

**The economic cost of violence
against children and young people**
Advocate for Children and Young People

June 2019

Contents

Glossary	i
Executive summary	i
1 Introduction	1
1.1 Violence experienced by children and young people	1
1.1.1 Impacts of violence on children and young people	1
1.1.2 Tackling violence against children and young people	2
1.2 Previous estimates by Deloitte Access Economics and methodological differences	2
1.3 Scope of this report	2
2 Methodology	4
2.1 Defining violence against children and young people	4
2.2 Overview of the methodology	4
2.3 Number of children and young people who experienced violence	5
2.3.2 Reported cases of abuse and violence in FY16-17	6
2.3.3 Total cases (reported and unreported) of abuse and violence in FY16-17	8
2.3.4 Lifetime cases of violence against children and young people in FY16-17	9
2.4 Impact of violence against children and young people	9
2.5 Costs associated with impacts of violence	10
2.5.1 Scope of costs	10
2.5.2 Method for attributing costs to violence against children and young people	11
2.5.3 Cost assumptions and data sources	12
2.6 Caveats and considerations	12
2.6.1 Number of people who experience violence as a child or young person	12
2.6.2 Impacts of violence against children and young people	13
2.6.3 Costs	13
3 Number of children and young people who experience violence	14
3.1 Reported cases of violence in FY16-17	14
3.2 Total cases of violence in FY16-17	18
3.3 Lifetime cases	20
3.4 Mortality	21
3.5 Co-occurrence of harm	21
3.5.1 Exposure to multiple types of abuse and violence	21
3.5.2 Exposure to multiple occasions of abuse and violence	22
4 Annual costs	24
4.1 Health system costs	24
4.2 Education costs	26
4.3 Justice system costs	26
4.4 Child protection system costs	28
4.5 Housing and Homelessness costs	29
4.6 Productivity losses	30
4.7 Deadweight losses	31
4.8 Quality of life and lifespan	33
4.8.1 Burden of disease	33
4.8.2 Premature mortality	34

5	Lifetime costs	35
5.1	Health system costs	35
5.2	Education costs	37
5.3	Justice system costs	37
5.4	Child protection system costs	39
5.5	Housing and Homelessness Costs	40
5.6	Productivity losses	42
5.7	Deadweight losses	42
5.8	Quality of life and lifespan	44
5.8.1	Burden of disease	44
5.8.2	Premature mortality	44
6	Qualitative impacts	45
6.1	First generation impacts	45
6.1.1	Cancer	45
6.1.2	Factors that influence the extent of the negative impacts	45
6.2	Second generation impacts	46
6.2.1	Intergenerational transfer of violence	46
6.2.2	Relationship impairment and re-victimisation	46
6.2.3	Juvenile delinquency	46
6.2.4	Adult criminality	47
6.2.5	Homelessness	47
6.2.6	Prostitution	47
7	Summary of costs	48
7.1	Annual costs	48
7.2	Lifetime costs	49
7.3	The additional cost of co-occurrence	49
7.4	Distribution of financial costs by bearer	50
	References	52
	Appendix A Population attributable fractions	57
	Appendix B Cost assumptions and data sources	60
	B.2. Education costs	62
	B.3. Justice system costs	62
	B.4. Child protection system costs	63
	B.5. Supported accommodation and public housing costs	64
	B.6. Productivity losses	64
	B.7. Deadweight losses	65
	B.8. Quality of life and lifespan	66
	B.8.1. Burden of disease	66
	B.8.2. Premature mortality as a direct consequence of violence against children and young people	67
	B.9. Cost bearers	67
	Appendix C : Co-occurrence	70
	Appendix D : Cost of violence, % breakdown	72
	Limitation of our work	73
	General use restriction	73

Charts

Chart i	Number of cases of violence against children and young people in NSW and Australia	i
Chart ii	Estimated annual cost of violence against children and young people in 2016-17	ii
Chart iii	Estimated annual cost of violence against children and young people in 2016-17, NSW State Government departments (\$m)	ii
Chart iv	Estimated annual cost of violence against children and young people in 2016-17, Federal Government departments (\$m)	ii
Chart v	Estimated annual cost of violence against children and young people in 2016-17, Individuals and Society (\$m)	ii
Chart vi	Breakdown of the estimated lifetime cost of violence against children and young people in 2016-17	iii
Chart 3.1	Reported number of cases of violence in FY16-17, for NSW and Australia, by type of violence	15
Chart 3.2	Number of reported cases of violence in NSW in FY16-17, by age and gender	16
Chart 3.3	Estimated number of cases of violence in Australia in FY16-17, by age and gender	17
Chart 3.4	Estimated number of total cases of violence, by type of violence	19
Chart 3.5	Estimated number of total cases of violence in NSW in FY16-17, by age	19
Chart 3.6	Estimated number of total cases of child violence in Australia in FY16-17, by age	20
Chart 3.7	Distribution of total cases that are new cases in FY16-17, NSW and Australia	20
Chart 3.8	Estimated number of lifetime cases of violence, by type of violence	21
Chart 4.1	Annual health system costs for NSW in FY16-17, by type of expenditure and violence	25
Chart 4.2	Annual health system costs for Australia in FY16-17, by type of expenditure and violence	25
Chart 4.3	Annual justice system costs for NSW in FY16-17, by type of expenditure and violence	27
Chart 4.4	Annual justice system costs for Australia in FY16-17, by type of expenditure and violence	27
Chart 4.5	Annual child protection system costs for NSW in FY16-17, by type of expenditure and violence	28
Chart 4.6	Annual child protection system costs for Australia in FY16-17, by type of expenditure and violence	29
Chart 4.7	Annual housing and homelessness costs for NSW in FY16-17, by type of expenditure and violence	30
Chart 4.8	Annual housing and homelessness costs for Australia in FY16-17, by type of expenditure and violence	30
Chart 4.9	Annual costs of reduced employment and lost productivity for Australia and NSW, by type of violence	31
Chart 4.10	Annual deadweight losses for NSW in FY16-17, by type of expenditure and violence	32
Chart 4.11	Annual deadweight losses for Australia in FY16-17, by type of expenditure and violence	33
Chart 5.1	Health system lifetime costs for NSW, by condition and type of violence	36
Chart 5.2	Health system lifetime costs for Australia, by condition and type of violence	36
Chart 5.3	Lifetime costs of crime for NSW, by type of expenditure and violence	38
Chart 5.4	Lifetime costs of crime for Australia, by type of expenditure and violence	38
Chart 5.5	Lifetime child protection system costs for NSW, by type of expenditure and violence	40
Chart 5.6	Lifetime child protection system costs for Australia, by type of expenditure and violence	40
Chart 5.7	Lifetime costs of housing and homelessness for NSW, by type of expenditure and violence	41
Chart 5.8	Lifetime costs of housing and homelessness for Australia, by type of expenditure and violence	41
Chart 5.9	Lifetime costs of reduced employment and lost productivity for NSW and Australia, by type of violence	42
Chart 5.10	Lifetime deadweight losses for NSW, by type of expenditure and violence	43

Chart 5.11 Lifetime deadweight losses for Australia, by type of expenditure and violence	43
Chart 7.1 Proportion of annual (FY16-17) and lifetime costs for NSW, borne by government or individuals and society	50
Chart 7.2 Proportion of annual costs (FY16-17) for NSW, detailed split by State or Federal government	51

Tables

Table 2.1 Definitions of the five main categories of child abuse and neglect	4
Table 2.2 Types of estimates on number of people who experienced child abuse or violence as a young person	6
Table 2.3 Ratio of annual to lifetime prevalence	8
Table 2.4 Scope of costs estimated for children and / or young people	11
Table 3.1 Number of reported cases of violence in FY16-17, by age and gender – NSW	14
Table 3.2 Number of reported cases of violence in FY16-17, by age and gender – Australia	15
Table 3.3 Total number of children and young people who experienced violence in FY16-17, by age and gender – NSW	18
Table 3.4 Total number of children and young people who experienced violence in FY16-17, by age and gender – Australia	18
Table 3.5 Exposure to multiple types of abuse in FY16-17 and lifetime cases, males	22
Table 3.6 Exposure to multiple types of abuse in FY16-17 and lifetime cases, females	22
Table 3.7 Number of substantiated cases per child in FY16-17, for NSW and Australia	22
Table 4.1 Annual health system costs for NSW and Australia in FY16-17, by type of violence	24
Table 4.2 Annual additional education assistance costs for NSW and Australia in FY16-17, by type of violence	26
Table 4.3 Annual justice system costs for NSW and Australia in FY16-17, by type of violence	26
Table 4.4 Annual child protection system costs for NSW and Australia in FY16-17, by type of violence	28
Table 4.5 Annual supported accommodation and public housing costs for NSW and Australia in FY15-16, by type of violence	29
Table 4.6 Annual costs of reduced employment and productivity losses for NSW and Australia in FY16-17, by type of violence	31
Table 4.7 Annual burden of deadweight losses for NSW and Australia in FY16-17, by type of violence	32
Table 4.8 Annual burden of disease costs for NSW in FY16-17, by type of violence	33
Table 4.9 Annual burden of disease costs for Australia in FY16-17, by type of violence	33
Table 5.1 Health system lifetime costs for NSW and Australia and breakdown, by type of violence	35
Table 5.2 Lifetime costs of additional education assistance, NSW and Australia, by type of violence	37
Table 5.3 Lifetime costs of crime for NSW and Australia, by type of violence	37
Table 5.4 Lifetime costs of child protection for NSW and Australia, by type of violence	39
Table 5.5 Lifetime costs of housing and homelessness costs for NSW and Australia, by type of violence	40
Table 5.6 Lifetime costs of reduced employment and lost productivity for NSW and Australia, by type of violence	42
Table 5.7 Lifetime deadweight losses for Australia and NSW, by type of violence	42
Table 5.8 Lifetime burden of disease costs for NSW, by type of violence	44
Table 5.9 Lifetime burden of disease costs for Australia, by type of violence	44
Table 7.1 Summary of annual financial and non-financial costs of violence against children and young people, FY16-17	48

Table 7.2 Summary of lifetime financial and non-financial costs of violence against children and young people, FY16-17	49
Table 7.3 Annual and lifetime costs for NSW and Australia, adjusted and unadjusted, for co-occurrence	50
Table A.1 Male PAFs	57
Table A.2 Female PAFs	58
Table B.1 Total health system cost inputs (FY16-17 \$ million)	60
Table B.2 Total education cost inputs (FY16-17 \$ million)	62
Table B.3 Total justice system cost inputs (FY16-17 \$million)	62
Table B.4 Total child protection system cost inputs (FY16-17 \$ million)	63
Table B.5 Total accommodation cost inputs (FY16-17 \$ million)	64
Table B.6 Difference in employment outcomes between victims Vs non-victims– productivity losses inputs (Australia and NSW)	65
Table B.7 Proportion of costs that are funded by Government	65
Table B.8 Total number of DALYs attributable to violence against children and young people	66
Table B.9 Number of deaths as a direct consequence of violence against children and young people (FY16-17 \$)	67
Table B.10 Cost bearer assumptions	67
Table B.11 Split of annual costs by Government Department	68
Table C.1 Co-occurrence of child abuse – Males	70
Table C.2 Co-occurrence of child abuse – Females	71
Table D.1 Cost of violence, percentage breakdown (%)	72

Figures

Figure 2.1 Methodology for cost of violence against children and young people	5
Figure 3.1 Distribution of reported cases that are new cases in FY16-17, NSW and Australia	17

Glossary

Acronym	Full name
ABS	Australian Bureau of Statistics
ACE	adverse childhood experience
ACYP	Advocate for Children and Young People
AIFS	Australian Institute of Family Studies
AIHW	Australian Institute of Health and Welfare
BMI	body mass index
CI	confidence interval
CP	Child Protection
CVD	cardiovascular disease
DALY	disability adjusted life year
DPMC	Department of the Prime Minister and Cabinet
FACS	Department of Family and Community Services
FFS	Family Support Service
FY	financial year
GI	gastrointestinal
HIV	human immunodeficiency virus
IBS	irritable bowel syndrome
IFP	Intensive Family Preservation
NA	not available
NHMRC	National Health and Medical Research Council
NSW	New South Wales
OOHC	out of home care
OR	odds ratio
PAF	population attributable fraction
PTSD	post-traumatic stress disorder
SAAP	Supported Accommodation Assistance Program
STI	sexually transmitted infection
VSLY	value of a statistical life year

Executive summary

In 2016-17, there were an estimated **154,302 cases of violence** against children and young people aged 0-24 years in NSW costing a total of **\$11.2 billion**. Of this total, approximately \$2.3 billion was borne by NSW state government departments, \$600 million by the Federal government and \$8.2 billion by individuals and the broader NSW community.

