

**Health system costs of
injury, poisoning and
musculoskeletal
disorders in Australia
1993–94**

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Health system costs of injury, poisoning and musculoskeletal disorders in Australia 1993–94

Colin Mathers and Ruth Penm

Australian Institute of Health and Welfare
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Contents

List of tables	vi
List of figures	ix
Preface.....	x
Acknowledgments.....	xi
Summary	xii
1 Introduction.....	1
1.1 Background and overview	1
1.2 Uses of disease cost estimates	4
1.3 Methodology	5
1.4 Limitations.....	6
2 Health system costs of injuries and poisoning	7
2.1 Injury costs by type of injury.....	7
2.2 Injury costs by external cause	9
2.3 Injury costs and impact.....	11
2.4 Injury costs by age and sex.....	13
2.5 Most costly injuries at different ages.....	14
3 Health system costs of musculoskeletal disorders.....	18
3.1 Costs for specific musculoskeletal disorders	18
3.2 Costs and impact of musculoskeletal disorders	21
3.3 Musculoskeletal disorder costs by age and sex.....	22
3.4 Annual health costs per treated case.....	26
Glossary.....	27
References	31
Appendix A: Classification of disease and injury	32
Appendix B: Summary of disease costing methodology	35
Appendix C: Detailed tables—injury and poisoning, 1993–94.....	41
Appendix D: Detailed tables—musculoskeletal disorders, 1993–94	61

List of tables

Table 1:	Diseases and injury by ICD-9 chapter: health system costs by health sector, 1993–94 and number of deaths, 1994.....	2
Table 2:	Injury and poisoning: health system costs by type of injury and health sector, 1993–94	8
Table 3:	Injury and poisoning: estimated health services utilisation by type of injury and health sector, 1993–94	8
Table 4:	External causes of injury: health system costs by health sector, 1993–94.....	10
Table 5:	External causes of injury: estimated health services utilisation by sector, 1993–94	10
Table 6:	Health care costs of injuries by external cause and sex, Australia, 1993–94.....	11
Table 7:	External causes of injury: health system costs by sex, 1993–94 and numbers of deaths and potential years of life lost to age 75 by sex, 1994	12
Table 8:	Musculoskeletal disorders: health system costs by health sector, 1993–94.....	19
Table 9:	Musculoskeletal disorders: estimated health services utilisation by sector, 1993–94	19
Table 10:	Musculoskeletal diseases: institutional and non-institutional treatment costs and institutional costs as a per cent of total treatment costs, 1993–94	20
Table 11:	Health care costs of all musculoskeletal disorders by sex and sector of expenditure, Australia, 1993–94	20
Table 12:	Self-reported prevalence (%) of musculoskeletal disorders from the 1995 ABS National Health Survey, by type of disorder, sex and whether chronic or treated.....	21
Table 13:	Estimated average annual health system costs (\$) per treated case, by sex and age group, 1993–94	26
Table A.1:	Classification of injuries and poisoning by injury type	32
Table A.2:	Classification of injuries and poisoning by external cause.....	33
Table A.3:	Classification of musculoskeletal disorders.....	34
Table B.1:	Summary of disease costing methodology, 1993–94	39

Table C.1: Estimated resident population of Australia, by age group and sex, 30 June 1994.....	41
Table C.2: Type of injury: total health system costs by health sector, 1993–94	42
Table C.3: Type of injury: estimated health service utilisation by health sector, 1993–94	43
Table C.4: External causes of injury: total health system costs by health sector, 1993–94.....	44
Table C.5: External causes of injury: estimated health service utilisation by health sector, 1993–94	45
Table C.6: Injury and poisoning: total health system costs by health sector, sex and age, 1993–94	46
Table C.7: Injury and poisoning: health service utilisation by health sector, sex and age, 1993–94	47
Table C.8: Unintentional injuries: total health system costs by health sector, sex and age, 1993–94	48
Table C.9: Unintentional injuries: health service utilisation by health sector, sex and age, 1993–94	49
Table C.10: Road traffic accidents: total health system costs by health sector, sex and age, 1993–94	50
Table C.11: Road traffic accidents: health service utilisation by health sector, sex and age, 1993–94	51
Table C.12: Accidental falls: total health system costs by health sector, sex and age, 1993–94	52
Table C.13: Accidental falls: health service utilisation by health sector, sex and age, 1993–94	53
Table C.14: Adverse effects of medical treatment: total health system costs by health sector, sex and age, 1993–94.....	54
Table C.15: Adverse effects of medical treatment: health service utilisation by health sector, sex and age, 1993–94.....	55
Table C.16: Suicide and self-inflicted injury: total health system costs by health sector, sex and age, 1993–94.....	56
Table C.17: Suicide and self-inflicted injury: health service utilisation by health sector, sex and age, 1993–94	57
Table C.18: Homicide and violence: total health system costs by health sector, sex and age, 1993–94	58

