

**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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# 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 Detailed estimates for other disease groups will not be published until the cost estimates are updated to a more recent year, using more up-to-date health service utilisation data now becoming available through a national,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.