Violence against children and young people aged 0-24 years are pervasive child protection, public health and human rights issues. According to the World Health Organization, for infants and younger children, violence mainly involves child abuse and maltreatment (i.e. physical, sexual and emotional abuse and neglect), and usually by parents, caregivers or other authority figures. In recent years, the Royal Commission into Institutional Responses to Child Sexual Abuse found that tens of thousands of children have been sexually abused in many Australian institutions, including where they reside or attend for educational, recreational, sporting, religious or cultural activities.

As children reach adolescence, violence usually takes the form of peer violence (including bullying and gang violence) and intimate partner violence in addition to child maltreatment.

There has also been an increasing awareness of other types of emotional abuse such as cyber-bullying, witnessing of acts of violence or living in a home where violence is inflicted upon others. Research suggests that these all potentially have long-lasting impacts on a child or young person's social development, physical health and mental wellbeing.

In July 2016, the NSW Government launched the inaugural legislated whole-of-government Strategic Plan for Children and Young People. The aim is to ensure children and young people in NSW have opportunities to thrive, get the services they need and have their voice heard. The Plan contains six key priorities including ensuring children and young people are safe, connected, treated with respect, have relevant skills for life, are healthy and well, and are empowered to be involved in the decisions that affect them.

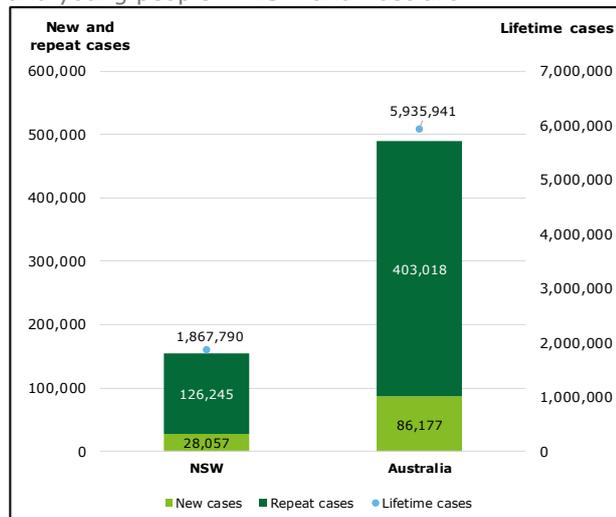
As part of the keeping children and young people safe priority, the objective is to ensure they are free from abuse, neglect, violence and serious injury. This includes children and young people

that experience domestic and family violence, and who are in or at risk of entering the child protection system.

In light of this, the Office of the Advocate for Children and Young People (ACYP) commissioned Deloitte Access Economics to provide updated estimates for the economic impact of violence against children and young people in NSW and Australia. It is anticipated that this analysis will support the ACYP and broader NSW Government in investment decisions to make NSW a safer state for children and young people. While the analysis was based on a model developed for NSW Family and Community Services in 2017, this is one of the first studies that estimates the economic cost of violence up to 24 years of age.

In 2016-17, there were an estimated **154,302 cases of violence** against children and young people (including reported and unreported cases), with **28,057 of those being new cases** (Chart i).

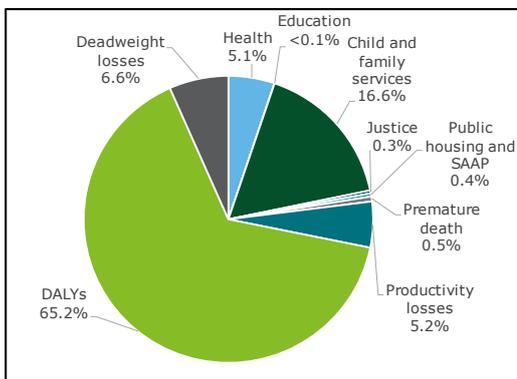
Chart i Number of cases of violence against children and young people in NSW and Australia



Source: Deloitte Access Economics estimates based on Finkelhor et al. (2013), Moore et al. (2015) and AIHW (2017)

Of the total annual cost of violence against children and young people in NSW, Disability Adjusted Life Years (DALYs) accounted for the majority. DALYs are a measure used for valuing the loss of wellbeing due to injury or disease – in this case the loss of wellbeing resulting from violence against children and young people. Chart ii provides a detailed breakdown of the components of the annual cost of violence against children and young people in 2016.

Chart ii Estimated annual cost of violence against children and young people in 2016-17

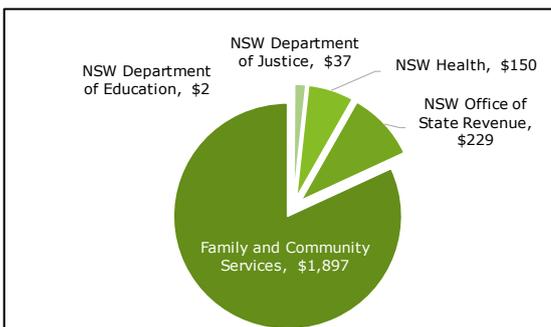


Source: Deloitte Access Economics estimates

In 2016-17, the estimated annual burden of violence against children and young people borne by NSW Government was \$2.3 billion.

Of the direct annual costs accruing to the NSW state departments, family and community services bears the majority, followed by state revenue, health, justice, education and housing (Chart iii). These cost allocations reflect the associated service utilisation as a result of violence against children and young people in NSW.

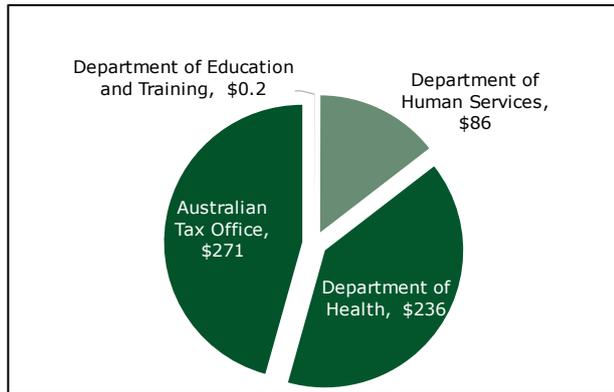
Chart iii Estimated annual cost of violence against children and young people in 2016-17, NSW State Government departments (\$m)



Source: Deloitte Access Economics estimates

In 2016-17, the estimated annual burden of violence against children and young people borne by the Federal Government was approximately \$600 million. Of the direct costs accruing to the Federal government departments, the Australian Tax Office and the Department of Health bear the majority.

Chart iv Estimated annual cost of violence against children and young people in 2016-17, Federal Government departments (\$m)

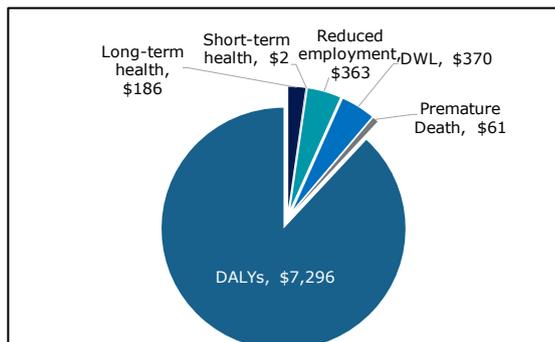


Source: Deloitte Access Economics estimates

Individuals and the broader NSW community accounted for the majority of the total annual burden of violence against children and young people in 2016-17.

When quality of life is accounted for, children and young people are the ones who end up bearing the greatest burden. As Chart v shows, the loss of wellbeing measured using DALYs, accounts for \$7.3 billion out of the total cost of \$8.2 billion borne by individuals and society. This is why it is important to ensure that they have a safe community, a safe home and safe relationships to enable them to develop to their full potential.

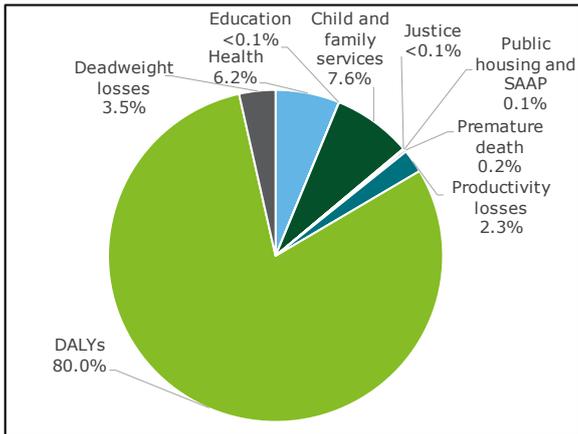
Chart v Estimated annual cost of violence against children and young people in 2016-17, Individuals and Society (\$m)



Source: Deloitte Access Economics estimates

From a lifetime perspective, the estimated total cost of the 28,057 new cases of violence against children and young people in 2016-17 was **\$20.6 billion** in NSW.

Chart vi Breakdown of the estimated lifetime cost of violence against children and young people in 2016-17



Source: Deloitte Access Economics estimates

In the longer term, the cost of violence against children and young people shifts even more toward individuals and the broader NSW community (86%), with the NSW Government bearing 10% and the Federal Government 4%.

These cost estimates presented above are just for NSW. When the costs of violence against children and young people in Australia are considered, the cost is significant.

In 2016-17, the estimated annual burden of violence against children and young people in Australia was **\$34.2 billion**; the lifetime cost was **\$78.4 billion**.

Even then, these estimates are likely to be conservative. There is uncertainty in the true prevalence and incidence of violence against children and young people as it is often underreported and undetected. Additionally, only those impacts of violence that had robust evidence on causation were included and costed; there are likely to be other impacts that are not captured such as cancers, second generation relationship impairment and criminality, etc.

Similarly, data on some impacts of violence, such as intergenerational impacts, suffer from quality and accuracy issues, which prevent quantification.

As can be seen, not only does violence against children and young people place a significant financial burden on government, this cost is borne by multiple state/territory agencies as well as the Federal Government.

The estimates show that a large proportion of the annual cost accrues to child and family services, while in the longer term, the lifetime burden shifts significantly to the health care system.

Most importantly, it is one of the most traumatic and potentially damaging experiences that can have lifelong adverse consequences for the children and young people themselves. In keeping them safe, it is imperative that investment focuses on three things:

- **Reducing the lifetime cost of children in the child and family service system** through evidence-based services that are able to augment their life trajectories, decrease service utilisation and hence improve outcomes over the longer term
- **Decreasing the prevalence and incidence of violence** through better investment in prevention and early intervention services, particularly around intimate partner violence and peer violence
- **Strengthening the whole-of-government approach** that the Strategic Plan has begun so that services are coordinated and organised across agencies

This report is an important starting point to understand the life trajectories of vulnerable children and young people, and their associated costs to government and society as a whole. Keeping children and young people safe is just one of many steps to supporting and enhancing outcomes and ensuring they live a fulfilling and productive life in Australia.

Deloitte Access Economics

1 Introduction

1.1 Violence experienced by children and young people

Violence against children and young people aged 0-24 years is a pervasive child protection, public health and human rights issue. According to the World Health Organization, for infants and younger children, violence mainly involves child abuse and maltreatment (i.e. physical, sexual and emotional abuse and neglect), and usually by parents, caregivers or other authority figures. As children reach adolescence, violence usually takes the form of peer violence and intimate partner violence in addition to child maltreatment.

There has also been an increasing awareness of other types of emotional abuse such as cyber-bullying, witnessing of acts of violence or living in a home where violence is inflicted upon others. Research suggests that these all potentially have long-lasting impacts on a child or young person's social development, physical health and mental wellbeing (for example Holt et al. 2008 and Norman et al. 2012).

1.1.1 Impacts of violence on children and young people

Children in their formative years, typically defined between 0 to 8 years, undergo rapid brain development, and have a high capacity for mental development and change (World Health Organization 2016). Early childhood is a period where children should be nurtured, and given opportunities to learn and develop to their full potential. At the same time, young children are especially vulnerable to the impacts of stress and physical harm caused by violent or abusive acts inflicted on them (World Health Organization 2018), so an environment that is free from violence and abuse is especially important for their future development.

While individuals in late adolescence and young adulthood (aged between 18 to 24 years) are arguably past their formative years, this life phase also presents significant opportunities for individuals to develop into adults who are productive and well-adjusted to society. During the phase of late adolescence and young adulthood, individuals begin to expand their capacity for empathy, to think and plan for the future, and develop a sense of identity¹. This is also the time when young people develop a more nuanced understanding of morality and justice, and establish their personal beliefs and ideology. Experience of violence – or living in an environment where they have to witness infliction of violence – during this critical phase of their life has the potential to negatively impact their transition into tertiary study, the workplace, and independent living.

The literature shows that violence against children and young people is associated with numerous long-term adverse outcomes for both the person who experienced violence, and the wider community. Short-term impacts include immediate injuries caused by assault, and being forced to live in unstable accommodation and potential homelessness. Longer term impacts include a range of physical and mental health conditions such as depression, anxiety, alcohol and drug abuse and obesity. Young people who experienced violence are also more likely to have lower educational attainment, and therefore lower productivity and poorer earnings potential in the workforce. Failing to address violence against young people also imposes significant costs on society, such as higher than average use of services like out-of-home-care (OOHC) placements, costs to the justice system, health services and use of social housing.