Table C.19: Homicide and violence: health service utilisation by health sector, sex and age, 1993–94	59
Table D.1: Diseases of the musculoskeletal system and connective tissue: total health system costs by health sector and disease type, 1993–94	62
Table D.2: Diseases of the musculoskeletal system and connective tissue: estimated health service utilisation by health sector and disease type, 1993–94	63
Table D.3: Diseases of the musculoskeletal system and connective tissue: total health system costs by health sector, sex and age, 1993–94.....	64
Table D.4: Diseases of the musculoskeletal system and connective tissue: health service utilisation by health sector, sex and age, 1993–94.....	65
Table D.5: Rheumatoid arthritis: total health system costs by health sector, sex and age, 1993–94	66
Table D.6: Rheumatoid arthritis: health service utilisation by health sector, sex and age, 1993–94	67
Table D.7: Osteoarthritis: total health system costs by health sector, sex and age, 1993–94.....	68
Table D.8: Osteoarthritis: health service utilisation by health sector, sex and age, 1993–94.....	69
Table D.9: Joint derangement and disorders: total health system costs by health sector, sex and age, 1993–94.....	70
Table D.10: Joint derangement and disorders: health service utilisation by health sector, sex and age, 1993–94.....	71
Table D.11: Back problems: total health system costs by health sector, sex and age, 1993–94	72
Table D.12: Back problems: health service utilisation by health sector, sex and age, 1993–94	73
Table D.13: Neck problems: total health system costs by health sector, sex and age, 1993–94	74
Table D.14: Neck problems: health service utilisation by health sector, sex and age, 1993–94	75
Table D.15: Disorders of muscles, tendons and soft tissue: total health system costs by health sector, sex and age, 1993–94.....	76
Table D.16: Disorders of muscles, tendons and soft tissue: health service utilisation by health sector, sex and age, 1993–94.....	77

List of figures

Figure 1:	Health system costs by ICD-9 chapter, Australia, 1993–94	1
Figure 2:	Health system costs for specific types of injury, ranked in descending order, Australia, 1993–94.....	7
Figure 3:	Health system costs for specific external causes of injury, ranked in descending order, Australia, 1993–94.....	9
Figure 4:	Health system costs of injury in 1993–94 compared with potential years of life lost to age 75 in 1994, by sex and external cause.....	12
Figure 5:	Injury and poisoning: total health system costs and average annual cost per capita, by age group and sex, 1993–94.....	13
Figure 6:	Selected injuries: total health system costs by age group and sex, 1993–94.....	15
Figure 7:	Selected injuries: per capita health system costs by age group and sex, 1993–94.....	16
Figure 8:	Contribution of selected external causes to total health system costs of injury at various ages: 0–14, 15–24, 25–64 and 65 years and over, Australia, 1993–94.....	17
Figure 9:	Health system costs for specific musculoskeletal disorders, ranked in descending order, Australia, 1993–94.....	18
Figure 10:	Health system costs of musculoskeletal disorders in 1993–94 compared with self-reported prevalence of arthritis, back problems and other musculoskeletal disorders from the 1995 ABS National Health Survey..	22
Figure 11:	Musculoskeletal disorders: total health system costs and average annual cost per capita, by age group and sex, 1993–94.....	23
Figure 12:	Selected musculoskeletal disorders: total health system costs by age group and sex, 1993–94	24
Figure 13:	Selected musculoskeletal disorders: per capita health system costs by age group and sex, 1993–94	25

Preface

The Australian Institute of Health and Welfare has estimated the direct costs of health services in 1993–94 attributable to a comprehensive range of diseases and injury. The Institute's Disease Costs and Impact Study has revised and extended the methodology used to carry out these costings, to include health sectors accounting for over 90% of recurrent health expenditure. Disease costing reports published in 1998 by the Institute include:

- *Health System Costs of Diseases and Injury in Australia 1993–94*;
- *Disease Costing Methodology used in the Disease Costs and Impact Study 1993–94*;
- *Health System Costs of Cancer in Australia 1993–94* (in collaboration with the National Cancer Control Initiative); and
- *Health System Costs of Cardiovascular Diseases and Diabetes in Australia 1993–94*.

