

Updated social and economic costs of alcohol, tobacco, and drug use in Australia, 2022/23

The George Institute for Global Health

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Thomas Gadsden, Matt Craig, Stephen Jan,
Alexandra Henderson and Barry Edwards



The George Institute
for Global Health

1. Background

From 2016 to 2020, the National Drug Research Institute (NDRI) produced a series of reports estimating the social and economic costs in Australia of the following drugs: tobacco¹, opioids², cannabis³, methamphetamine⁴ and alcohol⁵. Reflecting their societal perspective, these comprehensive estimates cover the direct and intangible costs of premature mortality, morbidity, health care utilisation, workplace, road accidents, lost productivity, and costs to the criminal justice system. These influential reports have been widely cited, as recently as the 2023 report 'Alcohol, tobacco & other drugs in Australia' by the Australian Institute for Health and Welfare (AIHW) and the 2022 report 'Understanding the Cost of Addiction in Australia' by Rethink Addiction and KPMG^{6,7}. However, these reports are now several years old and are also not directly comparable as they were conducted in different years. Updated and comparable estimates on the economic burden of alcohol, tobacco and drug use in Australia are required by policymakers to inform priority setting and the development of appropriate policy responses.

2. Methodology

2.1 Methods of the NDRI studies

The NDRI reports estimated the net social cost of alcohol, tobacco, and drug use of one particular year, respectively. Study years were selected based on data availability. In each study, cost calculations were based on the prevalence approach, focussing on the costs of harm that occurred in the study year. For example, the number of deaths and ill health associated with alcohol, tobacco and/or drug use, and the long-term future costs of lost productivity associated with those deaths. Due to differences between drug types, there are some differences in the costs included and minor methodology variations across reports. For instance, in the case of tobacco use, additional analysis was required to account for the time lag before mortality and morbidity is experienced. Prevalence and cost data was obtained from a wide range of sources and in the case of missing or incomplete data, assumptions were required. Due to these uncertainties, each report provides a best estimate of costs, with a lower and upper range.

Reported costs are categorised as tangible or intangible. Tangible costs are those which are quantifiable based on existing market prices and are relatively straightforward to estimate. For instance, they may include the cost of additional health care or the lost value of expected lifetime employment. On the other hand, intangible costs are those related to reduced quality-of-life, including the social and emotional costs of disability, physical suffering and psychological distress.

These costs are not limited to those who use alcohol, tobacco or drugs alone, but may also be experienced by their partners, families or social networks, as well as victims of crime. The NDRI reports estimate intangible costs using what is known as the 'value of a statistical life year', which accounts for lost productivity and lost years of being alive or in full health.

2.2. Aims

The objective of this work was to update the societal costs of alcohol, tobacco and drug use reported by the NDRI. To adjust these cost estimates for health care inflation, historic and latest available price index data for the health sector was sourced from the AIHW⁸. The national total health price index shows the amount of change in average health prices from year to year at the national level and can be used as a broad deflator for the health sector. The health care inflation index ranged from 1.91% in 2013/14 to 2.83% in 2021/22 (range: 1.66% (2017/18) - 2.83% (2016/17)). Updated estimates were calculated by adjusting the costs reported for each substance by the relevant annual health price index. Between 2020/21 to 2021/22, health prices grew by 2.83% on average. This average rate was applied to project costs to 2022/23. Applying a fixed rate of inflation to the health sector is a relatively conservative approach considering recent reports of increased hospital costs. Moreover, while general inflation is expected to decrease by 2023, the cost of health goods and services typically experience higher inflation⁸.

3. Results

The total social and economic cost of tobacco, opioids, cannabis, methamphetamine, and alcohol use was \$257.1 billion in 2021/22, an increase of 12.3% from the original total estimate. In 2022/23, the projected total combined cost of all drugs was \$264.4 billion, an increase of 15.7% from the original estimate. On average, costs per drug increased by 13.5% from their original estimates to 2021/22 and by 16.3% to 2022/23.

In 2022/23, tobacco use was the largest contributor to costs (\$159.7 billion, 60.4%), followed by alcohol use (\$74.9 billion, 28.4%). Intangible costs associated with premature mortality, calculated using the value of a statistical life (VoSL) approach, were the main cost drivers. In 2022/23, this domain accounted for 67.3% (\$107.5 billion) of total tobacco costs, 64.3% (\$11.8 billion) of total opioids cost and 38.8% (\$29.1 billion) of total alcohol costs. Smoking attributable ill-health accounted for 18.7% (\$29.9 billion) of total tobacco costs and disability-adjusted life years (DALYs) due to alcohol consumption accounted for 31.0% (\$23.3 billion) of total alcohol costs. Taken together (opioids, methamphetamine and cannabis), the cost of illicit drugs amounted to 11.2% (\$29.7 billion) of total drug costs in 2022/23.