The consequences of violence against children and young people can be severe and long-lasting. However, if offered adequate support and protection, such impacts may be alleviated. Programs that provide support to parents and caregivers about child development, and initiatives that offer a support

¹ See 'Developmental Tasks and Attributes of Late Adolescence/Young Adulthood (Ages 18 – 24 years)' by the State Adolescent Health Resource Center (USA), accessed at <http://www.amchp.org/programsandtopics/AdolescentHealth/projects/Documents/SAHRC%20AYADevelopment%20LateAdolescentYoungAdulthood.pdf>

network to those who have experienced violence, may lessen the associated negative impacts. Understanding the full range of impacts of violence against young people, and the costs incurred by such violence, will provide insights that could inform programs and initiatives that advocate for the wellbeing and safety of children and young people.

1.1.2 Tackling violence against children and young people

One of the aims of the Sustainable Development Goals (16.2) is specifically to 'End abuse, exploitation, trafficking and all forms of violence against and torture of children'.

The NSW Government has been committed to investing in children and young people and led the development of the first legislated three-year whole-of-government Strategic Plan for Children and Young People. The Plan's goal is for children and young people in NSW to be safe, connected, respected, healthy and well, with opportunities to thrive and have their voice heard in their communities. Specifically, one of the Plan's objectives is to ensure children and young people are free from abuse, neglect, violence and serious injury.

1.2 Previous estimates by Deloitte Access Economics and methodological differences

Deloitte Access Economics has completed a range of studies that estimated the cost of child abuse and neglect. This report expands the definition of violence to 18-24 years, including intimate partner violence, youth violence (including gang violence and peer violence) and harassment and threat of violence. The box below provides a summary of results from the cost of child abuse studies by Deloitte Access Economics.

In 2008, Deloitte Access Economics prepared a report, *Cost of Child Abuse (2008)*, for the Australian Childhood Foundation that estimated the annual and lifetime costs of child abuse and neglect for the year 2007. The scope of costs included health system expenditure, education system costs, productivity losses, the costs of crime, expenditure on protection and care programs, deadweight efficiency losses and the burden of disease. On an incidence basis, the lifetime cost of children abused for the first time in 2007 was estimated as \$6.0 billion (with a lower and upper bound of \$4.9 billion and \$9.6 billion, respectively). In addition, the value of the burden of disease represents a further \$7.7 billion (lower and upper bounds of \$1.5 billion and \$29.1 billion, respectively).

In 2016, Deloitte Access Economics updated the 2008 incidence and expenditure data and published a peer-reviewed article, McCarthy et al. (2016), on the lifetime economic and social costs of child abuse and neglect in Australia. The best estimate of the total lifetime financial costs for incidence cases of child abuse and neglect in 2012-13 was \$9.3 billion (a cost per child maltreated of \$176,437), with a lower bound of \$5.8 billion. The best estimate of lifetime costs associated with reduced quality of life and premature mortality (non-financial costs) for all incidence cases of child abuse and neglect in 2012-13 was \$17.4 billion, or \$328,757 per child maltreated.

Importantly, the 2008 and 2016 estimates are not comparable to the costs estimated in the current report due to different data sources used in estimating the impacts of child abuse and neglect, and different methodologies employed in estimating certain costs associated with child maltreatment.

In 2016, Deloitte Access Economics quantified the economic cost of underinvestment in children and young people in NSW. The report analyses the cost of sub-optimal outcomes for children and young people including educational attainment, unemployment, crime, obesity, mental health and suicide events, and child abuse and domestic violence. It found that the net cost for children and young people in NSW was \$14.3 billion in 2016.

In 2017, Deloitte Access Economics provided updated estimates of the cost of child abuse and neglect in NSW and Australia for the Department of Family and Community Services (FACS). This encompassed costs related to health and education system expenditure, justice system costs, expenditure on child protection and supported accommodation, productivity losses, and deadweight efficiency losses. The report found that there were an estimated 71,227 cases of child abuse and neglect in 2015-16, costing the government and broader NSW community \$30.4 billion in annual and lifetime costs to individuals.

Source: Deloitte Access Economics.

1.3 Scope of this report

In May 2018, ACYP engaged Deloitte Access Economics to provide updated estimates for the annual and lifetime costs of violence against children and young people, aged 0 to 24 years, in NSW and Australia. The estimation of costs was based on a model previously developed for the NSW

Department of Family and Community Services (FACS) to estimate the economic costs of child abuse and maltreatment for children aged 0-17 years. The scope of the updates is as follows:

- Expand prevalence estimates to include 18-24 years, and to include other types of violence such as intimate partner violence and youth violence (including peer violence and gang violence)
- Update data sources where available for prevalence and unit costs (including substantiations data for FY16-17 and Report on Government Services reports)

This document provides the results for the updated costs of violence on children and young people, and is structured as follows:

- **chapter 2** outlines the methodology for calculating the cost of violence against children and young people. The three key components of the methodology are: (1) the number of people who experienced violence, (2) impacts of violence against children and young people; and (3) the direct and indirect costs attributable to violence against children and young people
- **chapter 3** provides the estimates of the number of people in NSW and Australia who experience different forms of violence
- **chapter 4** measures the annual FY16-17 costs that can be attributed to violence against children and young people. The annual cost is a snapshot of whole-system costs in a given year
- **chapter 5** measures the lifetime costs that can be attributed to the new cases of violence against children and young people in FY16-17. The lifetime cost of violence against children and young people is forward-looking and captures the whole-life, whole-system costs for the children and young people who experienced violence for the first time in FY16-17
- **chapter 6** summarises the additional qualitative impacts associated with violence against children and young people
- **chapter 7** summarises the key findings of this report and presents the total annual and lifetime costs, and the distribution of these financial costs by the cost bearer.

2 Methodology

This chapter outlines the methodology for calculating the cost of violence against children and young people.

2.1 Defining violence against children and young people

For children aged 0-17 years, child abuse is any type of action, or inaction that resulted in, or is likely to result in, significant harm or injury to a child, or risk of significant harm or injury to a child (AIHW 1997). For the purposes of this report, child abuse is limited to individuals aged between 0 and 17 years old to ensure consistency with the AIHW’s definition.

Child abuse can be subdivided into five main categories: physical, sexual, emotional and psychological, neglect, and witness or knowledge of family violence. These categories are defined in Table 2.1.

Table 2.1 Definitions of the five main categories of child abuse and neglect

Category	Definition
Physical abuse	Refers to any non-accidental harmful physical act inflicted upon a child or young person
Sexual abuse	Refers to any act by a person, that exposes the child or young person to, or involves them in, sexual processes beyond the child’s understanding or contrary to accepted community standards
Emotional and psychological abuse	Emotional abuse is abuse that occurs when a person is subjected to behaviours or actions (often repeatedly) aimed at preventing or controlling their behaviour, with the intent to cause them to emotional harm or fear through manipulation, isolation or intimidation.
Neglect	When a child’s basic needs for food, housing, health care and warm clothing are not met
Witness or knowledge of family violence	Refers to any child being forced to live with family violence – the child may have witnessed the family violence or been aware of it. In some definitions of child abuse, being forced to live with domestic violence falls under emotional and psychological abuse.

Source: Australian Childhood Foundation (2017), ABS (2017)

As per the latest literature that synthesised evidence on child abuse prevalence in Australia (Moore et al. 2015) and AIHW (2017), this study considered the four main types of abuse – childhood sexual abuse, physical abuse, emotional abuse and neglect. Cases of witness or knowledge of family violence is combined with emotional abuse cases.

For young people aged 18-24 years, violence also includes peer violence and intimate partner violence in addition to child maltreatment or violence by parents, caregivers or authority figures.

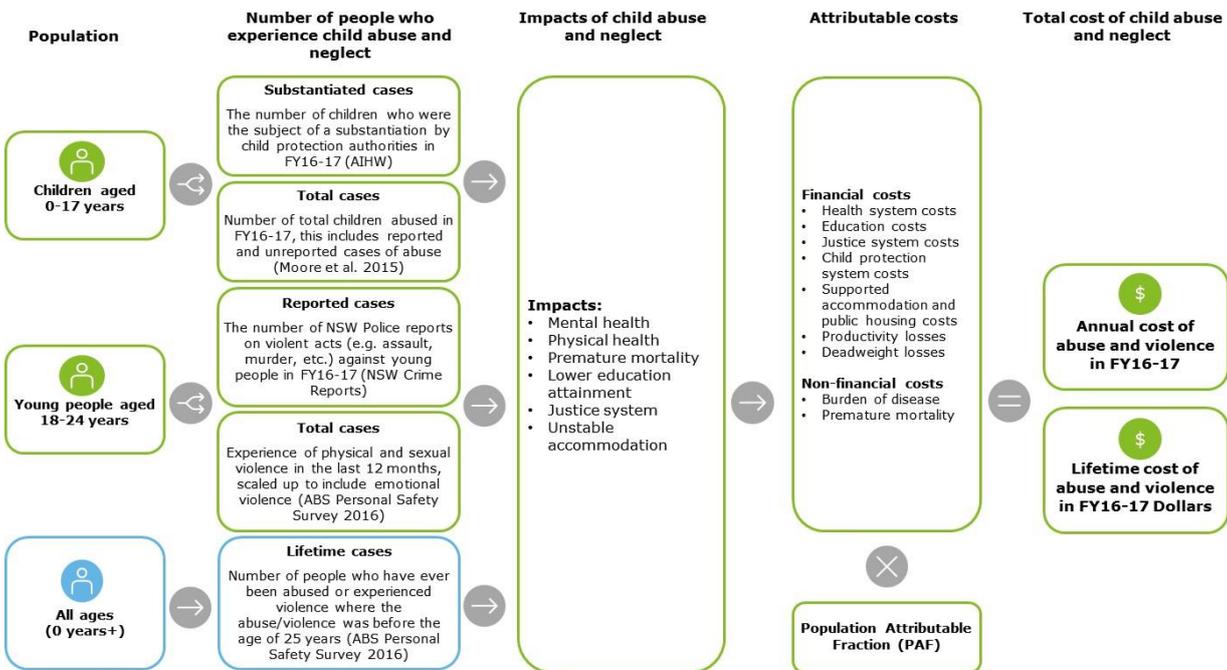
2.2 Overview of the methodology

Broadly, the methodology used to estimate the economic cost of violence against children and young people has three components, as outlined below and illustrated in Figure 2.1:

- number of children and young people who experienced violence (where the violence occurred when they were 0-24 years)

- impacts or consequences of violence, whether they develop immediately or later in the child or young person’s life
- financial and non-financial costs associated with the impacts of, and attributable to, violence against children and young people.

Figure 2.1 Methodology for cost of violence against children and young people



Source: Deloitte Access Economics methodology.

2.3 Number of children and young people who experienced violence

The number of children and young people who experienced violence was categorised into three groups:

- **Reported cases in FY16-17** – These estimates represent only cases who were the subject of a substantiation by child protection authorities in FY16-17 (for 0-17 years), or were reported for a violent crime in the ABS Recorded Crime Statistics (for 18-24 years). As some cases of abuse and violence go unreported, these estimates potentially underestimate the number of people who experienced child abuse or violence as a young person
- **Total cases of violence in FY16-17** – These estimates represent the number of reported and unreported cases of abuse and violence
- **Lifetime cases** – In any given year, there will be a number of people who had, in prior years, experienced child abuse or violence as a young person (where the abuse/violence occurred when they were 0-24 years of age). Lifetime cases refer to the cases of abuse/violence that any person, regardless of age, had experienced when they were 0-24 years and includes reported and unreported cases.

Each of these measures are summarised in Table 2.2, for both child abuse and violence against young people.

Table 2.2 Types of estimates on number of people who experienced child abuse or violence as a young person

Type of estimate	Child abuse (0-17 years)	Violence against young people (18-24 years)
Reported cases of abuse and violence in FY16-17	<ul style="list-style-type: none"> Number of children (0-17 years) who were the subject of a substantiation by child protection authorities in FY16-17 Adjusted upwards by approximately 10% to account for investigations still in progress at the end of the financial year and for cases where a decision not to substantiate was expected to be followed by a subsequent decision to substantiate (i.e. decision overturned) Represents reported cases only 	<ul style="list-style-type: none"> Number of young people (18-24 years) who were victims of criminal acts of violence (including physical and sexual), as reported in the NSW Crime Reports Scaled up to include emotional violence or abuse using the ratio of physical and sexual violence to emotional violence in a domestic violence setting in the ABS Recorded Crime Statistics Represents reported cases only
Total cases of abuse and violence in FY16-17	<ul style="list-style-type: none"> Number of children (0-17 years) who experienced abused in FY16-17 using Moore et al. (2015) annual prevalence rates Represents reported and unreported cases of abuse 	<ul style="list-style-type: none"> Number of young people (18-24 years) who experienced physical and sexual violence in FY16-17 using ABS Personal Safety Survey (2016, experience of violence in past 12 months) Represents reported and unreported cases of violence
Lifetime cases of abuse and violence	<ul style="list-style-type: none"> Number of people (all ages) who have ever experienced violence (where the violence occurred when they were 0-24 years), up to and including the year FY16-17 using ABS Personal Safety Survey (2016, experience of violence before age of 15) ABS Personal Safety Survey data was scaled up to include 0-24 years Represents reported and unreported cases of violence 	

Source: Deloitte Access Economics

It should be noted that the category of 'neglect' only applies to children aged 0-17 years, and not for young people aged 18-24 years for the purposes of estimating prevalence. This report assumes that young adults over the age of 18 years no longer have to rely on a parent or caregiver to provide their basic needs for growth and development. Further, parents and caregivers are not legally required to provide regular care for their child beyond the age of 18, pursuant to the Family Law Act 1975. These assumptions, which inherently exclude young people from the possibility of being subject to neglect, are consistent with UNICEF Australia's Child Protection Policy (2013), which defines a child who can be subject to abuse and neglect as any person under the age of 18.

