2
WA	3.3	2.4	3.7	2.7	0.7	4.1	10.9
SA	5.0	3.4	5.3	3.1	1.2	5.6	14.3
Tas	4.0	2.0	4.6	2.7	1.1	4.9	12.0
ACT	1.8	2.7	2.5	2.3	0.7	3.4	8.5
NT	*1.7	*1.4	3.0	*1.8	*1.1	2.7	8.6
Females							
NSW	4.8	2.6	5.9	2.6	1.1	5.0	11.6
Vic	5.1	2.6	6.5	2.8	1.0	5.9	13.2
Qld	3.9	3.4	5.6	2.6	1.3	4.6	12.3
WA	3.8	2.2	5.9	2.3	1.0	5.4	12.3
SA	5.2	2.8	7.0	2.7	1.2	6.7	13.5
Tas	4.4	2.3	6.6	1.7	1.2	6.3	12.5
ACT	3.7	2.1	4.9	3.2	1.2	5.5	11.5
NT	*1.7	**0.8	*2.7	*1.6	**0.3	2.8	6.7
Persons							
NSW	4.4	2.6	4.7	2.7	1.0	4.6	11.2
Vic	4.7	2.5	5.3	2.9	1.0	5.1	12.4
Qld	4.2	3.1	5.0	2.6	1.1	4.8	12.2
WA	3.6	2.3	4.8	2.5	0.9	4.7	11.6
SA	5.1	3.1	6.2	2.9	1.2	6.1	13.9
Tas	4.2	2.1	5.6	2.2	1.1	5.6	12.3
ACT	2.7	2.4	3.7	2.7	0.9	4.4	10.0
NT	1.7	*1.1	2.9	1.7	*1.2	2.8	7.7

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.
(b) See Table A4.15 for number estimates.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.



Source: Table 4.15.

Figure 4.6: Prevalence of physical disability (AIHW method), all ages, by States and Territories, unstandardised estimates, Australia 1993

Unstandardised rates and SPR

The following comparisons focus on prevalence calculated using the AIHW approach.

As mentioned in Section 3.1, the unstandardised overall prevalence rate is the weighted mean of the rates for each age group within the population. A high overall prevalence rate may reflect high age-specific rates, or high representation within the population of particular age groups in which prevalence rates are higher, or a combination of both these factors.

Physical disabilities are more likely to occur among older people. In comparisons of unstandardised rates, States and Territories in which older people make up a relatively larger proportion of the population may have higher overall disability rates, although age-specific rates may be the same as, or even lower than, those in jurisdictions with younger population age structures.

Standardised prevalence ratios (SPRs) allow a more meaningful comparison of prevalence rates, by taking into account the different age structures of the jurisdictions. SPRs can be used to calculate indirectly age-adjusted prevalence rates, by multiplying the SPR for a particular State or Territory by the national prevalence rate of 11.9%.

Unstandardised rates and standardised rates (adjusted for age and sex) give two different pictures of the relative prevalence of physical disability in States and Territories whose population structures differ from the national average (Table 4.16). When unstandardised and standardised prevalence rates are compared, two broad patterns can be recognised.

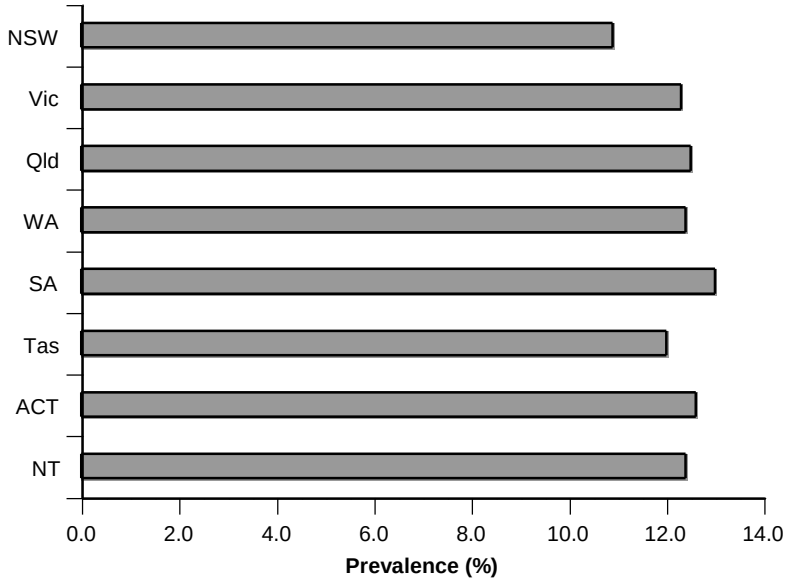
Table 4.16: People with a disability: physical disability calculated using the AIHW method, by State or Territory, by age, unstandardised prevalence rate, standardised prevalence ratio (SPR), and standardised prevalence rate[(a)], Australia 1993

	States and Territories								
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Under 65 years									
Unstandardised rate	6.7	7.9	8.4	8.2	8.5	7.4	7.4	6.3	7.6
SPR	0.87	1.03	1.12	1.10	1.08	0.97	1.05	0.98	1.00
Standardised rate	†6.6	7.8	†8.5	8.4	8.2	7.4	8.0	7.4	7.6
All ages									
Unstandardised rate	†11.2	12.4	12.2	11.6	†13.9	12.3	†10.0	†7.7	11.9
SPR	0.92	1.03	1.05	1.04	1.09	1.01	1.06	1.04	1.00
Standardised rate	†10.9	12.3	12.5	12.4	†13.0	12.0	12.6	12.4	11.9

† Rates are significantly different from the national rate.

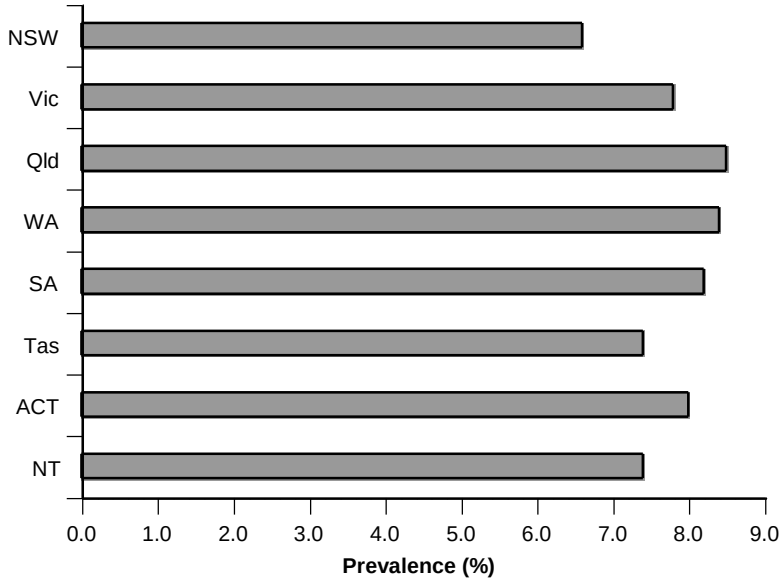
(a) Standardised prevalence rate was calculated by multiplying the SPR for a particular State or Territory by the national prevalence rate.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.



Source: Table 4.16.

Figure 4.7: Prevalence of physical disability (AIHW method), all ages, by States and Territories, standardised rates, Australia 1993



Source: Table 4.16.