Table 1. Total societal cost by drug type by estimate year, AUD, billions

Cost	Alcohol	Tobacco	Opioid	Meth	Cannabis	Total
Original NDRI cost estimates	66.8	136.9	15.8	5.0	4.5	229.0
Updated costs (2020/21)	72.9	155.3	17.9	5.9	5.1	257.1
Projected costs (2022/23)	75.0	159.7	18.4	6.1	5.2	264.4

Table 2. Total societal cost by drug, FY2022/23, billions

Cost domain	Alcohol	Tobacco	Opioid	Meth	Cannabis	Total
Tangible costs	20.4	22.5	6.6	5.1	5.1	59.6
Intangible costs	54.6	137.3	11.8	0.9	0.1	204.8
Total	75.0	159.7	18.4	6.1	5.2	264.4
Proportion of total	28.4%	60.4%	7.0%	2.3%	2.0%	-

Figure 1 shows the total tangible and intangible costs of alcohol, tobacco and illicit drugs for 2021/22 and projected costs for 2022/23. Figures 2 to 4 provide a breakdown of the total costs for alcohol, tobacco and illicit drugs by domain for 2022/23. Costs by tangible and intangible domains are provided in Tables 3 and 4.

Figure 1. Total tangible and intangible societal costs of alcohol, tobacco and illicit drugs, FY 2022/23, billions