However, there are several cases in which youths and young adults may remain dependent on their caregiver beyond the age at which they become legally independent. For example, children with a disability that inhibits their ability to become independent of caregivers for their basic needs, such as food, shelter and adequate health care, are likely to require ongoing support after the age of 18. Therefore, it is still possible that neglect may occur within the cohort of young people, meaning estimates of violence in the cohort 18-24 may be conservative.

2.3.2 Reported cases of abuse and violence in FY16-17

2.3.2.1 Child abuse (0-17 years) – substantiated cases in FY16-17

A brief outline of the child protection system and the way cases of child abuse and neglect are reported is provided in the box below.

The child protection system at a glance

1. Notification: A family enters the child protection system when a report of concern about the child is made (e.g. by professionals, the child, the parent(s) or another relative). The reports are received by state and territory child protection and support services such as the child protection helpline and are reviewed to determine whether or not further action needs to be taken. Reports that require further action are classified as a 'child protection notification'. For those reports that are classified as a child protection notification, these are sent either to a Community Services Centre or to a Joint Investigation Response Team.

2. Investigation: The majority of reported cases are referred to a Community Services Centre, while the Joint Investigation Response Team receives referrals where there is a possibility the abuse constitutes a criminal offence (the main focus of offences are sexual abuse cases). The Community Services Centre and the Joint Investigation Response Team will review the reports to determine whether there is sufficient evidence of abuse. The review process involves collaborating with other government agencies to collect information about the case and consulting with the family. This is often a traumatic experience for families and support services are offered to them.

3. Substantiation: If sufficient evidence is found that the child is at risk, the report has been found to be substantiated. At this point, the family will be offered additional support services and in some cases a child will be placed in out of home care. A child will only be placed in out of home care as a last resort and this occurs when a notification has been substantiated and the child is believed to be at risk of further abuse and neglect, or if the family is not able to properly care for the child.

Source: AIHW (2017).

The estimate for substantiated cases in FY16-17 is based on the number of children in substantiations as reported in AIHW (2017). The number of substantiations was adjusted upwards by approximately 10% to account for investigations still in progress at the end of the financial year and for cases where a decision not to substantiate was expected to be followed by a subsequent decision to substantiate (i.e. decision overturned).

Out of all children who were the subject of investigations into a notification, 29% in NSW and 37% in Australia had previously never been the subject of an investigation into abuse (AIHW 2018). These proportions were used to estimate the number of children (0-17 years) who have been abused for the first time in FY16-17 (i.e. new cases).

Estimates of abuse based on substantiations data are likely to underestimate the extent of abuse in the community. This is because a significant number of abuse cases are not reported to authorities due to the following reasons:

- The highest rates of child abuse and neglect occur in the formative years of a child's life (0-5 years old). At this age, they are generally unable to articulate their experience and may not be able to determine what behaviour is unacceptable until later in life
- Children who suffer from abuse may be too traumatised and therefore unwilling to openly discuss or revisit their experience. Additionally, there may be stigma attached to admissions of child abuse and neglect and uncertainty about how such admissions are received
- Children who have experienced abuse may have a reduced capacity to trust and may lack self-esteem which reduces the willingness to report abuse
- Abuse and neglect can be difficult to detect and diagnose by others.

2.3.2.2 Violence against young people (18-24 years) – ABS Recorded Crime Statistics

To obtain the number of reported cases of violence against young people, the rate of criminal acts of violence where the victim was 18-24 years was estimated based on the following crimes:

- Murder
- Domestic violence related assault
- Non-domestic violence related assault
- Sexual assault

- Indecent assault, act of indecency and other sexual offences.

The rate of violence was then applied to the population aged 18-24 years to obtain the number of reported cases of violence against young people in FY16-17. In order to obtain cases of emotional abuse against young people, the ratio between physical/sexual to emotional abuse in intimate partner violence cases was used.

According to the ABS Personal Safety Survey (2017), approximately 14% of men and 13% of women who were temporarily separated from their partners experienced violence for the first time. These proportions were used as a proxy to estimate the number of young people aged 18-24 years who were experiencing violence for the first time in FY16-17 (i.e. new cases).

2.3.3 Total cases (reported and unreported) of abuse and violence in FY16-17

2.3.3.1 Child abuse (0-17 years) – Total cases in FY16-17

Given that the number of substantiations only represents reported cases and is likely to underestimate the total number of children abused in a given year, the total number of cases in FY16-17 was estimated using findings from the literature. A recent Australian study by Moore et al. (2015) was used as it includes estimated rates for the four main types of abuse: sexual abuse, physical abuse, neglect, and emotional and psychological abuse². In addition, Moore et al. (2015) pools together a number of articles and datasets to estimate the prevalence of child abuse and does not rely solely on records from authorities.

Moore et al. (2015) estimated the lifetime prevalence of child abuse to be 13% for males and 22% for females. That is, of all Australians and all ages (0 years and above), 13% of males and 22% of females have experienced child abuse or neglect when they were aged 0-17 years. Lifetime prevalence captures the total number of people in FY16-17 who have ever experienced abuse as a child (i.e. measures the number of people who have ever experienced child abuse or neglect whether it happened in FY16-17 or before).

In order to convert lifetime prevalence to annual prevalence, a ratio of annual to lifetime prevalence was determined for each type of abuse using estimates from Finkelhor et al. (2013). The ratios outlined in Table 2.3 were used to calculate annual prevalence rates. The resulting annual prevalence rates were multiplied by June 2017 population data to estimate the total number of children abused in FY16-17.

Table 2.3 Ratio of annual to lifetime prevalence

Type of child abuse	Ratio of annual to lifetime prevalence
<i>Physical</i>	20%
<i>Sexual</i>	20%
<i>Emotional</i>	31%
<i>Neglect</i>	29%

Source: Finkelhor et al. (2013).

² Moore et al. (2016) defines child physical abuse as the use of physical force against a child that results in harm to the “health, survival, development or dignity” of the child. This includes hitting, beating, poisoning and burning the child, amongst other harmful actions. Child emotional abuse refers to failure of the parent or caregiver to provide a “developmentally appropriate and supportive environment” to the child, including actions such as “restriction of movement, patterns of belittling, blaming, threatening, frightening, discriminating against or ridiculing and other non-physical forms of rejection or hostile treatment”.

The number of new cases in FY16-17 was estimated by converting the annual prevalence rate to an annual incidence rate using the following formula (Rothman 2012):

$$I = P_A \div D$$

Where:

I = Annual incidence

P_A = Annual prevalence

D = Average duration of abuse

Average duration of abuse was estimated to be 4.3 years in NSW and 4.5 years in Australia, based on the method used by McCarthy et al. (2016).

2.3.3.2 Violence against young people (18-24 years) – Total cases in FY16-17

Similarly, the number of police reported cases only includes cases that were reported by victims and where police attended the incident. As such, this significantly underestimates the total number of cases of violence against young people. This is especially the case for domestic and family violence where research shows that violence by an intimate partner is often unreported. The ABS Personal Safety Survey found that on average, 80% of men and women did not contact police about violence by a partner.

As such, the ABS Personal Safety Survey was used to estimate the total number of cases in FY16-17 of violence against young people aged 18-24 years (including physical, sexual and emotional).

2.3.4 Lifetime cases of violence against children and young people in FY16-17

According to the ABS Personal Safety Survey, the proportion of people (of all ages) who experienced any type of abuse where the abuse occurred before the age of 15 years was 15.8% for females and 11.0% for males. These proportions were scaled up to obtain the lifetime prevalence rate for violence occurring during the ages of 0-24 years. The total number was then allocated to the four types of violence (physical, sexual, emotional and neglect) using the ratios from Moore et al. (2015). The weighted average lifetime prevalence rate for male and females was 23.76% where the violence occurred between 0-24 years.

2.4 Impact of violence against children and young people

Violence against children and young people is associated with various adverse outcomes for the individuals concerned, as well as the community more generally. The impacts of violence against children and young people that have been quantified in this report are based on a review of literature evidence and include:

- **mental health conditions** – depression, anxiety, alcohol abuse, drug abuse and self-harm (Norman et al. 2012; Maniglio 2009; Cutajar et al. 2010)
- **physical health conditions** – assault (immediate injuries caused by the abuse), obesity (resulting in cardiovascular disease, cancer and diabetes), chronic pain, gastrointestinal and risky sexual behaviour (resulting in HIV/AIDS, hepatitis and sexually transmitted infections (STIs)) (Afifi et al. 2016; Herrenkohl et al. 2013; Hemmingson et al. 2014; Begg et al. 2007; Sansone et al. 2015; Norman et al. 2015; Santerre-Baillargeon 2016; Spiegel et al. 2015)
- **premature mortality** – childhood or youth mortality as a direct consequence of physical abuse;
- **education attainment** – lower education attainment and the need for additional education support (Johnson-Reid et al. 2004; Smithgall et al. 2004)
- **crime** – legal orders immediately following the abuse, juvenile delinquency, adult criminality and re-victimisation in adulthood (Bright & Jonson-Reid 2008; Maschi et al. 2008; Mersky & Reynolds 2007) and
- **unstable living conditions** – OOH, supported accommodation (short term and crisis accommodation) and public housing (Raman et al. 2005).

Refer to McCarthy et al. (2016) and Taylor et al. (2008) for a comprehensive summary of the literature supporting the impacts of violence against children and young people. The additional impacts

of child abuse and neglect identified in the literature review and quantified for the first time in this report include the following physical health conditions:

- **obesity (resulting in cardiovascular disease, cancer and diabetes)** – Hemmingsson et al. (2014) concluded, following a meta-analysis examining the impacts of childhood abuse and obesity, that adverse experiences in early life do indeed contribute towards obesity in adulthood. This link is mediated by a range of factors that are induced in children who experience abuse and neglect, such as the development of low self-esteem, food insecurity, disturbed sleep patterns and elevated response to stress. The cost of obesity on the health system has been valued as the costs of the resulting health conditions cardiovascular disease, cancer and diabetes (Begg et al. 2007)
- **chronic pain** – exposure to child abuse has been associated with having physical ailments later on in life, one of which is chronic pain. Various degrees and types of chronic pain are associated with childhood adverse experiences; these range from genito-pelvic pain experienced by women who suffered childhood sexual abuse (see Santerre-Baillargeon 2016) to abdominal pain associated with irritable bowel syndrome (IBS) (see Spiegel et al. 2015)
- **gastrointestinal** – in an exploratory article examining the relationship between IBS and child abuse, Sansone et al. (2015) noted that both genetic and environmental factors (such as child abuse) contribute towards IBS. The authors postulated the “pathophysiological” pathways that link childhood abuse and neglect and IBS, such as excessive norepinephrine responsivity and serotonergic dysfunction (depressed levels), which may affect gut motility (the functioning of the digestive system). Sansone et al. (2005) also noted that posttraumatic stress disorder may be a mediator between childhood trauma and IBS in adulthood
- **risky sexual behaviour (resulting in HIV/AIDS, hepatitis and STIs)** – in a meta-analysis, Norman et al. (2012) found that experiences of child abuse tend to increase the relative risk of engaging in risky sexual behaviours as well as enduring worse health outcomes. The cost of risky sexual behaviour on the health system has been valued as the costs of the resulting health conditions HIV/AIDS, hepatitis and STIs (Begg et al. 2007).