Figure 4.8: Prevalence of physical disability (AIHW method), people aged under 65, by States and Territories, standardised rates, Australia 1993

First, States and Territories that have younger population age structures (i.e. high representation of younger people) than the national population tend to have unstandardised overall prevalence rates that are lower than the national average. In these jurisdictions, age-adjusted rates are likely to be higher than unstandardised rates.

Second, jurisdictions that have higher proportions of older people than the total population tend to have unstandardised prevalence rates higher than the national average, and age-adjusted rates are likely to be lower than unstandardised rates.

Examples of the first pattern are the Australian Capital Territory and the Northern Territory. These jurisdictions had younger age structures and lower unstandardardised prevalence rates than the national average. However, standardised rates for these jurisdictions were similar to the national average. This suggests that the lower unstandardised estimates were largely due to younger population age structure and that, overall, age-specific prevalence rates in these jurisdictions were similar to those for the total Australian population (Table 4.16).

The two Territories provide the most striking illustration of the effect that age structure can have on unstandardised rates. Although the Northern Territory had the lowest unstandardised prevalence rate, its SPR was similar to those of several other jurisdictions. Similarly, the Australian Capital Territory had the second lowest unstandardised rate, but its SPR was significantly higher than that of New South Wales and similar to those of several other jurisdictions (Table 4.16). Both Territories had very low proportions of older people in their populations. At a national level, the proportion of Australians aged 65 and

over was nearly twice and four times as high as in the Australian Capital Territory and the Northern Territory, respectively (Tables 4.17 and A4.16). Queensland had an unstandardised prevalence rate that was similar to the national average, despite its young population age structure. This suggests that high age-specific prevalence rates overrode the effect of young population structure. The high age specific prevalence rates were particularly evident in the younger age group, as indicated by an SPR of 1.12 for people aged under 65 years (Table 4.16).

The second pattern was seen in South Australia, Victoria and Tasmania. The proportions of people aged 65 and over in these three States were higher than that for all Australians. This may partly explain the higher unstandardised prevalence rate in South Australia in particular. When the effect of age structure was removed, the ratios for Victoria and Tasmania were similar to the national average while the ratio for South Australia was higher than the national average. Thus, the higher unstandardised rate of South Australia may reflect a combination of high age-specific prevalence and a high proportion of older people.

Only New South Wales had prevalence rates lower than the national average using both measures, despite the fact that the proportion of people aged 65 and over in New South Wales (12.2%) was slightly higher than the national average (11.6%). This suggests that, overall, the effect of lower age-specific prevalence rates in New South Wales outweighed the effect of an older population age structure. The low prevalence rates were particularly evident among people under the age of 65 years, with an SPR of 0.87 for this age group (Table 4.16).

Standardised prevalence rates for the population aged under 65 provided a slightly different picture for some States and Territories. Queensland had a significantly higher rate (8.5%) than the national average and New South Wales. New South Wales had a very low rate of 6.6%, significantly below the national average and all other States and Territories except for the Northern Territory. In the remaining States and Territories the SPR for people aged under 65 years was similar to that for all ages (Table 4.16).

Table 4.17: Population age structure: States and Territories, by sex and age, Australia 1993[(a)]

	States and Territories								
Age	**NSW**	**Vic**	**Qld**	**WA**	**SA**	**Tas**	**ACT**	**NT**	**Australia**
Male									
0–4	7.6	7.5	7.6	7.7	7.0	7.7	7.8	9.8	7.5
5–19	22.0	22.0	23.4	23.4	21.5	23.5	24.2	25.3	22.5
20–64	60.0	60.3	59.3	60.2	60.0	58.2	62.3	62.1	59.9
65+	10.5	10.2	9.7	8.8	11.5	10.6	5.7	2.8	10.1
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Female									
0–4	7.1	7.0	7.2	7.4	6.5	7.2	7.5	10.2	7.1
5–19	20.7	20.6	22.2	22.3	20.1	22.1	23.3	25.6	21.1
20–64	58.3	59.0	58.3	59.0	58.3	57.0	61.7	61.2	58.6
65+	13.8	13.5	12.3	11.4	15.1	13.7	7.6	3.0	13.2
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Persons									
0–4	7.3	7.2	7.4	7.5	6.8	7.4	7.7	10.0	7.3
5–19	21.4	21.3	22.8	22.8	20.8	22.8	23.7	25.5	21.8
20–64	59.1	59.6	58.8	59.6	59.1	57.6	62.0	61.6	59.3
65+	12.2	11.9	11.0	10.1	13.3	12.2	6.6	2.9	11.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) See Table A4.16 for population numbers.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Appendix A

Physical impairment/disabling condition groupings

Table A1: AIHW physical impairment/disabling condition groupings, related to ABS screening questions and ICD codes

AIHW categories	ABS code	ICD code	Diseases, impairments and conditions
Circulatory diseases	401	413	Angina
	402	442	Aneurysm—other
	403	441	Aortic aneurysm
	404	440	Atherosclerosis, thickening of the arteries
	404	414.0	Coronary atherosclerosis, thickening of the arteries
	405	453.9	Blocked veins—unspecified
	406	425	Cardiomyopathy, cardiovascular disease not elsewhere specified
	406	429.2	Cardiovascular disease—other
	407	392–459	Diseases of circulatory system not elsewhere specified
	408	395	Diseases of aortic valve
	409	415–417	Diseases of the pulmonary circulation
	411	391	Rheumatic fever with heart involvement
	412	390	Rheumatic fever without mention of heart involvement
	413	455	Haemorrhoids/piles
	414	423–428	Heart disease—other
	414	429	Heart disease—ill-defined descriptions and complications
	415	401–405	High blood pressure/hypertensive disease
	416	458.9	Low blood pressure/hypotension
	417	410–414	Ischaemic heart disease not elsewhere specified
	419	420	Pericarditis—acute
	420	393–398	Rheumatic heart disease
	421	444	Thrombosis and embolism
	422	454	Varicose veins with ulcer, inflammation
	423	430–438	Cerebrovascular disease—other and ill-defined
Respiratory diseases	451	501	Asbestosis
	452	493	Asthma
	453	490–491	Bronchitis
	454	478.3–478.7	Diseases of larynx
	455	518	Other diseases of lung
	456	460–519	Diseases of respiratory system not elsewhere specified
	456	477.9	Sinusitis

(continued)

Table A1 (continued): AIHW physical impairment/disabling condition groupings, related to ABS screening questions and ICD codes

AIHW categories	ABS code	ICD code	Diseases, impairments and conditions
Respiratory diseases	457	492	Emphysema
	458	510	Empyema
	459	511	Pleurisy
	751	477	Allergic rhinitis
Arthritis (osteo and rheumatoid)	658	716	Arthritis
	669	715	Osteoarthrosis/osteoarthritis
	674	714	Rheumatoid arthritis
	676	719	Joint disorders, other and unspecified
Other musculoskeletal disorders	651	887	Amputation of arm(s)
	652	886	Amputation of finger(s)
	653	896	Amputation of foot
	654	887	Amputation of hand(s)
	655	897	Amputation of leg(s)
	656	895	Amputation of toe(s)
	657	720	Ankylosing spondylitis
	659	724	Back disorders, other and unspecified
	660	738.3	Chest and rib deformities
	661	738.1	Head—other deformities of
	662	738.2, 744.9	Neck—deformities of
	665	734–738	Limb deformities
	666	724.2	Lumbago
	667	756	Musculoskeletal deformities
	668	710–739	Diseases of the musculoskeletal system and connective tissue not elsewhere specified
	670	730	Osteomyelitis
	671	733.0	Osteoporosis
	672	727.0	Repetitive strain injury (RSI, tenosynovitis)
	673	725–729	Rheumatism, excluding the back, not elsewhere specified
	675	724.3	Sciatica
	757	Search question	Disfigurement or deformity
Neurological	351	331.0	Alzheimer's disease
	353	324–326	Inflammatory diseases of the central nervous system not elsewhere specified
	353	333–358	Diseases of the central nervous system—unspecified
	353	740	Disorders of central nervous system—hereditary, congenital, degenerative

