

DEATHS, COSTS AND GST

Key points

- Tasmania has 2.3% of Australia's population but 3% of its deaths.
- That extra amount above the state's population share represents about 1,000 deaths a year.
- Those 1,000 deaths represent almost a quarter of all Tasmanian deaths.
- The average cost of inpatient care for a person in the last two years of life is about \$30,000.
- This costs the state over \$30 million more than would be the case if deaths were distributed evenly around the nation in line with the broad population.
- The reason for the state's high death rate is found in its demographics. Tasmanians tend to be older, poorer, sicker and less well educated than mainlanders. They are also more likely to smoke and even at birth have a lower life expectancy.
- Tasmania is compensated by the federal GST redistribution system for the effect of its demographics on health and hospital costs. In 2014-15 this state will receive an extra \$84 million for inpatient costs from the GST pool and \$85 million for higher-than-average costs of primary care, outpatients and other state government health costs.
- Unlike other beneficiary states, Tasmania does not spend this money on health. Instead, it goes to support the state government's overall budgetary position.
- If this \$84 million in top-up money for inpatient care was spent on the purpose for which it was given, it would pay for the treatment of about 16,000 patients with an average range of conditions, assuming national-average treatment costs.

DEATHS, COSTS AND GST

This paper examines the extent of Tasmania's high death rate and the cost of these deaths to the hospital system. It also examines whether the federal GST redistribution system adequately recognises the cost of a high death rate to the state health system and whether the Tasmanian government actually spends this money on health care.

Tasmania's high death rate

Dying costs money, particularly to the health and hospital systems. Various Australian and overseas studies have calculated that between 10% and 33% of a patient's lifetime health costs accrue in the last year of life. Together, these studies support an estimate of about 25% for both hospital and for broad health system costs.

Therefore, the rate at which deaths occur in a community has major implications for the costs of its health system. Analysis of data from the Australian Bureau of Statistics (ABS) shows that in Tasmania, death rates are substantially higher than for the nation as a whole. Tasmania has 2.3% of the nation's people but about 3% of its deaths. This state experiences about 1,000 more deaths a year – one in every four or five of Tasmanian deaths – than would be the case if deaths were spread evenly around the nation according to each state's share of the Australian population.

Deaths, Australia and Tasmania, 2010 to 2012

	2010	2011	2012
Australian deaths ^(a)	143,473	146,932	147,098
Tasmanian deaths ^(b)	4,269	4,245	4,459
2.3% of Aust deaths ^(c)	3,300	3,379	3,383
Tas deaths above population share (%) ^(d)	22.7	20.4	24.1
Tas deaths above population share (number) ^(e)	969	866	1,076

(a) Actual number of deaths in Australia.

(b) Actual number of deaths in Tasmania.

(c) Number of deaths that would be expected in Tasmania if deaths were spread evenly throughout Australia on the basis of population share.

(d) Percentage of deaths in Tasmania in excess population share.

(e) Actual deaths in Tasmania in excess of population share.

Source: ABS

The most recent ABS health survey gives, using 2010 data, further insights into where the burden falls. In Tasmania, the 969 'extra' deaths translate into an extra 4,484 potential years of life lost. The figures are boosted particularly by people dying from cancer (an extra 236 deaths), cardiovascular disease (373), endocrine and metabolic diseases including diabetes (98), mental and behavioural disorders (93) and respiratory diseases (74).

Demographics

The most likely reason for Tasmania's high death rate is to be found in its demography, including the 'hollowing out' of the population, with people in their twenties and thirties leaving the state, and older people moving here. Population figures from the ABS (for the September 2013 quarter) tell the story.

Population by age group, Tasmania, September 2013

15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79
33,905	31,779	30,153	28,895	30,313	35,224	34,719	37,857	35,320	32,973	27,937	20,615	15,171

Source: ABS

Tasmania's population is ageing far faster than the nation as a whole. Over the past 20 years the average age of the state's population has moved from being in line with the national average to being substantially above it: Tasmania now has the oldest average population of any jurisdiction. Although there is no direct, simple demographic link between ageing and costs of health, the fact that Tasmania has a higher proportion of older than younger residents means a higher death rate is inevitable.

Average (mean) population age, Australia by states and territories, 1992 and 2013

	NSW	Vic	Qld	WA	SA	Tas	NT	ACT	Aust
1992	35.26	35.07	34.27	33.72	36.06	34.86	27.92	31.49	34.82
2013	38.79	38.55	37.66	37.26	40.09	40.43	33.10	36.60	38.37

Source: ABS

Tasmanians also have poorer health than their interstate peers. Two key indicators are obesity and smoking rates, both of which can cause a range of serious and life-threatening conditions. Although obesity rates are no worse than the national average, the numbers of proportion of adults who smoke is the highest in the nation with the exception of the Northern Territory.