2.5 Costs associated with impacts of violence

2.5.1 Scope of costs

The costs associated with the impacts of violence against children and young people include:

- **health system costs** associated with treating injuries directly resulting from physical violence and fatal violence and long-term (downstream) costs of mental and physical illnesses experienced by those abused as a child or young person
- **education costs** associated with potentially poorer educational achievement leading to additional assistance required at school
- **justice system costs** including the cost of care and protection orders, the costs of investigating, prosecuting and incarcerating the perpetrators of violence against children and young people;
- the costs of the **child protection system**, OOHC, Aftercare, Family Support Services and Intensive Family Preservation
- **housing and homelessness costs** including the costs of greater than average use of supported accommodation by families in which violence has occurred, the cost of greater than average use of public housing by children leaving OOHC and the use of specialist homelessness services stemming from violence
- **productivity losses** due to poorer employment and earnings outcomes resulting from lower than average rates of completing Year 12 and tertiary education by those who experienced violence
- **deadweight losses** associated with additional government expenditures and taxation revenue forgone that is attributable to violence against children and young people³, and
- **quality of life and lifespan** including the burden of disease (premature mortality from disease and loss of wellbeing from disease) and premature mortality as a direct consequence of violence

³ Deadweight losses reflect the resources required to administer the taxation and welfare systems, the associated costs of compliance activities, and the behavioural distortions to production and consumption that result from the need to raise additional taxation revenue relative to a situation where child abuse and neglect did not occur.

experienced as a child or young person. Quality of life and lifespan is measured by disability adjusted life years (DALYs) and converted to monetary units using the value of a statistical life year (VSLY).

Some cost impacts only apply to children or young people. For example, special education costs only apply to children in schooling years. Table 2.4 provides a summary of scope of costs for children and/or young people.

Table 2.4 Scope of costs estimated for children and / or young people

	Children (0-17 yrs)	Young people (18-24 yrs)
<i>Health system costs</i>	✓	✓
<i>Education costs</i> associated with potentially poorer educational achievement leading to additional assistance required at school	✓	
<i>Justice system costs</i> – cost of care and protection orders	✓	
<i>Justice system costs</i> –costs of investigating, prosecuting and incarcerating the perpetrators of violence against children and young people	✓	✓
<i>Child protection costs</i> – costs of the child protection system, costs of out-of-home care, costs of aftercare, costs of Family Support Services and Intensive Family Preservation	✓	
<i>Housing and Homelessness costs</i> – costs of supported accommodation and public housing	✓	✓
<i>Housing and Homelessness costs</i> – costs of specialist homelessness services		✓
<i>Productivity losses</i> due to poorer employment and earnings outcomes	✓	✓
<i>Deadweight losses</i> associated with additional government expenditures and taxation revenue forgone	✓	✓
<i>Quality of life and lifespan</i> including the burden of disease and premature mortality	✓	✓

2.5.2 Method for attributing costs to violence against children and young people

A population attributable fraction (PAF) for each risk factor was calculated to determine how a range of conditions and their associated costs were attributable to violence using the following formula which is commonly used in cost of illness studies (Larg et al. 2011):

$$PAF = \frac{P(RR - 1)}{P(RR - 1) + 1}$$

Where:

P = Prevalence of child abuse and neglect

RR = Relative risk (of risk factor)

Relative risk ratios were obtained from the literature to calculate the PAFs for each of the impacts of violence. Odd ratios were used as a proxy for relative risk ratios in cases where prevalence of the condition was less than 10% (Grimes 2008). Estimates of the number of children and young people who experienced violence were divided by June 2017 population data to determine prevalence rates. In general, the mental and physical health conditions used the estimate for 'lifetime cases' while the estimate for all other impacts used 'total cases in FY16-17'. This is because mental and physical health conditions (excluding assault and self-harm) are typically long term and the associated health system expenditure is spent on people of all ages, regardless of their age or the year that the violence occurred.

The resulting PAF was applied to the relevant total cost to determine an annual cost (i.e. the cost of violence in FY16-17). A unit cost was derived by dividing the annual cost by the number of prevalence cases in FY16-17.

Lifetime costs were calculated by multiplying the unit costs by the number of new cases in FY16-17, projected forward by the number of years the costs will be incurred and discounted by 7% to today's terms in accordance with NSW Treasury guidelines (NSW Treasury 2017).

The PAFs for each of the impacts are provided in Appendix A.

2.5.3 Cost assumptions and data sources

All costs in this report are in FY16-17 dollars. A 10-year average rate of inflation of 4.6% for health related costs and 2.2% for all other costs was applied to inputs, where required (ABS 2018b). Refer to Appendix B for the inputs used to estimate the annual and lifetime costs of violence against children and young people.

2.6 Caveats and considerations

2.6.1 Number of people who experience violence as a child or young person

There is great uncertainty in estimating the true number of people who experience violence as a child or young person because of the nature of the act and the harm caused. For example, violence can be difficult to detect and diagnose by others and violence frequently occurs at a young age where children are unable to articulate their experience or are unable to judge what is socially acceptable until later in life. In addition, efforts to synthesise the many studies of the extent of occurrence of violence against children and young people are hindered by the following:

- **Differences in scope:** Most studies have a narrow focus and fail to account for all the common categories of violence (sexual, physical, emotional or psychological abuse, neglect and witness of family violence). Furthermore, by focusing on a specific form of violence, studies fail to account for the co-occurrence of different types of violence (i.e. sexual and emotional abuse often occur together). Where relevant data are available, the current study accounts for differences in the prevalence and incidence of different types of violence, and estimates the impact of each type of violence on health and other sequelae. Co-occurrence is accounted for by adjusting final estimates by an uplift factor.
- **Differences in definitions of abuse and violence and thresholds for determining abuse:** Given the evolving nature of violence against children and young people, there is no universal definition. Any attempts to define abuse and violence may limit the scope and fail to account for the changing nature of the issue (e.g. internet-related child abuse). Additionally, some studies look at the number of *acts* of physical or sexual abuse, whilst others focus on the *harm* caused. Thresholds such as standards of care are also different (e.g. the age when parents leave a child at home or in public unsupervised). This study is based on adjusted substantiated cases of violence, and estimates the resulting impacts of violence such as anxiety, depression, and lower employment prospects, amongst others. It is therefore based on actual cases of violence (that have been adjusted to account for unreported cases) and the harm caused by such violence, as established in the literature. For the purposes of estimating the economic impact of violence against children and young people, the scope of this study is hence appropriate.
- **Differences in counting methods:** Certain studies utilise primary data (e.g. surveys) to estimate the incidence and prevalence of violence. Some studies rely on secondary data sets, such as justice system or child protection data, to formulate their results. This study uses data on substantiated cases of violence, adjusting upwards to account for unreported cases. Substantiations data ensures that the prevalence estimates are reliable, with the upward adjustment ensuring that estimates are not downward biased.
- **Differences in sample characteristics:** Age groups, gender of children studied, geographic location, and socioeconomic status are just some of the characteristics that are different amongst samples and as a result, hinder the synthesis of different studies of abuse and violence. In estimating the impacts of child abuse, studies that controlled for other variables, such as socioeconomic status, were used.

2.6.2 Impacts of violence against children and young people

Limitations to data and evidence mean that there is a margin of uncertainty surrounding the magnitude of the impacts of violence against children and young people. In particular, there is a shortage of studies with long-term follow up of individuals who experienced violence — and the studies that are available have very small sample sizes. Hence, it is very difficult to quantify the long-term or downstream impact of violence against children and young people and thus capture the costs. The difficulty to quantify impacts is exacerbated due to confounding factors such as socioeconomic status which make attributing impacts to the act of violence challenging. Where possible, studies that control for confounding factors have been selected as inputs to this report.

Quantification of impacts in this report reflect the key impacts associated with violence against children and young people, as well as the availability of suitable data required for quantifying such impacts. Although the impacts quantified are not an exhaustive picture of the impacts of violence against children and young people, they are in line with existing literature and the methodologies utilised in studies that quantify the impact of violence against children and young people. Refer to chapter 6 for a qualitative discussion of additional impacts.

2.6.3 Costs

There is inevitably a margin of uncertainty surrounding the magnitude of the estimated costs. As discussed previously, there is difficulty in attributing both impacts and costs to violence against children and young people, because of confounding factors that influence outcomes. Additionally, limitations in available cost data has required the use of proxy numbers. For example, a report on health system expenditure on disease and injury has not been released since the 2010 report on 2004-05 expenditure. A proxy cost input was estimated by applying the proportions of the 2004-05 expenditure to the latest AIHW health expenditure report. Similarly, there are limitations and inconsistencies in the disaggregation of cost data by age and gender.

- a) In general, a conservative approach was taken when identifying cost inputs meaning that the final costs represented in this report are likely to underestimate the total economic costs of violence against children and young people. The one exception is the assumption for estimating the lifetime health system costs. As explained in section B.1, it was assumed that health conditions develop immediately following the violence and last for an individual's entire life, where the average life expectancy is 82 years (ABS 2016b). While it is noted that not all conditions last for an entire lifetime, this assumption was required given the complexities in estimating the average duration of health conditions and the difficulties of accounting for relapses. This has the potential to overestimate the lifetime value of health system costs, however, not by a large amount given the cost input data is an annual cost (and not everyone accesses support for their illness every year) and discounting of future dollars to FY16-17 values.

3 Number of children and young people who experience violence

This chapter provides the estimates of the number of children and young people who have experienced violence in NSW and Australia.

The purpose of this chapter is to provide estimates of the number of children and young people who experience violence, including an estimate of the number of cases that result in mortality and the proportion of children and young people who are exposed to multiple occurrences of violence. These estimates are conservative and indicate the likely magnitude of violence against children and young people in NSW and Australia. Section 2.3 outlined the methodology and data sources used to estimate the number of people who experience violence.

3.1 Reported cases of violence in FY16-17

In FY16-17, an estimated 72,361 children and young people in Australia were reported as having experienced violence. Of these, 26,037 individuals (36%) were in NSW. As defined earlier, the number reported cases of violence reflects cases that have been reported to child protection authorities or to NSW Police. Table 3.1 and Table 3.2 provide the estimated number of reported cases by age and gender in FY16-17 for NSW and Australia respectively.

Table 3.1 Number of reported cases of violence in FY16-17, by age and gender – NSW

Age	Number of children and young people			% of children and young people out of the NSW population		
	Males	Females	Persons	Males	Females	Persons
<1	1,339	1,456	2,795	2.85%	3.28%	3.06%
1-4	2,238	2,434	4,671	1.08%	1.24%	1.16%
5-9	2,686	2,921	5,607	1.04%	1.19%	1.11%
10-14	2,593	2,821	5,414	1.08%	1.25%	1.16%
15-17	890	967	1,857	0.63%	0.72%	0.67%
18-24	2,591	3,103	5,694	0.69%	0.86%	0.78%
Total	12,336	13,701	26,037	0.97%	1.14%	1.05%

Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017)

Note: The percentages reported refer to the percentage of children out of the NSW population, for the specific gender and age group.

Table 3.2 Number of reported cases of violence in FY16-17, by age and gender – Australia

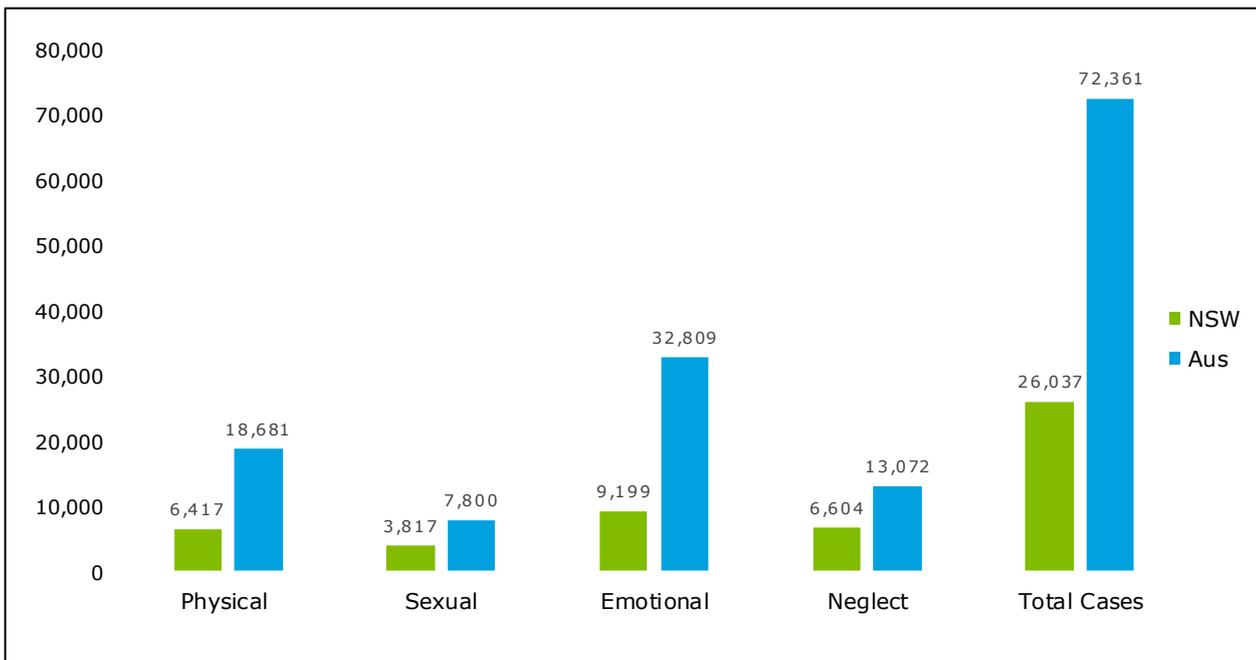
Age	Number of children and young people			% of children and young people out of the Australian population		
	Males	Females	Persons	Males	Females	Persons
<1	3,634	3,746	7,380	2.34%	2.55%	2.44%
1-4	6,434	6,630	13,064	0.99%	1.07%	1.03%
5-9	7,599	7,832	15,431	0.93%	1.01%	0.97%
10-14	6,915	7,126	14,041	0.91%	1.00%	0.95%
15-17	2,145	2,210	4,355	0.48%	0.52%	0.50%
18-24	8,234	9,857	18,091	0.69%	0.86%	0.78%
Total	34,960	37,401	72,361	0.87%	0.97%	0.92%

Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017)

Note: The percentages reported refer to the percentage of children out of the Australian population, for the specific gender and age group. Due to rounding, numbers may not add up precisely to the totals.