(continued)

Table A1 (continued): AIHW physical impairment/disabling condition groupings, related to ABS screening questions and ICD codes

AIHW categories	ABS code	ICD code	Diseases, impairments and conditions
Neurological (continued)			
	354	330–331	Cerebral degeneration
	356	348	Brain—other conditions
	363	323	Encephalitis, myelitis, encephalomyelitis
	364	345	Epilepsy
	367	357	Neuropathy—inflammatory and toxic
	367	356	Neuropathy
	369	320–322	Meningitis
	380	334	Spinocerebellar disease
Other physical diseases and conditions	355	343	Cerebral palsy
	360	344.2	Diplegia
	366	342	Hemiplegia
	370	344.3–344.5	Monoplegia
	371	335.2	Motor neuron disease
	372	340	Multiple sclerosis
	373	359	Muscular dystrophy
	374	344	Paralysis—other
	375	344.1	Paraplegia
	376	332	Parkinson's disease
	377	344	Quadriplegia
	663	Search question	Incomplete use of arms/fingers
	663	Search question	Difficulty gripping/holding things such as pen or cup
	664	Search question	Incomplete use of feet/legs
	704	741	Spina bifida

Appendix B

ABS 1993 disability survey questions on limitations and restrictions that constitute the 'filter' used in step two of the 'AIHW method'[(a)]

(within households)

Question number	Question wording	Population who could be asked depending on survey sequencing
Q41=1	Do you ever have difficulty to shower or bathe without help or supervision?	All aged 5+ with a disability (except those with 'hearing loss' only)
Q43=1	Do you ever have difficulty dressing without help or supervision, for example doing up shoe laces, buttons or zips?	As above
Q45=1	Do you ever have difficulty eating a meal without help or supervision?	As above
Q47A=1	Do you have any difficulty controlling your bladder?	As above
Q47B=1	Do you have any difficulty controlling your bowel?	As above
Q49=1	If shaded box marked for any 'personal care' task (Q40–Q48)	As above
Q61=3	Do you ever need help or supervision when going to, or getting around, a place away from home?	As above
Q62=1	Do you ever find it difficult to go somewhere away from home without help or supervision?	As above
Q63=3	Do you ever need help to move about the house because of your condition?	As above
Q64=1	Do you ever find it difficult to move about the house without help or supervision?	As above
Q66=1	If shaded box marked for any 'mobility' task (Q61–65)	As above
Q95=1	If shaded box marked for any 'communication' task (Q89–Q93)	All aged 5+ with a disability
Q111=1	If '1' in Q106 (having difficulty holding a book or magazine, or turning the pages) or '1' in Q109 (having difficulty reading	All aged 10+ with a disability
Q132=2	Aids used (Questions 113–130 relate to aids and equipment)	All aged 5+ with a disability
Q139=1, Q142=1	Changes made or needed to dwelling	As above
Q148=1	If shaded box marked for any 'health care' task (Q146 & Q147)	All aged 15+ with a disability
Q161=1 or 2	What makes it difficult for you to do these tasks (household chores) by yourself?	All aged 15+ with a disability, and all persons aged 60+
Q167=1 or 2	What makes it difficult for you to do these household chores by yourself?	As above
Q174=1 or 2	What makes it difficult for you to do these tasks (home maintenance) by yourself?	As above

Q180=1or 2	What makes it difficult for you to do these household chores by yourself?	As above
Q187=1 or 2	What makes it difficult for you to do these tasks (meal preparation) by yourself?	As above
Q193=1 or 2	What makes it difficult to prepare meals by yourself?	As above
Q198=1	If shaded box marked in Q196 or Q197 (financial management, writing letters)	As above
Q209=2	Is there any form of public transport that you could use?	All aged 5+ with a disability
Q210/212=1	Do you ever need help or supervision when using (the) public transport (that you can use)?	All aged 5+ with a disability/all persons aged 60+
Q211/213=1	(Does/do) your condition(s) make it at all difficult for you to use (the) public transport (that you can use)?	All aged 5+ with a disability/all persons aged 60+
Q223=1	As a result of your (age/condition(s)), is it difficult for you to get out of a car parked in a standard width parking space?	All aged 5+ with a disability and all persons aged 60+
Q239=2	If the other (person/people) in this household had to go away for a few days would you be able to look after yourself?	All aged 15+ with a disability and all persons aged 60+
Q242=1	Would you find it difficult to look after yourself?	As above
Q252=2	Are you able to use a standard telephone?	All aged 5+ with a disability and all persons aged 60+
Q258=1	Is the reason does not attend school because of condition(s)?	All aged 5–14 with a disability
Q268=1	On average, do you need at least one day a week off from (specify institution in Q261) because of your condition(s)?	All aged 5+ with a disability, attending education other than school
Q269=1	Do you have any difficulty at (specify institution in Q261) because of your condition(s)?	As above
Q273=1	Do you go to special school because of your condition(s)?	All aged 5+ with a disability who attend school
Q274=1	Do you have to attend special classes because of your condition(s)?	As above
Q275=1	On average, do you need at least one day a week off from school because of your condition(s)?	As above
Q276=1	Do you have any difficulty at school because of your condition(s)?	As above
Q293=1	(Does/do) your condition(s) prevent you from undertaking (further) study?	All aged 15+ with a disability, not currently studying
Q295=3	Does ... currently work in a job, business or farm?	All aged 15+ with a disability
Q318=1	(Does/do) your condition(s) restrict the type of hours you can work?	All aged 15+ with a disability, who currently work
Q319=1	Does/do) your condition(s) restrict the number of hours you can work?	As above
Q322=1	On average, do you need at least one day a week off from work because of your condition(s)?	As above
Q324=1	Was it necessary for your employer to provide any equipment, or make any arrangements for you, because of your condition(s)?	As above
Q328=1	(Does/do) your condition(s) make you permanently unable to work?	All aged 15+ with a disability, who are not currently working
Q341=1	Would your condition(s) restrict the type of job you could do?	As above
Q342=1	On average, would you need at least one day a week off from work because of your condition(s)?	As above
Q343=1	Would your condition(s) restrict the number of hours you could work?	As above

(a) The screening question relating to the use of long-term treatment or medication also forms part of the definition of disability.

Source: Madden et al. 1995.