Health indicators: obesity and smoking rates, Australia by states and territories, 2011-12

	NSW	Vic	Qld	WA	SA	Tas	NT	ACT	Aust
Obesity	28.0%	26.0%	30.9%	29.4%	29.4%	28.5%	27.1%	25.5%	28.3%
Smoking	15.8%	18.0%	18.6%	18.6%	17.9%	22.5%	24.4%	14.7%	17.5%

Source: ABS

Another indicator of poor population health, relative to the rest of the country, is life expectancy at birth: in Tasmania, 78.7 for males and 82.6 for females; in Australia as a whole, 79.9 for males and 84.3 for females. Regardless of the composition of the population in general, life expectancy at birth indicates Tasmanians start their lives with poorer survival prospects than other Australians.

Poor health is strongly associated with low levels of education and low income. On both measures Tasmania is the worst performing of all jurisdictions, with the lowest rates of secondary school completion and the lowest per capita average weekly incomes. Low income also means people are

more likely to rely on public hospitals and Medicare bulk-billing services. In Tasmania, also, private hospitals concentrate overwhelmingly on maternity and elective surgery, with relatively little involvement in inpatient services for life-threatening conditions. Again, this puts still more pressure on the public system.

Education and household income levels: Australia by states and territories

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>	<i>Aust</i>
% year 12^(a)	59.3%	62.6%	57.8%	57.5%	52.8%	41.8%	52.1%	77.8%	59.1%
Weekly income^(b)	\$1,906	\$1,767	\$1,805	\$2,117	\$1,589	\$1,443	\$2,184	\$2,395	\$1,847

(a) 2013

(b) 2011-12

Source: ABS

Costs to the hospital system

Because the one to two years immediately preceding a person's death are so costly to the health and hospital systems, it is important to know how much Tasmania's high death rate is costing, relative to the rest of the country.

As we have seen, if deaths were distributed throughout the nation in the same proportion as the population as a whole, Tasmania in 2012 would have experienced 1,076 fewer deaths than it did.

Many studies in a number of countries have shown, though with divergent results, the extraordinarily high cost of the last few months of life. In the United States, people over 65 dying of heart failure in 2007 were found to have incurred hospital costs of \$US36,000 in the last six months of their lives.¹ In Canada, similar patients incurred \$C28,000 in the last six months.² The very high cost of care in the US may explain at least part of this difference: the Canadian experience is likely to be more comparable with Australia's.

A literature survey by Australia's Productivity Commission found American Medicare patient hospital costs for the last year of life were on average six to seven times greater than the annual costs of other over-65 patients. In Denmark, this ratio was higher – for men, 13.3 times than for other patients and for women 9.4 times.³

A New Zealand study, drawing on data from 2007 to 2009, calculated broad health expenditure (including outpatient, pharmaceutical and primary care interventions as well as inpatient costs) as 10-fold higher in the last six months of life than for patients who did not die, peaking at over \$NZ30,000 for people aged 80 or more.⁴

Few Australian studies have investigated the costs of dying to the hospital system and only one has calculated a firm dollar figure. A study of patients over 65 who died in New South Wales in 2002 and 2003 found (in common with most other studies) that hospital costs associated with dying decreased with the age of death, most probably because older people were treated less aggressively by doctors and were more likely to die in nursing homes than in hospital. There is little evidence of costs associated with people under 65 but here, too, cost is likely to be inversely proportional to age. Young people are disproportionately likely to die as a result of injury, which involves more costly treatment than most illnesses; and doctors are likely to treat young people more aggressively in an attempt to save their lives.

The NSW study calculated the inpatient costs of people in the last year of life at \$13,513 for all people over 65. This study, along with others, shows that inpatient costs incurred in the second-last year of life were about one-third of those in the final year: on the basis of 2002-03 data, taking this into account would produce a figure of \$17,972 for each patient in the final two years of life.⁵

Hospital costs have risen substantially since 2002-03, the period for which these figures were current. The national average cost of each casemix-adjusted separation (that is, for each episode of

1 Kathleen T Unroe, Melissa A Greiner et al, Resource use in the last 6 months of life among Medicare beneficiaries with heart failure, 2000-2007, *Archives of Internal Medicine*, vol 171, pp 196-203, 11 October 2010.