Chart 3.1 provides a further breakdown of reported cases by type of violence. In Australia, emotional abuse (45%) and physical violence (26%) accounted for the majority of reported violence. Similarly, these two types of violence accounted for the majority of reported cases in NSW. For the reasons outlined in Section 2.3, neglect has not been defined as a category of violence for the 18-24 cohort. It is important to note that sexual violence tends to have the lowest rates of reporting amongst victims and is the reason for the relatively low estimates in Table 3.1 below.

Chart 3.1 Reported number of cases of violence in FY16-17, for NSW and Australia, by type of violence

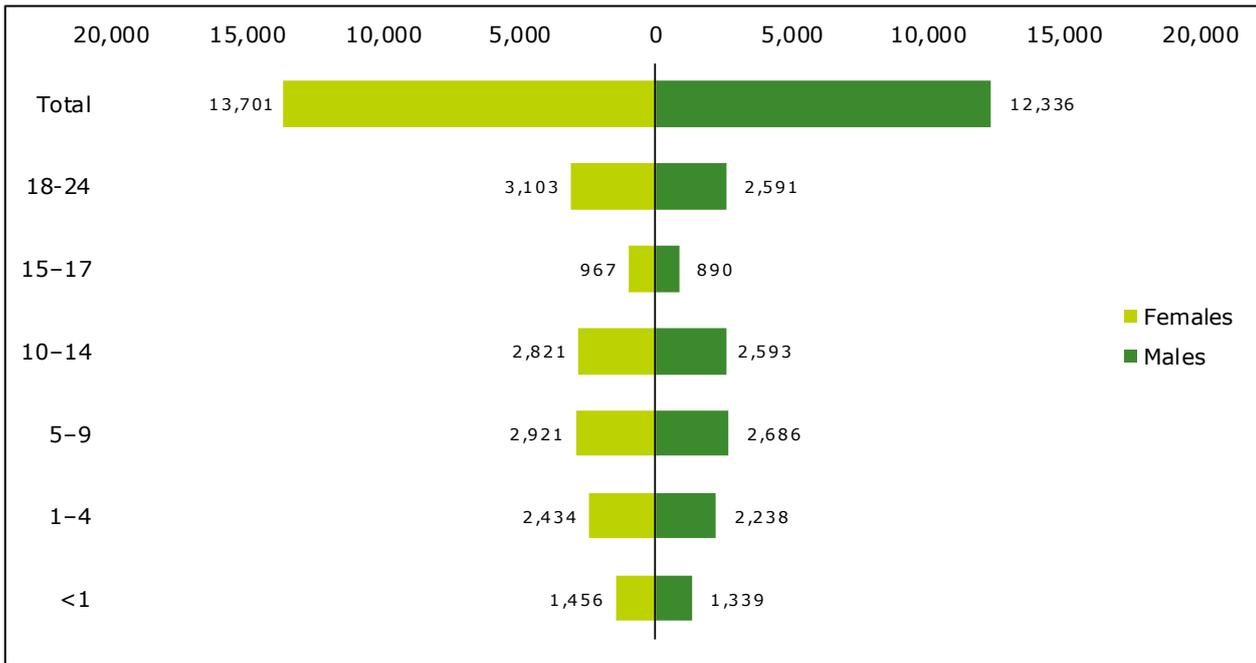


Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017)

Note: Due to rounding, numbers may not add up precisely to the totals. Young people aged 18-24 years were assumed to not experience neglect.

Chart 3.2 and Chart 3.3 illustrate the number of reported cases of violence broken down by gender and age for Australia and NSW. The distribution of reported cases is roughly even across the gender split, with 52% of total cases relating to females in Australia and NSW. Whilst the distribution across genders is fairly even, most cases of violence occur between the ages of 18-24, with the least in the 15-17 age bracket, a trend common in Australia and NSW. Notably, the number of child abuse cases within the <1 age group appears to be relatively high in proportion to the total number of substantiations.

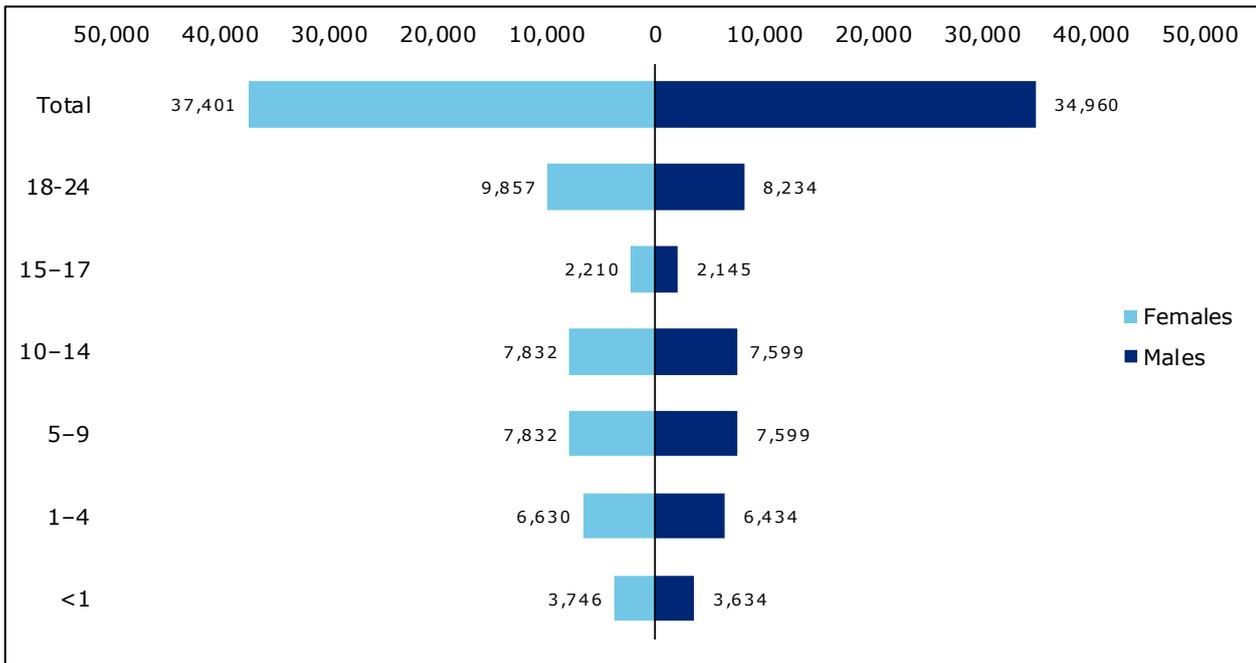
Chart 3.2 Number of reported cases of violence in NSW in FY16-17, by age and gender



Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017)

Note: Due to rounding, numbers may not add up precisely to the totals.

Chart 3.3 Estimated number of cases of violence in Australia in FY16-17, by age and gender



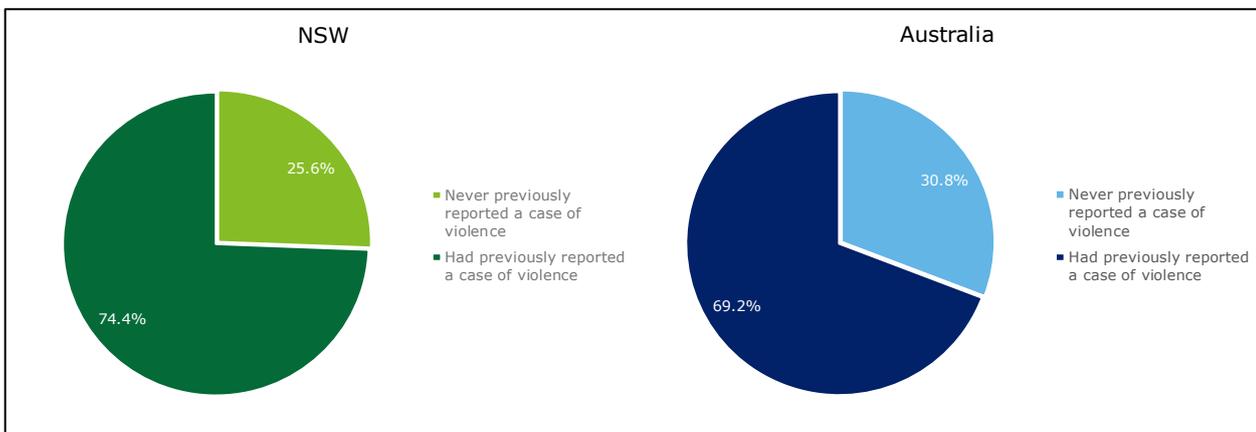
Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017)

Note: Due to rounding, numbers may not add up precisely to the totals

Of all substantiations in FY16-17, 29.0% in NSW and 36.6% in Australia had not previously been the subject of an investigation into abuse (AIHW 2018). This indicates that the child had experienced the first episode of abuse in FY16-17, or that episodes of abuse prior to FY16-17 had not been reported and substantiated.

For those aged 18-24 years, the Personal Safety Survey estimated that approximately 14% of men and 13% of women who were temporarily separated from their partners experienced violence for the first time. These proportions were used as a proxy to estimate the number of young people aged 18-24 years who were experiencing violence for the first time in FY16-17 (i.e. new cases). Figure 3.1 shows the average distribution across 0-24 years of new cases.

Figure 3.1 Distribution of reported cases that are new cases in FY16-17, NSW and Australia



3.2 Total cases of violence in FY16-17

In FY16-17 there were an estimated 489,194 total cases of violence against children and young people in Australia (Table 3.4). Of these, 154,302 (32%) were in NSW (Table 3.3). As noted in section 2.3.2, using only reported cases will understate the true extent of violence in Australia. To determine a best estimate, the reported cases were combined with unreported cases as per the methodology set out in Section 2.3.2. Chart 3.4 presents the estimated number of total cases of violence by type. In sharp contrast to the trends highlighted when considering only substantiated cases, the two most prevalent types of violence are emotional (34%) and physical (32%). This disparity when compared to reported cases only perhaps points to the under-reporting of sexual violence among both males and females.

Table 3.3 Total number of children and young people who experienced violence in FY16-17, by age and gender – NSW

Age	Number of children and young people			% of children and young people out of the NSW population		
	Males	Females	Persons	Males	Females	Persons
<1	1,501	2,284	3,785	3.20%	5.15%	4.14%
1-4	6,616	10,087	16,702	3.20%	5.15%	4.15%
5-9	8,275	12,653	20,928	3.20%	5.15%	4.15%
10-14	7,669	11,637	19,306	3.20%	5.15%	4.14%
15-17	4,512	6,902	11,413	3.20%	5.15%	4.15%
18-24	40,098	42,068	82,166	10.70%	11.70%	11.19%
Total	68,670	91,145	154,302	5.41%	7.56%	6.44%

Source: Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017).

Note: The percentages reported refer to the percentage of children out of the NSW population, for the specific gender and age group. The percentages are the same across age groups because the total cases in FY16-17 was estimated using findings from the literature. A breakdown in rates by age was not possible because data was missing for the 0-5 years cohort, hence a pooled percentage was used and multiplied by the population numbers for each age group.