Appendix C

Appendix tables

Table A4.1: Population: country of birth, by sex and age, Australia 1993

	Country of birth				
Age	**Not known**	**Australia**	**Other English-speaking**	**Non-English-speaking**	**Total Australians**
Male					
0–4	0	643,535	4,668	14,050	662,253
5–19	12,677	1,766,525	65,320	127,204	1,971,726
20–64	521	3,782,600	598,230	882,677	5,264,028
65+	1,861	595,494	131,367	154,086	882,809
Total	*15,059*	*6,788,154*	*799,585*	*1,178,017*	*8,780,816*
Female					
0–4	0	615,804	5,127	7,912	628,844
5–19	19,813	1,668,557	73,953	108,511	1,870,834
20–64	147	3,745,201	572,617	864,693	5,182,659
65+	3,949	863,546	137,051	159,357	1,163,900
Total	*23,909*	*6,893,108*	*788,748*	*1,140,473*	*8,846,237*
Persons					
0–4	0	1,259,339	9,795	21,962	1,291,097
5–19	32,490	3,435,082	139,273	235,715	3,842,560
20–64	668	7,527,801	1,170,847	1,747,370	10,446,687
65+	5,810	1,459,040	268,418	313,443	2,046,709
Total	**38,968**	**13,681,262**	**1,588,333**	**2,318,490**	**17,627,053**

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.2: Population: Indigenous status, by sex and age, Australia 1993

		Indigenous status		
Age	**Not stated**	**Non-Indigenous**	**Indigenous**	**Total Australians**
Male				
0–4	118	643,950	18,185	662,253
5–19	14,483	1,914,766	42,478	1,971,726
20–64	14,053	5,185,344	64,628	5,264,028
65+	40,979	840,876	954	882,809
Total	*69,633*	*8,584,936*	*126,245*	*8,780,816*
Female				
0–4	0	608,405	20,439	628,844
5–19	20,941	1,805,104	44,790	1,870,834
20–64	10,854	5,114,275	57,530	5,182,659
65+	97,840	1,064,217	1,842	1,163,900
Total	*129,635*	*8,592,001*	*124,601*	*8,846,237*
Persons				
0–4	118	1,252,355	38,624	1,291,097
5–19	35,424	3,719,870	87,268	3,842,560
20–64	24,907	10,299,619	122,158	10,446,687
65+	138,819	1,905,093	2,796	2,046,709
Total 0–64	60,449	15,271,844	248,050	15,580,344
Total 5–64	60,331	14,019,489	209,426	14,289,247
Total	**199,268**	**17,176,937**	**250,846**	**17,627,053**