It is intended to publish one further report on the costs associated with mental health problems in 1993–94. Detailed estimates for other disease groups will not be published until the cost estimates are updated to a more recent year, using more up-to-date health service utilisation data now becoming available through a national, continuous survey of general practitioners (the BEACH survey) being conducted by the University of Sydney's Family Medicine Research Unit in collaboration with the Institute.

The health system costs of disease presented in this report are an example of a satellite national account. Satellite national accounts enable the linkage of non-monetary data sources and analysis to the monetary national accounting system. In order to link together expenditure, workforce, disease and other data in a useful way the definitions used in each of these areas need to be clearly spelt out. The Institute is currently undertaking a Satellite Accounts project which involves developing a conceptual framework and documenting and refining the definitions and methodologies used in the health and welfare services expenditure area.

This information will be brought together in a publication, *Health and Welfare Services Satellite Accounts: Concepts, Sources and Methods*, to provide an integrating framework for the Institute's health and welfare services expenditure collections, and a useful framework for all Institute collections—including the disease costing work reported here.

Richard Madden
Director
Australian Institute of Health and Welfare

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We would also like to gratefully acknowledge the assistance of the Family Medicine Research Unit of the University of Sydney, for provision of a copy of all data contained in the Australian Morbidity and Treatment Survey and for helpful advice.

Summary

Injury is the principal cause of death in people under 45 years of age, a leading cause of mortality, morbidity and permanent disability in Australia, as well as a major source of health costs. The direct health system costs of injury and poisoning amounted to \$2,601 million in 1993–94, or 8.3% of total recurrent health expenditure.

Musculoskeletal disorders are not a major cause of death, but cause considerable morbidity and disability. Chronic musculoskeletal disorders are reported by 29% of Australians aged 15 years and over, and 56% of Australians aged 60 years and over. Musculoskeletal disorders were responsible for \$3,002 million in health expenditure in 1993–94, higher than that for injury and poisoning, and only 20% lower than total health expenditure for cardiovascular diseases or for diseases of the digestive system. This report provides a systematic analysis of total health system costs of injuries, poisoning and musculoskeletal disorders in Australia in 1993–94.

The five external causes of injury that accounted for the most health expenditure in 1993–94, in descending order, are:

- accidental falls \$806 million (31% of total injury costs)
- adverse effects of medical treatment \$401 million (16%)
- road traffic accidents \$370 million (14%)
- homicide and violence \$124 million (5%)
- suicide and self-inflicted injury \$72 million (3%)

Adverse effects of medical treatment include medical and surgical misadventure and adverse reactions to drugs in therapeutic use as defined by the International Classification of Diseases and as recorded in health system data collections.

Annual health system costs for injury are around \$100 to \$150 million for each 10 year age–sex group in adults, with the exception of men aged 15–34 where health system costs are two to three times higher, and women aged 75 years and over, where the \$300 million expenditure is mainly due to accidental falls. Together, accidental falls and adverse effects of medical treatment account for 90% of all injury costs for people aged 65 years and over.

Injury costs for males are around 20% higher than those for females on average, a much lower sex ratio than for deaths, where there are around 2.4 male deaths for every female death due to injury. The male to female cost ratio is highest for machine injuries, non-road transport accidents and homicide and violence, and is lowest for accidental falls, where costs for females are 40% higher than those for males.

Total health system costs of musculoskeletal disorders were \$3,002 million in 1993–94. The five musculoskeletal disorders that accounted for the most health expenditure, in descending order, are:

- back problems \$700 million (23% of total musculoskeletal costs)
- osteoarthritis \$624 million (21%)
- muscle, tendon, soft tissue problems \$519 million (17%)
- joint derangement and disorders \$430 million (14%)
- neck problems \$160 million (5%)

Total expenditure for musculoskeletal disorders rises during childhood and plateaus around \$200 million dollars for each 10-year age group between ages 30 and 70. Health system costs rise steeply for older women to a total of \$594 million for women aged 75 years and over, of which nearly 60% is due to nursing home costs. Per capita expenditure rises steadily with age to ages 65–74 years and then jumps substantially to around \$600 and \$1,000 per capita for men and women aged 75 years and over respectively. Costs of musculoskeletal disorders for females are around 38% higher than those for males, largely because of the high costs for older women.