Table 3.4 Total number of children and young people who experienced violence in FY16-17, by age and gender – Australia

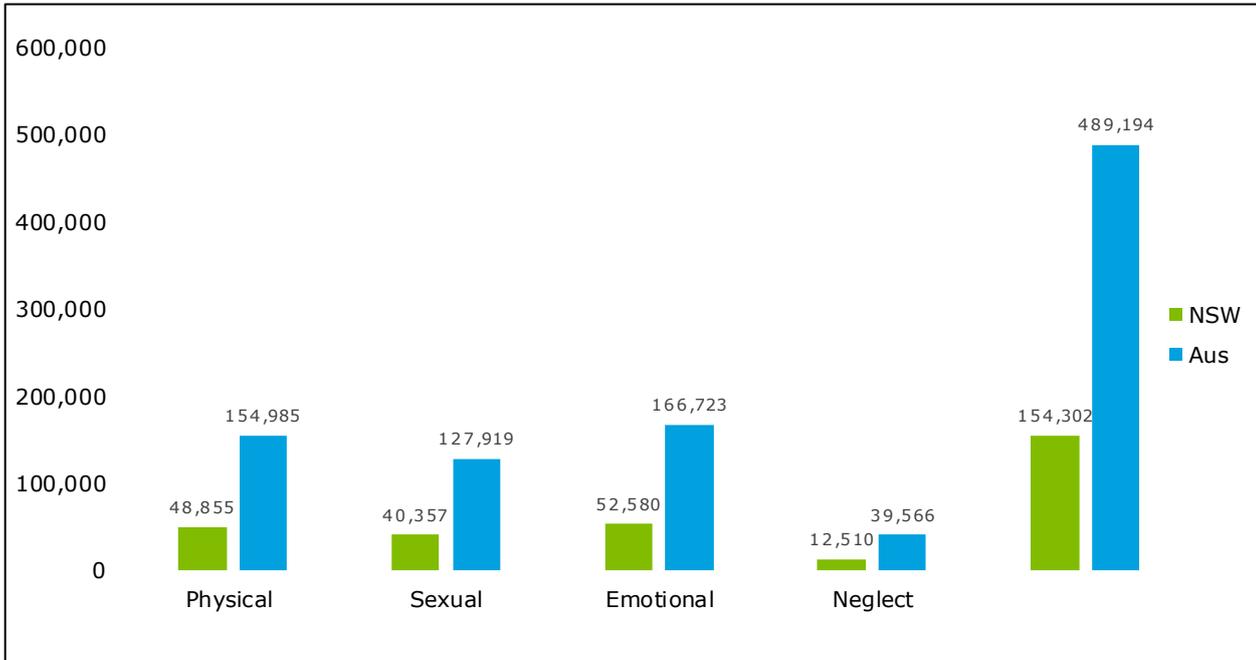
Age	Number of children			% of children out of the Australian population		
	Males	Females	Persons	Males	Females	Persons
<1	4,968	7,567	12,534	3.20%	5.15%	4.15%
1-4	20,837	31,799	52,636	3.20%	5.15%	4.15%
5-9	26,052	39,803	65,855	3.20%	5.15%	4.15%
10-14	24,189	36,822	61,011	3.20%	5.15%	4.14%
15-17	14,249	21,855	36,104	3.20%	5.15%	4.15%
18-24	127,401	133,653	261,054	10.70%	11.70%	11.19%
Total	217,695	271,499	489,194	5.42%	7.11%	6.24%

Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017).

The economic cost of violence against children and young people

Note: The percentages reported refer to the percentage of children out of the Australian population, for the specific gender and age group. The percentages are the same across age groups because the total cases in FY16-17 was estimated using findings from the literature. A breakdown in rates by age was not possible because data was missing for the 0-5 years cohort, hence a pooled percentage was used and multiplied by the population numbers for each age group.

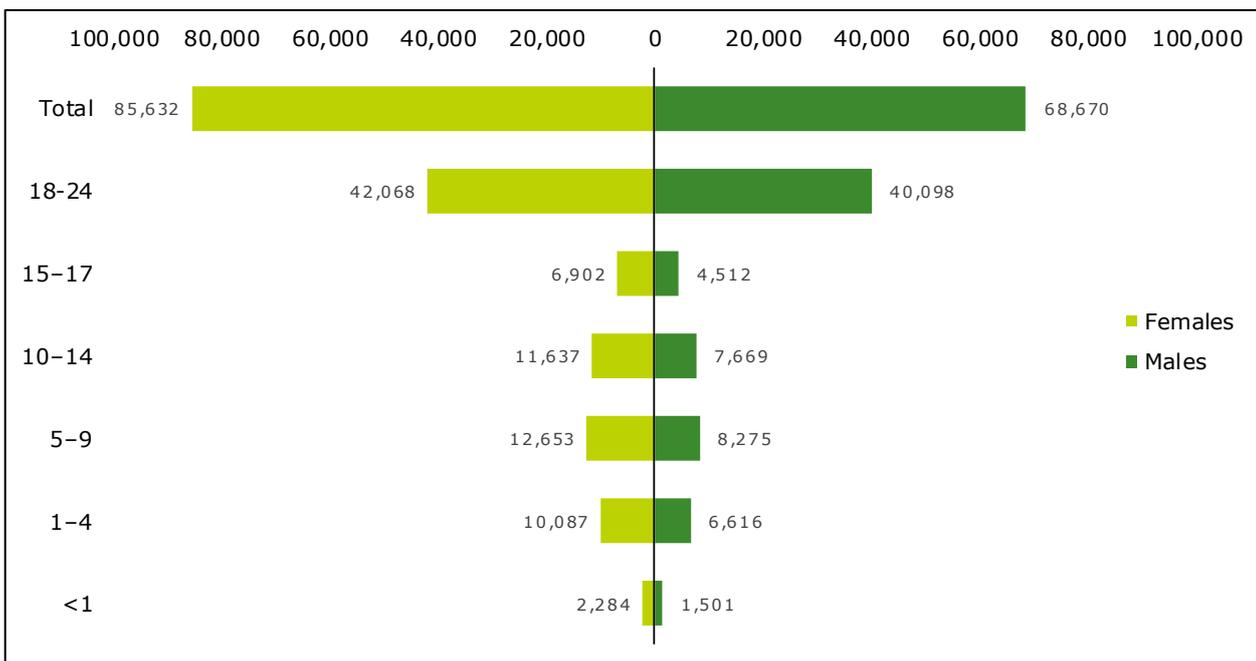
Chart 3.4 Estimated number of total cases of violence, by type of violence



Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017)

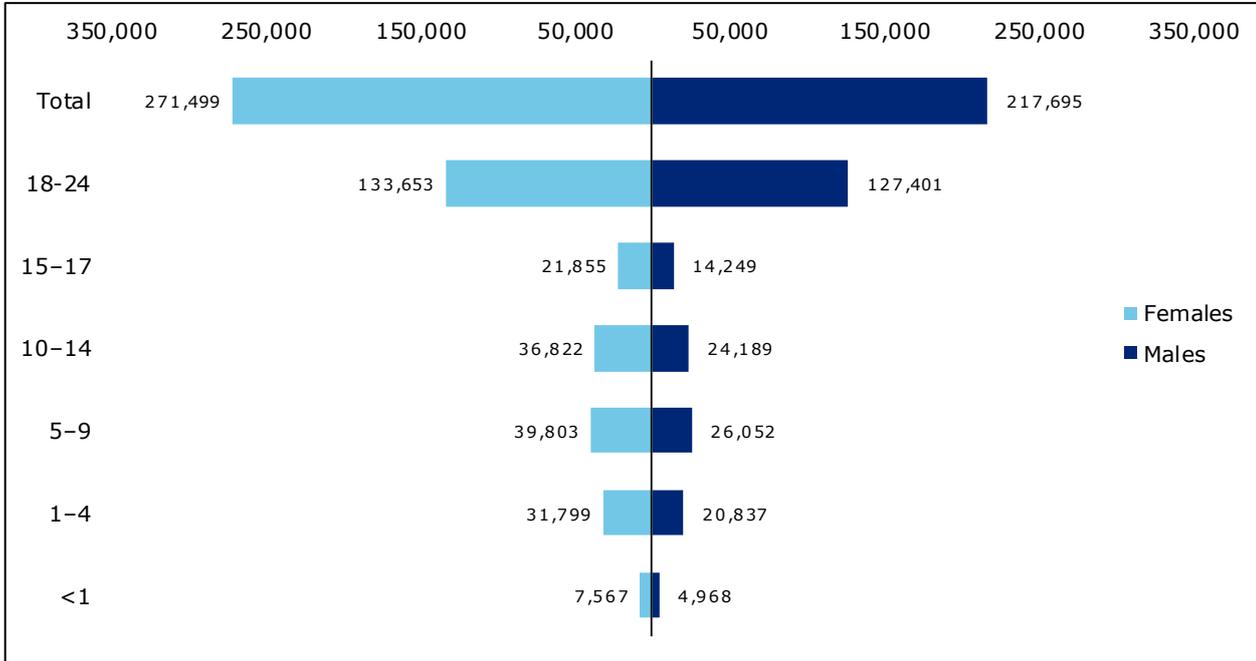
Chart 3.5 and Chart 3.6 show the estimated number of total violence cases, by gender and age, for both Australia and NSW. Female experiences of violence is higher than males across all age brackets, particularly in sexual violence.

Chart 3.5 Estimated number of total cases of violence in NSW in FY16-17, by age



Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017)

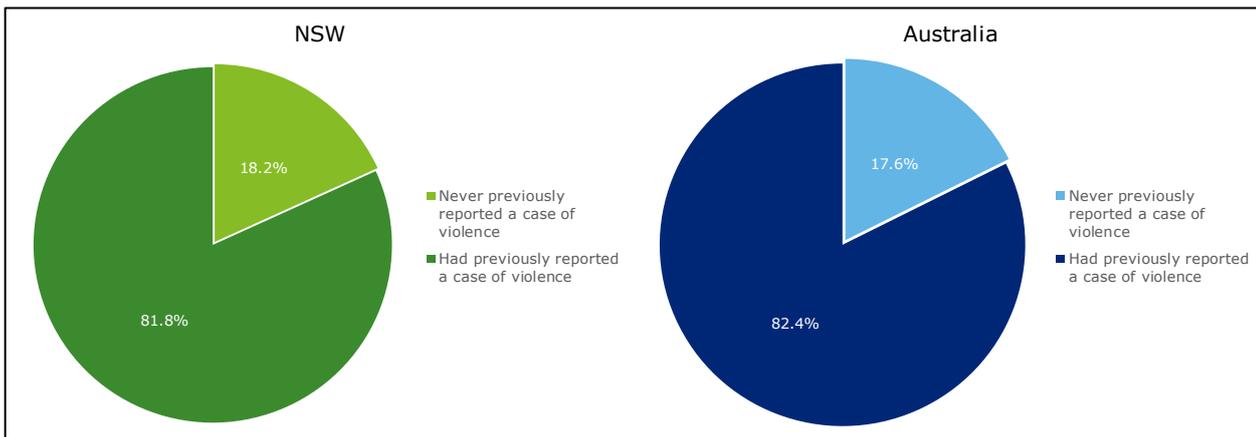
Chart 3.6 Estimated number of total cases of child violence in Australia in FY16-17, by age



Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017).

Of the total cases in FY16-17, approximately 16.1% of children and young people in NSW and 15.8% in Australia were estimated to be harmed for the first time (see Chart 3.7).

Chart 3.7 Distribution of total cases that are new cases in FY16-17, NSW and Australia

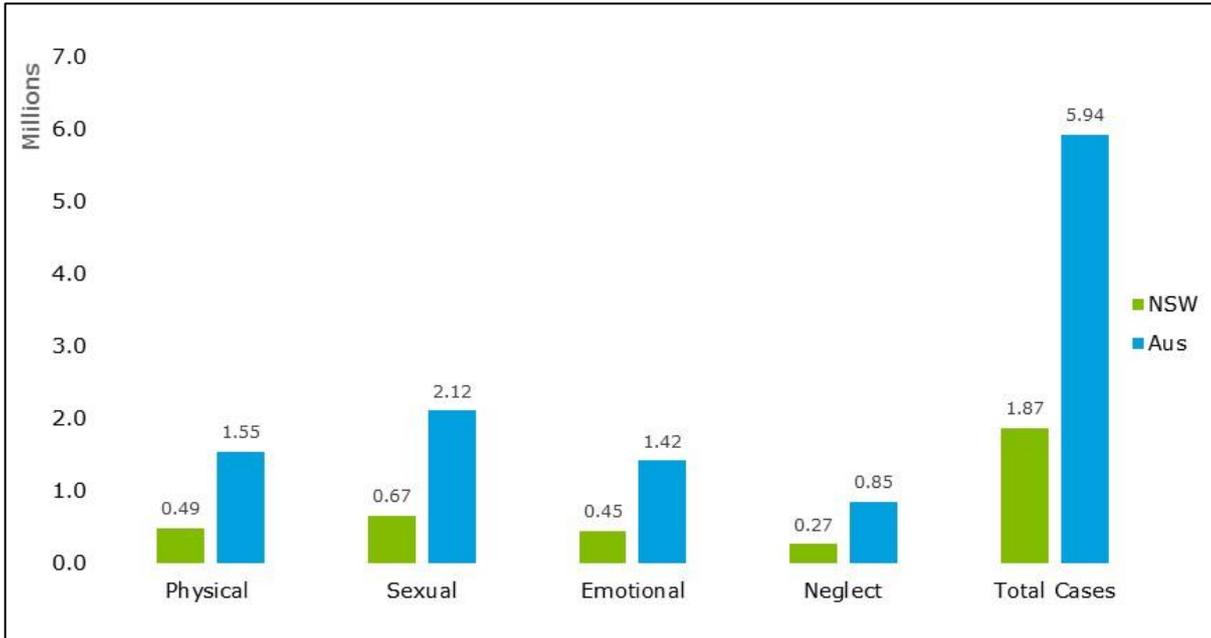


Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017).