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.3: People with a disability: physical 'main disabling condition' by sex and age, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
0–4	**0.0	9.3	**0.0	**0.1	**1.0	**1.8	12.3
5–14	*2.0	30.3	**0.0	*4.6	*3.9	*4.6	45.5
15–19	**0.0	*7.3	**0.7	*3.6	*2.1	**1.6	15.2
20–29	**1.0	14.8	*4.9	16.7	*5.0	13.0	55.4
30–44	*7.6	12.1	22.1	53.5	13.7	23.2	132.1
45–64	59.4	32.7	74.4	76.5	15.6	25.8	284.4
65+	80.7	41.8	89.8	35.3	*8.0	33.4	288.9
Total 0–64	69.9	106.5	102.1	155.0	41.4	70.0	544.9
Total 15–64	67.9	66.9	102.1	150.3	36.4	63.6	487.1
Total	*150.6*	*148.3*	*191.9*	*190.3*	*49.3*	*103.4*	*833.8*
Females							
0–4	**0.0	*5.6	**0.0	*2.0	**1.6	**0.5	9.6
5–14	**0.3	25.4	**0.1	*2.6	*3.7	*4.8	36.9
15–19	**0.1	13.4	*2.3	**0.8	*2.3	**1.1	20.0
20–29	*5.8	15.7	8.3	11.7	9.5	8.4	59.4
30–44	8.6	22.0	25.3	43.2	12.5	11.9	123.3
45–64	27.2	29.6	90.1	66.1	14.3	24.2	251.5
65+	84.0	30.4	186.4	42.4	17.9	30.6	391.7
Total 0–64	42.0	111.7	126.0	126.3	43.8	50.9	500.7
Total 15–64	41.7	80.7	125.9	121.8	38.5	45.6	454.2
Total	*126.1*	*142.1*	*312.4*	*168.7*	*61.7*	*81.5*	*892.4*
Persons							
0–4	**0.0	14.9	**0.0	*2.1	*2.6	*2.3	21.9
5–14	*2.3	55.7	**0.1	*7.2	*7.6	9.4	82.4
15–19	**0.1	20.7	*2.9	*4.4	*4.4	*2.7	35.3
20–29	*6.8	30.5	13.2	28.4	14.5	21.4	114.7
30–44	16.2	34.1	47.4	96.7	26.1	35.0	255.5
45–64	86.6	62.3	164.5	142.6	29.9	50.0	535.9
65+	164.7	72.2	276.2	77.6	25.9	64.0	680.6
Total 0–64	112.0	218.2	228.1	281.3	85.1	120.9	1,045.6
Total 15–64	109.7	147.6	227.9	272.0	74.9	109.2	941.3
Total	**276.7**	**290.4**	**504.3**	**359.0**	**111.0**	**184.9**	**1,726.2**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.4: People with a disability: physical 'main disabling condition' by sex and age, as a percentage of the Australian population of that sex and age, Australia 1993[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
0–4	**0.0	1.4	**0.0	**0.0	**0.2	**0.3	1.9
5–14	*0.2	2.3	**0.0	*0.4	*0.3	*0.4	3.5
15–19	**0.0	*1.1	**0.1	*0.5	*0.3	**0.2	2.3
20–29	**0.1	1.0	*0.3	1.2	*0.4	0.9	3.9
30–44	*0.4	0.6	1.1	2.6	0.7	1.1	6.4
45–64	3.3	1.8	4.2	4.3	0.9	1.4	16.0
65+	9.1	4.7	10.2	4.0	*0.9	3.8	32.7
Total 0–64	0.9	1.3	1.3	2.0	0.5	0.9	6.9
Total 15–64	1.1	1.1	1.7	2.5	0.6	1.1	8.2
Total	*1.7*	*1.7*	*2.2*	*2.2*	*0.6*	*1.2*	*9.5*
Females							
0–4	**0.0	*0.9	**0.0	*0.3	**0.2	**0.1	1.5
5–14	**0.0	2.1	**0.0	*0.2	*0.3	*0.4	3.0
15–19	**0.0	2.1	*0.4	**0.1	*0.4	**0.2	3.2
20–29	*0.4	1.1	0.6	0.8	0.7	0.6	4.3
30–44	0.4	1.1	1.2	2.1	0.6	0.6	6.0
45–64	1.6	1.7	5.2	3.8	0.8	1.4	14.5
65+	7.2	2.6	16.0	3.6	1.5	2.6	33.7
Total 0–64	0.5	1.5	1.6	1.6	0.6	0.7	6.5
Total 15–64	0.7	1.4	2.2	2.1	0.7	0.8	7.8
Total	*1.4*	*1.6*	*3.5*	*1.9*	*0.7*	*0.9*	*10.1*
Persons							
0–4	**0.0	1.2	**0.0	*0.2	*0.2	*0.2	1.7
5–14	*0.1	2.2	**0.0	*0.3	*0.3	0.4	3.2
15–19	**0.0	1.6	*0.2	*0.3	*0.3	*0.2	2.7
20–29	*0.2	1.1	0.5	1.0	0.5	0.8	4.1
30–44	0.4	0.8	1.1	2.3	0.6	0.9	6.2
45–64	2.5	1.8	4.7	4.1	0.9	1.4	15.3
65+	8.0	3.5	13.5	3.8	1.3	3.1	33.3
Total 0–64	0.7	1.4	1.5	1.8	0.5	0.8	6.7
Total 15–64	0.9	1.3	1.9	2.3	0.6	0.9	8.0
Total	**1.6**	**1.6**	**2.9**	**2.0**	**0.6**	**1.0**	**9.8**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.5: People with a severe or profound handicap: physical 'main disabling condition' by sex and age, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
5–14	**0.3	*6.4	**0.0	**1.6	**1.0	*2.8	12.1
15–19	**0.0	**0.0	**0.7	**0.3	**0.7	**1.6	*3.3
20–29	**0.0	**0.6	**0.8	**1.3	**1.4	*4.2	8.3
30–44	**0.5	**1.2	*3.8	13.8	*3.3	*5.9	28.5
45–64	*7.7	*3.2	12.0	13.2	*4.2	*6.4	46.7
65+	15.4	8.5	14.5	*7.7	*5.1	14.4	65.7
Total 5–64	8.4	11.4	17.2	30.2	10.7	20.9	98.9
Total 15–64	8.1	*5.0	17.2	28.6	9.7	18.1	86.8
Total	*23.9*	*20.0*	*31.7*	*37.9*	*15.7*	*35.4*	*164.5*
Females							
5–14	**0.3	*6.3	**0.0	**0.1	*2.2	*4.3	13.3
15–19	**0.0	**0.4	**0.6	**0.0	**0.0	**0.6	**1.6
20–29	*2.1	**1.5	**0.9	**1.7	*2.3	*2.4	10.9
30–44	**0.7	**1.3	*7.4	11.9	*4.2	*4.7	30.3
45–64	*3.4	*5.9	20.1	12.4	*4.7	8.7	55.2
65+	26.6	12.3	57.3	19.6	12.5	19.0	147.2
Total 5–64	*6.5	15.3	29.1	26.1	13.6	20.7	111.4
Total 15–64	*6.2	9.1	29.1	26.0	11.3	16.4	98.1
Total	*33.1*	*27.7*	*86.4*	*45.7*	*26.0*	*39.7*	*258.6*
Persons							
5–14	**0.6	12.7	**0.0	**1.7	*3.2	*7.1	25.4
15–19	**0.0	**0.4	**1.3	**0.3	**0.7	*2.2	*4.9
20–29	*2.1	*2.1	**1.7	*3.0	*3.7	*6.6	19.2
30–44	**1.2	*2.6	11.2	25.8	*7.5	10.5	58.8
45–64	11.0	9.1	32.1	25.6	9.0	15.1	101.9
65+	42.0	20.8	71.8	27.3	17.5	33.4	212.9
Total 5–64	14.9	26.8	46.3	56.4	24.2	41.7	210.3
Total 15–64	14.3	14.1	46.3	54.6	21.0	34.5	184.8
Total	**56.9**	**47.6**	**118.1**	**83.6**	**41.8**	**75.1**	**423.1**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.6: People with a severe or profound handicap: physical 'main disabling condition' by sex and age, as a percentage of the Australian population of that sex and age, Australia 1993[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
5–14	**0.0	*0.5	**0.0	**0.1	**0.1	*0.2	0.9
15–19	**0.0	**0.0	**0.1	**0.0	**0.1	**0.2	*0.5
20–29	**0.0	**0.0	**0.1	**0.1	**0.1	*0.3	0.6
30–44	**0.0	**0.1	*0.2	0.7	*0.2	*0.3	1.4
45–64	*0.4	*0.2	0.7	0.7	*0.2	*0.4	2.6
65+	1.7	1.0	1.6	*0.9	*0.6	1.6	7.4
Total 5–64	0.1	0.2	0.2	0.4	0.1	0.3	1.4
Total 15–64	0.1	*0.1	0.3	0.5	0.2	0.3	1.5
Total	*0.3*	*0.2*	*0.4*	*0.5*	*0.2*	*0.4*	*2.0*
Females							
5–14	**0.0	*0.5	**0.0	**0.0	*0.2	*0.3	1.1
15–19	**0.0	**0.1	**0.1	**0.0	**0.0	**0.1	**0.3
20–29	*0.1	**0.1	**0.1	**0.1	*0.2	*0.2	0.8
30–44	**0.0	**0.1	*0.4	0.6	*0.2	*0.2	1.5
45–64	*0.2	*0.3	1.2	0.7	*0.3	0.5	3.2
65+	2.3	1.1	4.9	1.7	1.1	1.6	12.6
Total 5–64	*0.1	0.2	0.4	0.4	0.2	0.3	1.6
Total 15–64	*0.1	0.2	0.5	0.4	0.2	0.3	1.7
Total	*0.4*	*0.3*	*1.1*	*0.6*	*0.3*	*0.5*	*3.1*
Persons							
5–14	**0.0	0.5	**0.0	**0.1	*0.1	*0.3	1.0
15–19	**0.0	**0.0	**0.1	**0.0	**0.1	*0.2	*0.4
20–29	*0.1	*0.1	**0.1	*0.1	*0.1	*0.2	0.7
30–44	**0.0	*0.1	0.3	0.6	*0.2	0.3	1.4
45–64	0.3	0.3	0.9	0.7	0.3	0.4	2.9
65+	2.1	1.0	3.5	1.3	0.9	1.6	10.4
Total 5–64	0.1	0.2	0.3	0.4	0.2	0.3	1.5
Total 15–64	0.1	0.1	0.4	0.5	0.2	0.3	1.6
Total	**0.3**	**0.3**	**0.7**	**0.5**	**0.3**	**0.5**	**2.6**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.7: People with a disability: physical 'all disabling conditions' by sex and age, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
0–4	**0.0	13.5	**0.0	**0.2	*2.9	*4.5	18.8
5–14	*2.8	47.4	**0.0	*4.5	9.1	14.1	65.2
15–19	**0.3	13.7	**0.7	*3.1	*3.1	*3.8	20.2
20–29	*5.2	24.8	9.7	17.3	8.9	30.4	70.7
30–44	16.6	24.8	37.8	64.2	21.7	71.3	164.0
45–64	143.3	59.2	155.5	107.6	27.6	134.6	387.1
65+	221.5	75.8	191.6	70.8	19.7	170.4	417.9
Total 0–64	168.1	183.3	203.7	196.9	73.3	258.7	726.0
Total 15–64	165.4	122.5	203.7	192.2	61.3	240.1	642.0
Total	*389.6*	*259.1*	*395.3*	*267.6*	*92.9*	*429.1*	*1,143.9*
Females							
0–4	**0.0	*7.4	**0.2	**1.9	*2.8	**1.0	11.3
5–14	**1.3	32.7	**0.4	*3.3	8.7	8.5	46.3
15–19	**1.0	18.6	*3.7	*2.1	*3.2	*6.0	27.6
20–29	*8.0	26.7	13.0	14.6	16.2	21.9	74.5
30–44	18.0	44.1	44.0	53.0	19.2	60.6	162.8
45–64	96.8	59.9	170.2	84.7	26.7	124.5	327.0
65+	312.0	75.4	347.5	89.3	35.4	273.7	556.9
Total 0–64	125.1	189.5	231.4	159.5	76.8	222.6	649.5
Total 15–64	123.8	149.4	230.9	154.4	65.3	213.0	591.9
Total	*437.1*	*264.9*	*578.9*	*248.8*	*112.2*	*496.3*	*1,206.4*
Persons							
0–4	**0.0	20.8	**0.2	*2.0	*5.7	*5.5	30.1
5–14	*4.0	80.1	**0.4	*7.8	17.8	22.6	111.5
15–19	**1.4	32.4	*4.4	*5.2	*6.3	9.8	47.9
20–29	13.1	51.5	22.7	31.9	25.1	52.3	145.1
30–44	34.6	68.9	81.8	117.2	40.9	132.0	326.7
45–64	240.1	119.1	325.7	192.3	54.3	259.0	714.2
65+	533.5	151.2	539.1	160.1	55.1	444.1	974.8
Total 0–64	293.2	372.8	435.2	356.4	150.1	481.3	1,375.5
Total 15–64	289.2	271.9	434.6	346.6	126.6	453.1	1,233.9
Total	**826.7**	**524.1**	**974.2**	**516.5**	**205.2**	**925.4**	**2,350.3**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.8: People with a disability: physical 'all disabling conditions' by sex and age, as a percentage of the Australian population of that sex and age, Australia 1993[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
0–4	**0.0	2.0	**0.0	**0.0	*0.4	*0.7	2.8
5–14	*0.2	3.6	**0.0	*0.3	0.7	1.1	5.0
15–19	**0.0	2.1	**0.1	*0.5	*0.5	*0.6	3.0
20–29	*0.4	1.7	0.7	1.2	0.6	2.1	5.0
30–44	0.8	1.2	1.8	3.1	1.1	3.5	7.9
45–64	8.0	3.3	8.7	6.0	1.6	7.6	21.8
65+	25.1	8.6	21.7	8.0	2.2	19.3	47.3
Total 0–64	2.1	2.3	2.6	2.5	0.9	3.3	9.2
Total 15–64	2.8	2.1	3.4	3.2	1.0	4.0	10.8
Total	*4.4*	*3.0*	*4.5*	*3.0*	*1.1*	*4.9*	*13.0*
Females							
0–4	**0.0	*1.2	**0.0	**0.3	*0.5	**0.2	1.8
5–14	**0.1	2.7	**0.0	*0.3	0.7	0.7	3.7
15–19	**0.2	2.9	*0.6	*0.3	*0.5	*0.9	4.3
20–29	*0.6	1.9	0.9	1.0	1.2	1.6	5.3
30–44	0.9	2.1	2.1	2.6	0.9	2.9	7.9
45–64	5.6	3.5	9.8	4.9	1.5	7.2	18.9
65+	26.8	6.5	29.9	7.7	3.0	23.5	47.8
Total 0–64	1.6	2.5	3.0	2.1	1.0	2.9	8.5
Total 15–64	2.1	2.6	4.0	2.7	1.1	3.7	10.2
Total	*4.9*	*3.0*	*6.5*	*2.8*	*1.3*	*5.6*	*13.6*
Persons							
0–4	**0.0	1.6	**0.0	*0.2	*0.4	*0.4	2.3
5–14	*0.2	3.2	**0.0	*0.3	0.7	0.9	4.4
15–19	**0.1	2.5	*0.3	*0.4	*0.5	0.7	3.7
20–29	0.5	1.8	0.8	1.1	0.9	1.9	5.2
30–44	0.8	1.7	2.0	2.8	1.0	3.2	7.9
45–64	6.8	3.4	9.3	5.5	1.5	7.4	20.4
65+	26.1	7.4	26.3	7.8	2.7	21.7	47.6
Total 0–64	1.9	2.4	2.8	2.3	1.0	3.1	8.8
Total 15–64	2.5	2.3	3.7	2.9	1.1	3.9	10.5
Total	**4.7**	**3.0**	**5.5**	**2.9**	**1.2**	**5.3**	**13.3**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.9: People with a severe or profound handicap: physical 'all disabling conditions' by sex and age, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
5–14	**0.6	14.0	**0.0	**1.6	*4.1	10.6	23.2
15–19	**0.3	*3.3	**0.7	**0.4	**1.7	*2.6	*5.1
20–29	*2.6	*3.2	*2.1	**1.9	*3.6	8.1	12.3
30–44	*2.9	*3.2	*6.9	17.9	*7.0	21.6	36.4
45–64	19.4	10.0	27.3	20.7	8.4	37.1	63.9
65+	49.7	18.8	42.9	17.5	10.4	65.8	103.7
Total 5–64	25.9	33.6	37.0	42.5	24.9	79.9	140.9
Total 15–64	25.3	19.6	37.0	40.9	20.8	69.3	117.7
Total	*75.6*	*52.4*	*79.9*	*60.0*	*35.3*	*145.7*	*244.6*
Females							
5–14	**1.3	9.2	**0.2	**1.0	*6.2	*7.8	18.6
15–19	**0.4	*2.7	**0.8	**0.1	**0.5	*2.9	*4.1
20–29	*3.1	*3.9	**1.6	*3.3	*6.8	*8.0	16.1
30–44	*4.3	*7.2	11.9	17.0	8.4	22.7	41.3
45–64	18.8	14.9	40.3	17.0	10.2	43.2	73.1
65+	122.3	31.7	125.0	45.2	23.2	156.8	222.5
Total 5–64	27.8	37.8	54.9	38.4	32.2	84.6	153.3
Total 15–64	26.5	28.7	54.7	37.4	26.0	76.8	134.7
Total	*150.0*	*69.5*	*179.9*	*83.6*	*55.3*	*241.3*	*375.9*
Persons							
5–14	**1.9	23.1	**0.2	*2.6	10.3	18.4	41.8
15–19	**0.7	*5.9	**1.5	**0.5	*2.2	*5.5	9.2
20–29	*5.7	*7.0	*3.7	*5.1	10.5	16.1	28.4
30–44	*7.2	10.5	18.8	35.0	15.4	44.4	77.8
45–64	38.2	24.9	67.6	37.6	18.7	80.2	137.0
65+	172.0	50.4	167.9	62.7	33.6	222.6	326.2
Total 5–64	53.7	71.5	91.8	80.8	57.1	164.5	294.2
Total 15–64	51.8	48.3	91.7	78.3	46.8	146.1	252.4
Total	**225.6**	**121.9**	**259.8**	**143.6**	**90.7**	**387.1**	**620.4**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.10: People with a severe or profound handicap: physical 'all disabling conditions' by sex and age, as a percentage of the Australian population of that sex and age, Australia 1993[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
5–14	**0.0	1.1	**0.0	**0.1	*0.3	0.8	1.8
15–19	**0.0	*0.5	**0.1	**0.1	**0.3	*0.4	*0.8
20–29	*0.2	*0.2	*0.1	**0.1	*0.3	0.6	0.9
30–44	*0.1	*0.2	*0.3	0.9	*0.3	1.0	1.8
45–64	1.1	0.6	1.5	1.2	0.5	2.1	3.6
65+	5.6	2.1	4.9	2.0	1.2	7.5	11.7
Total 5–64	0.4	0.5	0.5	0.6	0.3	1.1	1.9
Total 15–64	0.4	0.3	0.6	0.7	0.3	1.2	2.0
Total	*0.9*	*0.6*	*1.0*	*0.7*	*0.4*	*1.8*	*3.0*
Females							
5–14	**0.1	0.7	**0.0	**0.1	*0.5	*0.6	1.5
15–19	**0.1	*0.4	**0.1	**0.0	**0.1	*0.5	*0.7
20–29	*0.2	*0.3	**0.1	*0.2	*0.5	*0.6	1.2
30–44	*0.2	*0.4	0.6	0.8	0.4	1.1	2.0
45–64	1.1	0.9	2.3	1.0	0.6	2.5	4.2
65+	10.5	2.7	10.7	3.9	2.0	13.5	19.1
Total 5–64	0.4	0.5	0.8	0.5	0.5	1.2	2.2
Total 15–64	0.5	0.5	0.9	0.6	0.4	1.3	2.3
Total	*1.8*	*0.8*	*2.2*	*1.0*	*0.7*	*2.9*	*4.6*
Persons							
5–14	**0.1	0.9	**0.0	*0.1	0.4	0.7	1.6
15–19	**0.1	*0.5	**0.1	**0.0	*0.2	*0.4	0.7
20–29	*0.2	*0.2	*0.1	*0.2	0.4	0.6	1.0
30–44	*0.2	0.3	0.5	0.8	0.4	1.1	1.9
45–64	1.1	0.7	1.9	1.1	0.5	2.3	3.9
65+	8.4	2.5	8.2	3.1	1.6	10.9	15.9
Total 5–64	0.4	0.5	0.6	0.6	0.4	1.2	2.1
Total 15–64	0.4	0.4	0.8	0.7	0.4	1.2	2.1
Total	**1.4**	**0.7**	**1.6**	**0.9**	**0.6**	**2.4**	**3.8**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.11: People with a disability: physical disability calculated using AIHW method, by sex and age, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
0–4	**0.0	*5.3	**0.0	**0.1	**0.4	*2.1	*7.0
5–14	*2.8	42.2	**0.0	*4.1	*7.2	13.5	58.0
15–19	**0.3	12.7	**0.7	*2.3	*3.1	*3.1	17.8
20–29	*4.0	19.1	*8.0	15.3	*7.4	25.7	55.9
30–44	13.9	22.0	32.6	56.7	19.7	61.6	140.5
45–64	128.8	55.0	141.1	98.2	23.3	126.1	345.9
65+	209.5	71.6	172.7	67.5	19.0	158.9	384.9
Total 0–64	149.7	156.2	182.5	176.8	61.2	232.1	625.1
Total 15–64	147.0	108.7	182.5	172.6	53.5	216.6	560.0
Total	*359.2*	*227.8*	*355.2*	*244.3*	*80.2*	*391.1*	*1,010.0*
Females							
0–4	**0.0	*3.9	**0.2	**0.0	**0.6	**0.6	*4.1
5–14	**1.3	29.2	**0.4	*2.5	*7.6	8.3	41.3
15–19	**0.9	15.5	*3.1	**1.7	**1.9	*5.2	22.3
20–29	*6.6	21.3	10.9	12.4	13.4	19.7	60.5
30–44	15.9	38.9	40.1	49.7	15.3	55.7	143.4
45–64	87.3	55.4	155.3	76.9	23.6	116.2	293.4
65+	294.4	72.8	326.7	87.3	35.3	267.4	524.7
Total 0–64	111.9	164.2	209.9	143.2	62.4	205.7	564.9
Total 15–64	110.6	131.1	209.4	140.7	54.2	196.8	519.6
Total	*406.3*	*237.0*	*536.6*	*230.6*	*97.7*	*473.0*	*1,089.5*
Persons							
0–4	**0.0	9.2	**0.2	**0.1	**1.1	*2.8	11.1
5–14	*4.0	71.4	**0.4	*6.6	14.8	21.8	99.3
15–19	**1.2	28.2	*3.8	*4.0	*5.0	8.3	40.1
20–29	10.5	40.4	18.9	27.6	20.8	45.4	116.4
30–44	29.8	60.9	72.7	106.5	35.0	117.3	283.8
45–64	216.1	110.3	296.4	175.1	46.9	242.3	639.3
65+	504.0	144.4	499.4	154.8	54.3	426.3	909.6
Total 0–64	261.6	320.4	392.4	320.0	123.6	437.8	1,190.0
Total 15–64	257.6	239.8	391.9	313.3	107.7	413.3	1,079.6
Total	**765.6**	**464.8**	**891.8**	**474.8**	**177.9**	**864.1**	**2,099.6**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.12: People with a disability: physical disability calculated using AIHW method, by sex and age, as a percentage of the Australian population of that sex and age, Australia 1993[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
0–4	**0.0	*0.8	**0.0	**0.0	**0.1	*0.3	*1.1
5–14	*0.2	3.2	**0.0	*0.3	*0.6	1.0	4.5
15–19	**0.0	1.9	**0.1	*0.3	*0.5	*0.5	2.7
20–29	*0.3	1.3	*0.6	1.1	*0.5	1.8	3.9
30–44	0.7	1.1	1.6	2.7	1.0	3.0	6.8
45–64	7.2	3.1	7.9	5.5	1.3	7.1	19.4
65+	23.7	8.1	19.6	7.6	2.2	18.0	43.6
Total 0–64	1.9	2.0	2.3	2.2	0.8	2.9	7.9
Total 15–64	2.5	1.8	3.1	2.9	0.9	3.6	9.4
Total	*4.1*	*2.6*	*4.0*	*2.8*	*0.9*	*4.5*	*11.5*
Females							
0–4	**0.0	*0.6	**0.0	**0.0	**0.1	**0.1	*0.6
5–14	**0.1	2.4	**0.0	*0.2	*0.6	0.7	3.3
15–19	**0.1	2.4	*0.5	**0.3	**0.3	*0.8	3.5
20–29	*0.5	1.5	0.8	0.9	1.0	1.4	4.3
30–44	0.8	1.9	1.9	2.4	0.7	2.7	7.0
45–64	5.0	3.2	9.0	4.4	1.4	6.7	17.0
65+	25.3	6.3	28.1	7.5	3.0	23.0	45.1
Total 0–64	1.5	2.1	2.7	1.9	0.8	2.7	7.4
Total 15–64	1.9	2.3	3.6	2.4	0.9	3.4	8.9
Total	*4.6*	*2.7*	*6.1*	*2.6*	*1.1*	*5.3*	*12.3*
Persons							
0–4	**0.0	0.7	**0.0	**0.0	**0.1	*0.2	0.9
5–14	*0.2	2.8	**0.0	*0.3	0.6	0.9	3.9
15–19	**0.1	2.2	*0.3	*0.3	*0.4	0.6	3.1
20–29	0.4	1.4	0.7	1.0	0.7	1.6	4.1
30–44	0.7	1.5	1.8	2.6	0.8	2.8	6.9
45–64	6.2	3.1	8.4	5.0	1.3	6.9	18.2
65+	24.6	7.1	24.4	7.6	2.7	20.8	44.4
Total 0–64	1.7	2.1	2.5	2.1	0.8	2.8	7.6
Total 15–64	2.2	2.0	3.3	2.7	0.9	3.5	9.2
Total	**4.3**	**2.6**	**5.1**	**2.7**	**1.0**	**4.9**	**11.9**