2 Anne Harding, *End-of-life care costs continue to climb upwards*, Reuters Health, New York 14 October 2010.

3 Productivity Commission, *Costs of death and health expenditure*, Technical paper 13, Productivity Commission, Canberra, April 2005.

4 Tony Blakely, June Anderson, et al, Health system costs by sex, age and proximity to death, and implications for estimation of future expenditure. *New Zealand Medical Journal*, vol 127, no. 1393, 2 May 2014.

5 Katina Kardamanidis, Kim Lim et al, Hospital costs of older people in New South Wales in the last year of life, *Medical Journal of Australia*, vol 187, no 7, pp 383-386, 1 October 2007.

inpatient case weighted for complexity) went from \$3,184 in 2002-03 to \$5,204 in 2011-12. Applying this proportional rise to the overall figure in the NSW study gives a result of \$29,369 for 2011-12. Because this does not take into account the costs of care for people under 65, and because hospital costs generally are higher in Tasmania than in the rest of the nation, this is likely to be a conservative estimate.

**Estimated inpatient costs incurred in the last two years of life
Tasmania, 2009-10 to 2011-12**

	2009-10	2010-11	2011-12
Total Tasmanian deaths	4,269	4,245	4,459
Cost per death (\$)	26,562	27,758	29,369
Cost of all Tasmanian deaths (\$)	113,393,178	117,832,710	130,956,371
'Extra' Tasmanian deaths	969	866	1,076
Cost of 'extra' Tas deaths (\$)	25,738,578	24,038,428	31,601,044

Deaths in excess of the number which would be expected from Tasmania's overall population share are estimated to cost the state's hospitals more than \$30 million a year in terms of inpatient care in the last two years of life. This amount represents a load specifically falling on Tasmania and its hospital system, and which is not felt by the rest of the nation.

The total inpatient cost of treating all inpatients during the last two years of life is estimated to amount to more than \$130 million.

Policy implications

Such a significant and little understood area of disproportionate health costs facing a small state like Tasmania has serious implications for policy makers. Among these are:

- Whether the system of Commonwealth GST distribution compensates Tasmania for dealing with such a high share of the national health costs associate with death;
- Whether the state is spending enough to allow its public hospitals to treat patients nearing death;
- Whether treating so many terminally ill patients is diverting resources away from other patients;
- Whether more appropriate and less expensive treatment and care options should be available for the terminally ill.

GST distribution: is it enough?

Because some states are richer than others and find it easier to fund the services their people need, the Commonwealth Grants Commission adjusts GST payments so each state (assuming equal efficiency in all states) is more or less equally able to provide services such as hospital, schools, police and justice, roads and so on. Tasmania is a beneficiary of this process, known as horizontal fiscal equalisation: this state has 2.3% of Australia’s population but gets about 3.5% of the national GST pool.

In making its calculations, the Grants Commission takes into account the effect of demographic factors on inpatient costs including the number of people over 65 and the number of people with lower socio-economic status but not other health risk-factors, such as smoking rates, blood pressure data and education levels. When assessing Tasmania’s ‘expense drivers’ for admitted patient care, the Commission calculated 16.8% for ‘age 65+’ (against a national average of 14.2%) and 32.4% for ‘low SES population’ (national average 20.3%). While this goes at least most of the way toward recognising the inpatient costs of the state’s high death rate, it may not be a complete calculation.

Nevertheless, it delivers more benefit to Tasmania than to any other jurisdiction except the Northern Territory – \$163 per head of population, or a total of \$84 million extra:

Effect of the admitted patient services assessment on the distribution of 2014-15 GST

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>
\$ (million)	144	-502	-53	38	171	84	-118	236
\$ per capita	19	-85	-11	14	101	163	-298	968

Source: Commonwealth Grants Commission

This ought to be enough to make up for most, if not all, of the burden of Tasmania’s demography on inpatient costs in its public hospitals. Another category of relevance to demographic health costs is ‘Community and Other Health Services’, under which the Grants Commission allocates an additional \$85 million to Tasmania (or \$166 per head) to pay for higher-than-average state government’s expenditure on the primary care, outpatients, prevention and early intervention services for which it is directly responsible.

Does the state government spend this extra money on health and hospitals?

In 2014-15, Tasmania will receive as part of the redistribution of the national GST pool an extra \$169 million, in excess of its population share, to allow it to fund the additional health services demanded by the state's demographics: \$84 million for admitted patient care and \$85 million for state-controlled primary care, outpatient and other areas needing above-average resourcing. Together, these GST payments amount to \$169 million, or \$329 for every resident of Tasmania.