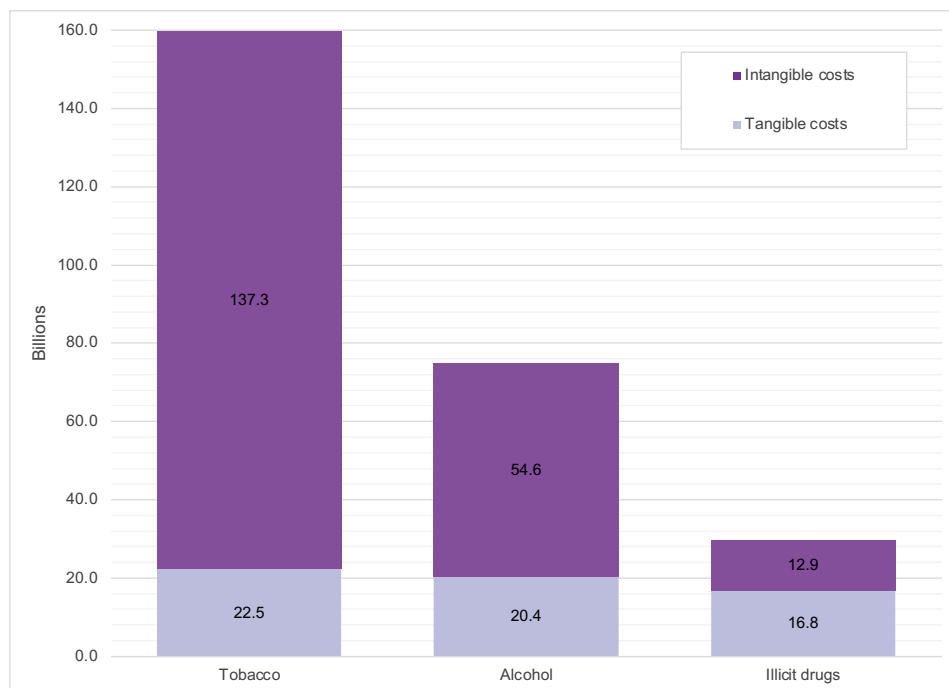


Figure 2. Societal cost of alcohol by domain, AUD 2022/23, billions

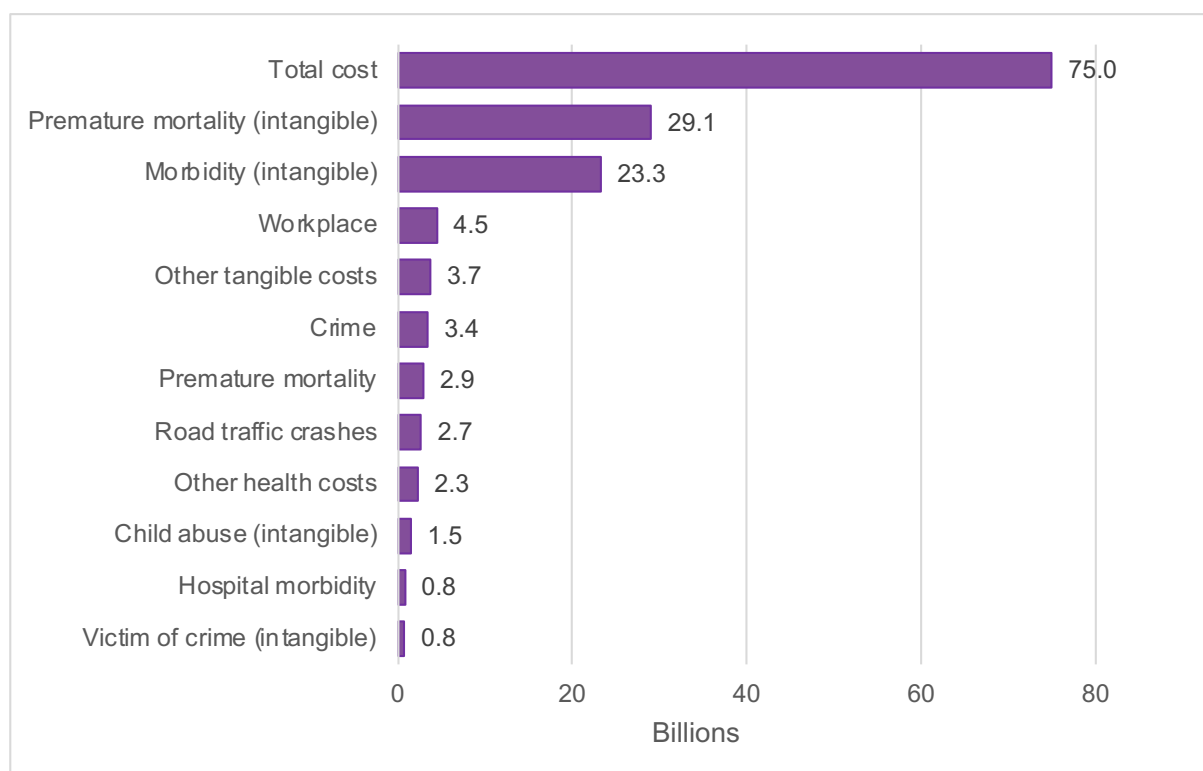


Figure 3. Societal cost of tobacco by domain, AUD 2022/23, billions

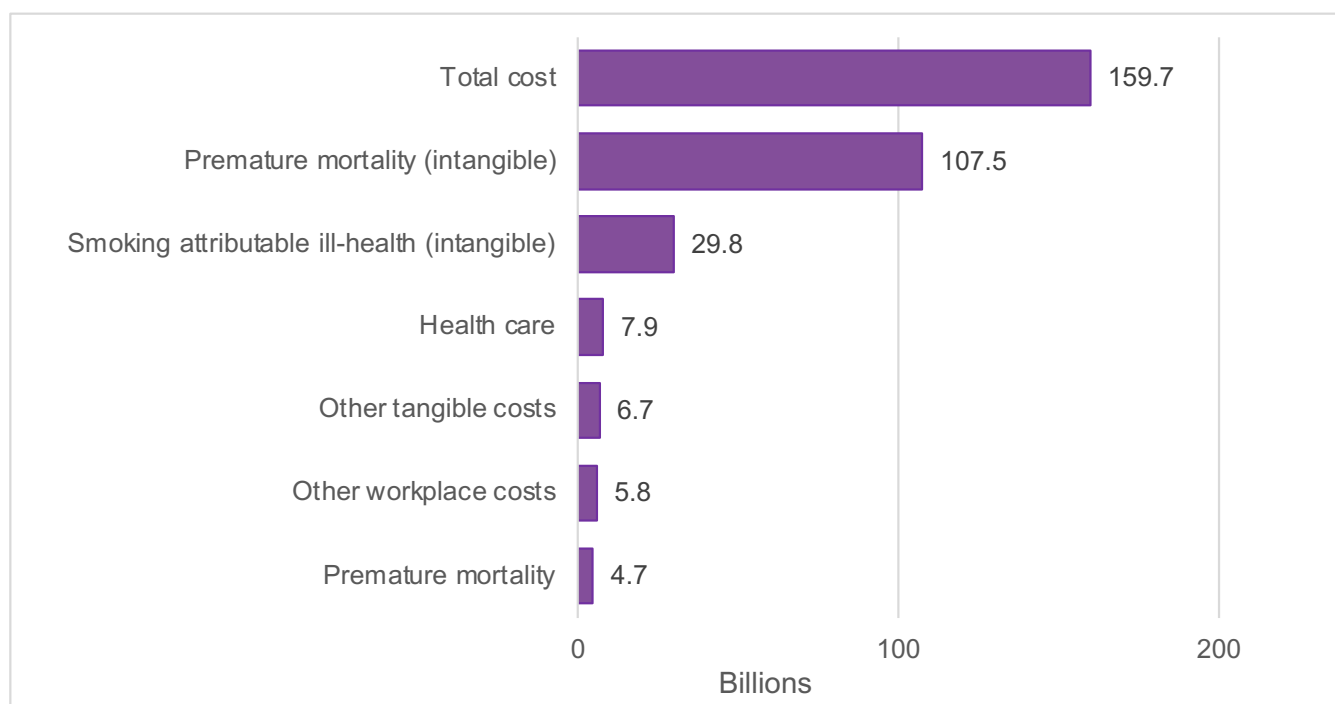
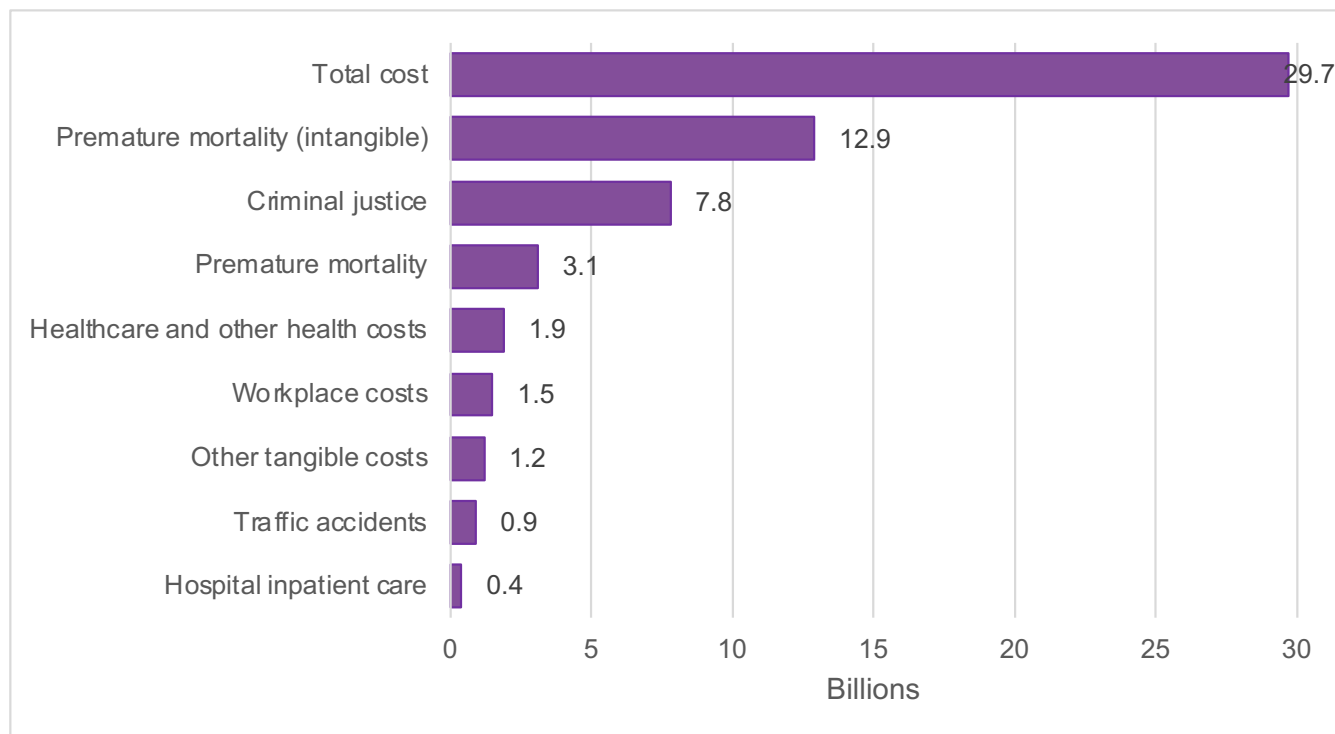


Figure 4. Societal cost of illicit substances by domain, AUD 2022/23, billions



4. Discussion

The social costs associated with alcohol, tobacco, and drug use in Australia are substantial. The tangible costs alone are projected to have reached \$59.6 billion in 2022/23, largely driven by the cost of tobacco (\$22.5 billion) and alcohol consumption (\$20.4 billion). Intangible costs are projected to have reached \$204.8 billion in 2022/23, mainly premised on the value of a statistical life year, and lost quality of life and productivity. Tobacco use accounts for approximately two-thirds (67.3%) of this amount.