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.13: People with a disability: physical 'main disabling condition' by sex, by State and Territory, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
NSW	53.8	48.5	60.2	61.5	14.7	31.5	270.3
Vic	38.2	37.5	51.3	53.6	14.4	25.1	220.0
Qld	29.4	29.4	32.6	30.7	9.1	20.2	151.3
WA	11.2	10.8	16.7	20.3	*4.1	9.9	73.1
SA	13.3	14.9	21.8	16.3	*4.3	11.8	82.5
Tas	3.2	3.7	6.6	4.2	*1.5	2.9	22.0
ACT	*0.9	2.9	1.6	3.1	*0.7	1.8	11.0
NT	**0.6	**0.7	*1.1	**0.6	**0.5	**0.2	3.6
Females							
NSW	45.7	43.5	102.2	57.9	17.5	22.4	289.2
Vic	32.7	33.6	91.2	50.8	18.7	23.6	250.7
Qld	19.0	34.2	44.7	26.0	11.1	11.2	146.3
WA	11.9	12.3	28.1	13.3	*4.5	11.0	81.1
SA	9.7	13.6	28.6	12.9	6.4	8.6	79.7
Tas	4.1	2.5	11.9	3.5	*1.9	*1.9	25.8
ACT	2.2	1.9	4.3	2.9	1.3	2.0	14.7
NT	**0.6	**0.4	*1.4	*1.4	**0.3	*0.8	5.0
Persons							
NSW	99.5	92.0	162.4	119.3	32.2	54.0	559.5
Vic	70.9	71.1	142.6	104.4	33.0	48.7	470.7
Qld	48.4	63.6	77.3	56.8	20.2	31.4	297.6
WA	23.2	23.1	44.8	33.6	8.6	20.9	154.2
SA	23.0	28.4	50.4	29.2	10.7	20.4	162.2
Tas	7.2	6.2	18.5	7.7	3.4	4.8	47.8
ACT	3.1	4.8	5.9	6.1	2.1	3.7	25.7
NT	*1.3	*1.1	2.5	*2.0	*0.8	*1.0	8.6