However, this additional money being given to Tasmania to fund health is not being used for this purpose. In both admitted patient care and overall state government health funding, Tasmania spends at or below the national average *per capita*:

Average recurrent health expenditure per person (\$), current prices, all sources, 2007-08 to 2011-12

Year	NSW	Vic	Qld	WA	SA	Tas	NT	Average
2007-08	4,652	4,571	4,581	4,690	4,889	4,627	6,000	4,664
2008-09	4,982	4,944	4,977	5,025	5,298	4,971	6,581	5,028
2009-10	5,260	5,302	5,329	5,141	5,608	5,136	6,556	5,320
2010-11	5,424	5,615	5,549	5,516	5,900	5,570	7,325	5,580
2011-12	5,711	5,849	5,916	5,758	6,258	5,823	8,512	5,881

Source: AIHW, Health expenditure Australia 2011-12. ACT data are not available.

When we look specifically at the direct contribution of state and local government (stripping out the Commonwealth contribution) a very similar pattern emerges:

Recurrent health expenditure, state and local government sources, 2011-12

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Total (\$m)	9,400	6,629	7,374	4,142	3,068	742	897	927	33,179
Per capita (\$)	1,294	1,187	1,631	1,731	1,862	1,463	2,417	3,984	1,473

Sources: AIHW, Health Expenditure Australia 2011-12; ABS, Population Estimates.

In 2014-15, the extra GST grant given to Tasmania specifically for health amounts to \$346 for each Tasmanian resident. If the GST money had been spent as intended, the per-capita figures above would rise by a commensurate amount and in each case would be substantially higher than the national average.

When we look at the specific costs of inpatient (or admitted patient) care, the picture is again similar:

Expenditure on admitted patient care (\$m), public hospitals, all sources, 2010-11 to 2011-12

Year	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Average
2010-11 Total (\$m)	8,079	6,409	5,085	2,626	2,073	552	491	404	25,716
2010-11 Per capita (\$)	1,125	1,166	1,146	1,132	1,270	1,082	1,346	1,754	1,160
2011-12 Total (\$m)	8,939	6,848	5,258	3,133	2,264	627	644	453	28,167
2011-12 Per capita (\$)	1,231	1,227	1,164	1,310	1,375	1,225	1,735	1,947	1,251
2012-13 Total (\$m)	9,334	7,067	5,247	3,465	2,295	637	637	485	29,167
2012-13 Per capita (\$)	1,269	1,243	1,137	1,398	1,381	1,243	1,685	2,037	1,272

Sources: AIHW, Australian Hospital Statistics; ABS, Population Estimates

Not only has the state government failed to spend even the national average amount on health; it has

over many years also siphoned off all of the extra money given to it by other states, through the Grants Commission, to treat the specific health needs of the Tasmanian population. This money appears to have gone instead to support the government’s general budgetary position, which is already supported by separate GST allocations to make up for the state’s relative inability to raise its own revenue, for non-health aspects of demography, and the general state of its economy.

As can be seen in the table on page 7, the main beneficiary jurisdictions from this measure are the Northern Territory, Tasmania and South Australia. The table above shows that admitted-care spending in both SA and the NT is higher than the national average by about the amount they receive in GST redistribution. That is not the case for Tasmania.

The consequences of this diversion of funding in Tasmania are serious. In 2011-12 the Australian Institute of Health and Welfare calculated the cost of treating the average Australian inpatient, weighted for complexity of condition, at \$5,200. On that basis, the \$84 million in GST allocation for admitted patient care to be received this financial year would treat over 16,000 people.

The extent of unmet demand for hospital and other health services is unknown but is substantial: the length of waiting lists for elective surgery and for specialist consultations reveal part of the picture. Because the state government has for so long failed to spend the money required to meet the specific needs of the population – and which has been made available to it through fiscal equalisation – appears to be a major driver of the growing levels of unmet demand, along with the relative cost-inefficiency of Tasmanian public hospitals.

Do the treatment requirements of terminally ill patients divert services from other patients?

The disproportionate difficulty that Tasmanian public hospitals have in dealing with less-acute conditions – such as elective surgery patients and those in lower-urgency categories needing specialist treatment – confirm anecdotal reports that less seriously ill people are being squeezed out of the system by those needing more urgent attention. That includes, of course, the terminally ill.

An indicator is the comparatively long waiting times – by far the worst in the country – for patients needing elective surgery.