Comparing different cost estimates of alcohol and drug use is impaired by the range of economic models, various costs and conditions included. Nevertheless, it is promising that these updated figures align with those published by Rethink Addiction and KPMG in 2022 on the cost of addiction in Australia². That report estimated that the tangible total costs of alcohol, tobacco, other drugs, and gambling addiction equate to \$80.3 billion. However, including intangible costs would increase this amount to approximately \$250 billion. As reported here, costs are largely driven by tobacco related harm, including \$134.2 billion in intangible costs.

Lastly, as the NDRI reports were based on prevalence rates, changes in alcohol, tobacco and drug use patterns may introduce some uncertainty over these updated figures. For instance, the long-term reduction in tobacco consumption, increased usage of vaping, the role of medicinal cannabis, changing trends in alcohol consumption, and new illicit products on the market may potentially affect societal costs. Similarly, it is worth noting limitations of the original NDRI reports, including the absence of certain cost domains such as harm to low-risk consumers, and, in the case of alcohol costs, the inability to quantify the costs of foetal alcohol spectrum disorders due to insufficient data. It should also be acknowledged that the updated costs provided in this report may differ based on the deflator. However, given that the majority of these societal costs are incurred in the health sector, the health price index was deemed more appropriate than the consumer price index. Given these uncertainties, there may be potential value in a new study on the societal costs of alcohol, tobacco, and drug use in Australia.

Table 3. Tangible societal costs by drug type, FY2022/23

Cost domain	Alcohol	Tobacco	Opioids	Meth.	Cannabis	Total
Premature mortality	2,927,843,599	4,719,932,660	3,061,542,702		34,476,089	10,743,795,050
Healthcare and other health costs	2,312,861,336	7,919,003,504	967,775,986	242,102,930	683,069,944	12,124,813,699
Hospital morbidity and inpatient care	804,351,388	-	290,914,973	-	149,941,119	1,245,207,480
Avoided healthcare costs	-	-2,655,448,164	-161,680,697	-	-732,254	-2,817,861,115
Workplace	4,479,980,375	5,816,701,049	535,152,637	350,130,030	653,627,412	11,835,591,503
Crime and criminal justice	3,433,303,104	-	1,092,166,561	3,925,352,044	2,799,683,108	11,250,504,817
Road traffic crashes	2,688,741,553	-	560,772,267	151,427,493	226,218,957	3,627,160,270
Alcohol purchases	1,276,319,070	-	-	-	-	1,276,319,070
Other tangible costs*	2,461,937,906	6,651,989,068	226,309,138	463,110,773	548,352,224	10,351,699,108
Total tangible costs	20,385,338,330	22,452,178,118	6,572,953,566	5,132,123,270	5,094,636,598	59,637,229,881
Proportion of total tangible costs	34.2%	37.6%	11.0%	8.6%	8.5%	-

*Other tangible costs' include a range of smaller costs including child maltreatment, prevention and harm reduction services and costs that differ by drug, for example the cost of tobacco purchases, clandestine laboratories and fires arising from smoking.

Table 4. Intangible societal costs by drug type, FY2022/23

Cost domain	Alcohol	Tobacco	Opioids	Meth.	Cannabis	Total
Premature mortality (VoSL)	29,056,539,732	107,468,290,193	11,815,923,568	945,808,701	123,909,192	149,410,471,386
Smoking attributable ill-health	-	29,825,101,946	-	-	-	29,825,101,946
Victim of crime (DALYs)	779,398,284	-	-	-	-	779,398,284
Morbidity (DALYs)	23,264,527,565	-	-	-	-	23,264,527,565
Child abuse (DALYs)	1,497,728,805	-	-	-	-	1,497,728,805
Total intangible costs	54,598,194,385	137,293,392,139	11,815,923,568	945,808,701	123,909,192	204,777,227,985
Proportion of total intangible costs	26.7%	67.0%	5.8%	0.5%	0.1%	-

*No intangible costs reported for methamphetamine in the original NDRI reports

5. References

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