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.14: People with a disability: physical 'all disabling conditions' by sex, by State and Territory, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
NSW	131.0	84.0	119.4	89.7	28.7	143.0	365.7
Vic	99.9	61.5	104.9	73.4	22.6	103.9	290.9
Qld	73.6	52.3	76.5	42.6	18.4	80.9	212.0
WA	30.9	22.8	34.3	25.4	7.8	38.1	106.4
SA	39.1	27.3	41.4	23.7	10.3	42.6	114.9
Tas	10.3	5.3	11.8	7.0	2.7	12.5	30.4
ACT	3.1	4.6	4.2	4.4	*1.3	5.7	15.4
NT	*1.7	*1.4	2.8	*1.5	*1.2	*2.4	8.2
Females							
NSW	156.1	88.5	196.0	84.4	35.5	155.7	388.8
Vic	124.0	65.2	156.0	68.2	27.3	140.7	328.7
Qld	64.0	56.4	90.6	43.2	22.4	74.0	206.0
WA	33.9	21.4	52.6	20.4	9.7	47.4	113.2
SA	40.1	23.0	55.7	21.2	11.0	51.4	110.7
Tas	11.5	5.4	17.8	4.8	3.1	15.8	33.4
ACT	5.8	3.7	7.9	4.9	2.1	8.5	19.0
NT	*1.6	*1.3	*2.4	*1.7	*1.0	2.7	6.5
Persons							
NSW	287.2	172.5	315.3	174.1	64.2	298.7	754.5
Vic	224.0	126.8	260.9	141.6	49.9	244.7	619.6
Qld	137.6	108.7	167.2	85.8	40.8	155.0	417.9
WA	64.8	44.2	86.9	45.8	17.5	85.5	219.6
SA	79.2	50.3	97.1	45.0	21.2	94.1	225.6
Tas	21.8	10.7	29.6	11.7	5.9	28.3	63.8
ACT	9.0	8.3	12.1	9.3	3.4	14.2	34.4
NT	3.2	2.7	5.2	3.2	*2.2	5.0	14.7