Proportion of elective surgery patients waiting more than 365 days, 2012-13

<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>	<i>Aust</i>
2.8%	3.3%	2.5%	1.5%	1.0%	11.5%	4.1%	3.3%	2.7%

Source: AIHW, Australian Hospital Statistics 2012-13: elective surgery waiting times

Another indicator of the conflict between seriously ill and less-urgent patients caused by Tasmania’s severe rationing of hospital services is the high number of elective procedures being ‘bumped’ from surgeons’ lists to make room for more urgent cases.

Elements of these shortcomings can be put down to poor administration and inefficient working methods but the situation is made much more serious by the diversion of so much federal funding intended to treat patients like these.

Should more appropriate and less expensive treatment and care options be available for the terminally ill?

Many studies have shown that the cost of inpatient care associated with death decreases with age.⁶ People under 60 facing death cost substantially more than those who are older; the NSW study, for instance, calculated the average inpatient costs of death declined from \$17,927 for people aged 65 to 74, down to \$7,028 for those aged over 95. The authors commented:

The difference relates at least in part to place of death. Almost three-quarters of people who died aged 95 or more died out of hospital, and one-fifth had not used any inpatient hospital services in their last year of life ... The likelihood of living in residential aged care increases with age, and the threshold of admission to hospital is likely to be higher for these residents than for older people living in the community.⁷

It is also probable that doctors are less likely to use aggressive treatments in older patients in an effort to keep them alive. The attitude to death in a 30 year old is different from that to death in someone aged 85 or 90.

A third explanation for the high cost of hospital care is a lack of palliative care for the terminally ill, an option which for many people facing death is both less distressing and more clinically appropriate than admission to an acute hospital ward. It is also likely to be much cheaper, at least for those patients who are not admitted for frequent hospital inpatient care anyway.

In reviewing this issue the editor of the *Medical Journal of Australia* wrote:

Palliative care and aged care should not primarily be the province of the hospital and the acute care system, and our continued acceptance of this and of the concentration of health care spending in the last months of life is no longer tenable. It represents both bad care and a waste of money.⁸

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August 2014

6 Martin Bardsley, Theo Georghiou, *Social care and hospital use at the end of life*, Nuffield Trust, UK, December 2012.

7 Kardamanidis et al: *ibid.*

8 Annette Katelaris, Time to rethink end-of-life care, *Medical Journal of Australia*, vol 194, no 11, p 563, 6 June 2011.

ADDENDUM: A note on GST redistribution

This paper argues that Tasmania is failing to use the money it is given to fund its health system. This finding relies on a somewhat technical examination of the way the Goods and Services Tax is split up between the states.

The Commonwealth Grants Commission has the task of allocating GST revenue so that all states and territories are capable of delivering a similar level and quality of services to their people, no matter whether a particular state is rich (like Western Australia) or poor (like Tasmania). This is called Horizontal Fiscal Equalisation.

In making its assessments of the resources and of the needs of each state, the Commission looks at two broad areas – revenue, or the capacity of a state government to raise its own revenue; and expenditure, or the particular needs of that state’s population for services.

On the revenue side, Tasmania’s economy is less able than most other state economies of providing the government with the money it needs to provide the services all Australians expect. So in 2014-15 Tasmania’s share of the GST pool will be boosted by \$595 billion to make up for our relative lack of mining revenue, payroll tax, land tax, stamp duties and so on.

If all state populations needed exactly the same levels of services, the Commission could stop there, with all states funding their services by an identical *per capita* amount – the national average for everything.

But different states have different requirements. In health, the Commission believes Tasmanians need more funding than most other Australians – mainly because of the age make-up of our population and the larger-than-average number of people with low socio-economic status. So Tasmania this year will be given \$84 million in extra GST to fund inpatient (admitted care) services and an extra \$85 million for out-of-hospital services – outpatients, community clinics, prevention, home care and so on. That’s a total this year of \$169 million.

In other words, the Grants Commission believes the Tasmanian government needs to spend \$169 million (or \$329 per head of our population) more than the national average in order to provide the same level of care other Australians have.

But, as the tables on page 8 show, Tasmania does not spend extra money on health. In fact, it spends a little *less* than the national average. The money – which the Commonwealth Grants Commission calculates that our health services ought to have – is paid into the state Treasury. From there it is spent on many things – but not on health.

There is no law or inter-governmental agreement requiring this money to be spent on health and hospitals. But the effect of such a large funding shortfall on a relatively small health system cannot be anything other than devastating.

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