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.15: People with a disability: physical disability calculated using AIHW method, by sex, by State and Territory, Australia 1993 ('000)[(a)]

	Circulatory	Respiratory	Arthritis	Other musculo-skeletal	Neuro-logical	Other physical	Total physical
Males							
NSW	119.5	76.0	107.1	82.0	25.5	124.5	320.4
Vic	93.1	51.5	92.2	66.3	20.3	95.6	257.5
Qld	69.2	45.3	69.2	39.5	15.0	76.8	188.6
WA	27.9	20.1	31.4	22.7	6.0	34.4	91.6
SA	35.9	24.9	38.2	22.4	8.6	40.7	103.6
Tas	9.4	4.7	10.8	6.4	2.6	11.6	28.1
ACT	2.6	4.0	3.7	3.4	1.1	5.1	12.7
NT	*1.4	*1.2	2.6	*1.5	*1.0	2.4	7.6
Females							
NSW	145.0	78.1	177.5	77.4	32.5	149.7	349.7
Vic	114.6	58.2	146.5	63.3	22.9	133.3	296.7
Qld	59.7	52.0	86.8	40.6	19.5	70.9	189.3
WA	31.7	18.7	48.8	19.0	8.4	44.7	102.3
SA	38.0	20.7	51.8	20.1	8.9	49.1	99.5
Tas	10.5	5.4	15.7	4.1	2.8	14.9	29.7
ACT	5.5	3.2	7.2	4.7	1.7	8.1	17.0
NT	*1.4	**0.7	*2.2	*1.3	*1.0	*2.3	5.4
Persons							
NSW	264.5	154.1	284.6	159.4	58.0	274.3	670.1
Vic	207.7	109.7	238.6	129.6	43.3	228.9	554.2
Qld	128.9	97.3	156.0	80.2	34.4	147.7	377.9
WA	59.6	38.8	80.2	41.7	14.5	79.2	193.9
SA	73.9	45.7	90.0	42.6	17.5	89.7	203.0
Tas	19.9	10.1	26.6	10.4	5.4	26.5	57.8
ACT	8.1	7.2	10.9	8.2	2.8	13.3	29.7
NT	2.8	*1.9	4.8	2.9	*2.0	4.6	13.0

(a) Estimates marked with ** have an associated relative standard error (RSE) of 50% or more. Estimates marked with * have an associated RSE of between 25% and 50%. These estimates should be interpreted accordingly.

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

Table A4.16: Population: States and Territories, by sex and age, Australia 1993

	States and Territories								
Age	**NSW**	**Vic**	**Qld**	**WA**	**SA**	**Tas**	**ACT**	**NT**	**Australia**
Male									
0–4	225,793	164,971	117,658	64,653	50,937	17,920	11,735	8,586	662,253
5–19	656,347	487,326	362,929	196,334	155,489	54,930	36,211	22,160	1,971,726
20–64	1,788,839	1,331,996	919,085	505,608	434,663	136,126	93,379	54,332	5,264,028
65+	312,648	225,980	151,127	73,638	83,634	24,833	8,471	2,478	882,809
Total	*2,983,627*	*2,210,273*	*1,550,799*	*840,233*	*724,723*	*233,809*	*149,796*	*87,556*	*8,780,816*
Female									
0–4	215,018	156,772	111,351	61,456	47,762	17,132	11,095	8,258	628,844
5–19	624,649	463,037	342,342	185,472	147,586	52,471	34,604	20,673	1,870,834
20–64	1,759,029	1,327,146	900,312	490,755	428,872	135,522	91,625	49,398	5,182,659
65+	417,564	304,207	190,203	94,618	111,111	32,580	11,215	2,402	1,163,900
Total	*3,016,260*	*2,251,162*	*1,544,208*	*832,301*	*735,331*	*237,705*	*148,539*	*80,731*	*8,846,237*
Persons									
0–4	440,811	321,743	229,009	126,109	98,699	35,052	22,830	16,844	1,291,097
5–19	1,280,996	950,363	705,271	381,806	303,075	107,401	70,815	42,833	3,842,560
20–64	3,547,868	2,659,142	1,819,397	996,363	863,535	271,648	185,004	103,730	10,446,687
65+	730,212	530,187	341,330	168,256	194,745	57,413	19,686	4,880	2,046,709
Total	**5,999,887**	**4,461,435**	**3,095,007**	**1,672,534**	**1,460,054**	**471,514**	**298,335**	**168,287**	**17,627,053**

Source: AIHW analysis of ABS 1993 Survey of Disability, Ageing and Carers data.

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