3.3 Lifetime cases

In FY16-17, there were an estimated 5.94 million lifetime cases of violence in Australia; that is, people of any age who had ever experienced violence, where the violence occurred when they were aged 0 to 24 years. Of these, 1.87 million (31%) were in NSW. Chart 3.8 presents the estimates of lifetime cases of violence by type. Sexual (36%) and physical (26%) violence represented the highest proportion of lifetime cases, with these trends similar across Australia and NSW.

Chart 3.8 Estimated number of lifetime cases of violence, by type of violence



Source: Deloitte Access Economics estimates based on substantiations and personal safety survey data, Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017).

3.4 Mortality

It is very difficult to detect and measure fatal cases of violence. As a result, caution must be exercised when interpreting the estimates here of deaths attributable to violence against children and young people. Despite the uncertainty, it is a necessary exercise to approximate the number of deaths attributable to violence in order to provide a holistic overview of the total costs associated with violence against children and young people. It is estimated that in FY16-17, there were approximately 21 deaths in NSW and 49 deaths in Australia directly attributable to violence against children and young people. This figure only includes deaths that were a direct consequence of violence; it excludes deaths that occur later in life as a result of another condition that is attributed to violence.

3.5 Co-occurrence of harm

The co-occurrence of harm refers to amplified effects on a victim that has either experienced multiple types of abuse and/or multiple occasions of abuse. Note that the subsequent sections examine data on both child abuse and violence against young people in the context of co-occurrence of harm. Note also that the Personal Safety Survey (ABS 2017) reports co-occurrence of harm for those aged 18 to 24 years of age, but not to the level of detail as reported by child abuse data.

3.5.1 Exposure to multiple types of abuse and violence

Table 3.5 and Table 3.6 provide the exposure to multiple types of abuse for both cases in FY16-17 and lifetime cases for males and females aged 0-17. Prevalence rates from Moore et al. (2015) were allocated to the four broad categories, 'Sexual', 'Physical', 'Emotional' and 'Neglect', whilst the remaining prevalence rates were aggregated into the 'Multiple types of abuse' category. These remaining prevalence rates were the various combinations of these four types of abuse and included 'Sexual and Physical', 'Emotional and Neglect' and 'Physical, Emotional and Sexual'. Refer to Appendix C for the full breakdown of co-occurrence estimates by the combinations of types of abuse.

The numbers across the 'Multiple types of abuse' category for both males and females represent approximately half of the total FY16-17 and lifetime cases of abuse. These figures suggest that victims are often exposed to multiple types of abuse.

Table 3.5 Exposure to multiple types of abuse in FY16-17 and lifetime cases, males

Males	Prevalence rate	Total cases in 2016		Lifetime cases	
		NSW	Australia	NSW	Australia
Sexual	2.6%	14,487	45,929	235,589	761,276
Physical	1.9%	41,471	131,644	276,249	892,664
Emotional	1.8%	32,145	101,949	279,837	904,257
Neglect	0.5%	4,862	15,365	133,939	432,807
Multiple types of abuse	6.1%	13,359	41,995	233,763	731,449
Total	12.9%	92,965	294,887	925,615	2,991,004

Source: Source: Deloitte Access Economics estimates based on Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017).

Table 3.6 Exposure to multiple types of abuse in FY16-17 and lifetime cases, females

Females	Prevalence rate	Total cases in 2016		Lifetime cases	
		NSW	Australia	NSW	Australia
Sexual	7.8%	36,704	116,412	395,454	589,888
Physical	2.3%	35,527	112,756	224,019	700,210
Emotional	1.2%	34,797	110,403	188,723	418,775
Neglect	0.9%	7,648	24,202	133,979	418,775
Multiple types of abuse	9.6%	18,925	59,692	373,795	1,165,239
Total	21.8%	114,676	363,772	942,175	2,994,937

Source: Deloitte Access Economics estimates based on Finkelhor et al. (2013), Moore et al. (2015), AIHW (2018) and ABS (2017).

While the above tables are specific only to the cohort aged 0-17, data from the Personal Safety Survey (ABS 2017) provides further evidence that those aged 18-24 also experience multiple types of violence. On average, approximately 10% of people aged 18-24 who reported violence in the preceding 12 months had experienced both sexual and physical violence. However, the survey does not capture rates of co-occurring violence to the detail as has been documented in the child abuse literature.

3.5.2 Exposure to multiple occasions of abuse and violence

To determine the rate of exposure to multiple occasions of abuse in Australia and NSW, a measure of cases per child was calculated by dividing the total number of substantiations by the total number of children in these substantiations. Table 3.7 presents this data, taken from the AIHW (2017). In FY16-17, there were 1.38 cases per child across Australia, and a much higher rate of 1.85 cases per child in NSW. These measures indicate that it is common for victims to experience multiple occasions of abuse.

Table 3.7 Number of substantiated cases per child in FY16-17, for NSW and Australia

	NSW	Australia
Total number of children in substantiations	18,819	49,315

Total number of substantiated cases	35,005	67,968
Average number of cases per child	1.85	1.38

Source: AIHW (2018)

Similar to above, data from the Personal Safety Survey (ABS 2017) provides further evidence that those aged 18-24 tend to experience multiple occasions of violence. For example, 54% of males and 68% of females report experiencing more than one incident of violence by a previous partner. However, the survey does not capture rates of co-occurring violence to the detail as has been documented in the child abuse literature.

4 Annual costs

This chapter measures the annual FY16-17 costs that can be attributed to violence against children and young people. The annual cost is a snapshot of whole-of-system costs in a given year.

This chapter provides an overview of the estimated annual costs of violence against children and young people in FY16-17. The methodology and data sources used to estimate annual costs are detailed in Section 2.5, as well as in Appendix A and Appendix B.

4.1 Health system costs

In FY16-17, total health system costs attributable to violence against children and young people amounted to \$575.9 million for NSW and \$1.84 billion for Australia. Table 4.1 illustrates the cost breakdown by type of violence.

Table 4.1 Annual health system costs for NSW and Australia in FY16-17, by type of violence

Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$123.7	21%	\$395.6	21%
Sexual	\$247.9	43%	\$793.1	43%
Emotional	\$134.4	23%	\$429.9	23%
Neglect	\$69.8	12%	\$223.3	12%
Total	\$575.9	100%	\$1,841.9	100%

Source: Deloitte Access Economics estimates based on various data sources such as AIHW (2010), AIHW (2018), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how health system costs are estimated).

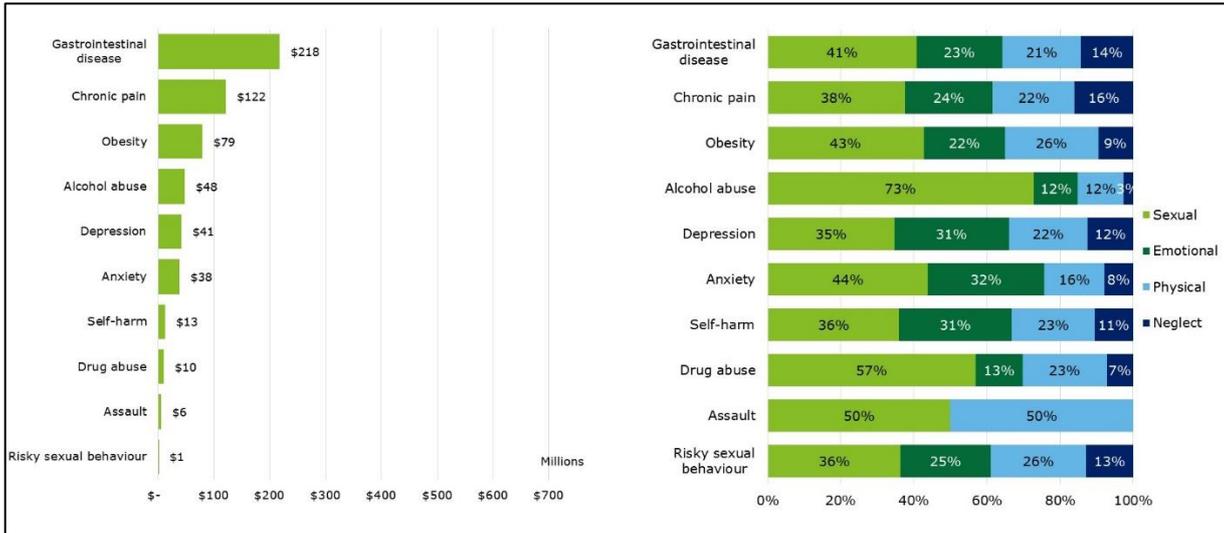
As seen in Table 4.1, the cost distribution by type of violence is the same in both NSW and Australia. This is due to the same PAFs being applied to total annual health system costs in both NSW and Australia. Sexual violence against children and young people was the largest driver of health system costs, contributing to 43% of costs. Physical and emotional violence each contributed to 21% and 23% respectively, whilst neglect contributed around 12% of total health system costs.

Chart 4.1 and Chart 4.2 show the health system cost for NSW and Australia, according to health condition and the proportion of costs for each health condition cost, by type of violence. Gastrointestinal disease is the main contributor to health costs attributable to violence against children and young people, estimated to cost NSW around \$218 million and Australia \$696 million.

In the context of type of violence, sexual violence against children and young people is the largest contributor to all the longer-term health conditions. In particular, sexual violence contributed substantially to substance abuse costs, with 73% of alcohol abuse costs and 57% of drug abuse costs attributed to sexual violence. As the same PAFs were applied to both NSW and Australia, the distribution of costs for each health sequelae, across type of violence, is the same in NSW and Australia.

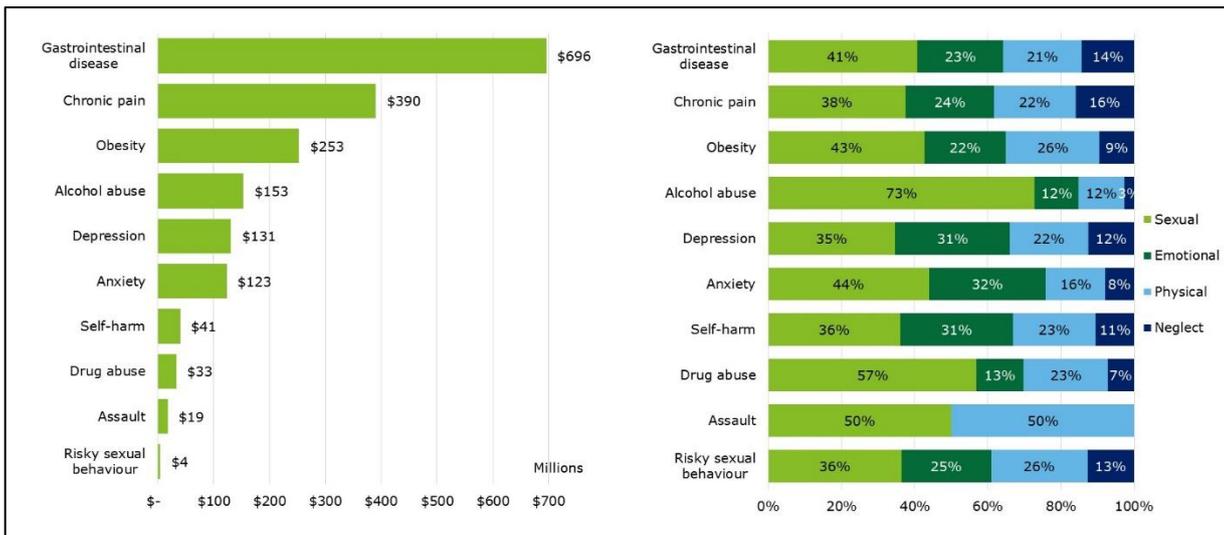
Economic cost of violence against children and young people

Chart 4.1 Annual health system costs for NSW in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as AIHW (2010), AIHW (2018), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how health system costs are estimated).

Chart 4.2 Annual health system costs for Australia in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as AIHW (2010), AIHW (2018), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how health system costs are estimated).

4.2 Education costs

The costs of additional education assistance attributable to violence against children and young people were \$2.6 million in NSW and \$8.2 million in Australia, as demonstrated in Table 4.2.

Table 4.2 Annual additional education assistance costs for NSW and Australia in FY16-17, by type of violence

Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$0.8	32%	\$2.6	32%
Sexual	\$0.7	27%	\$2.2	27%
Emotional	\$0.6	24%	\$2.0	24%
Neglect	\$0.5	17%	\$1.4	17%
Total	\$2.6	100%	\$8.2	100%

Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how additional education assistance costs are estimated).

As seen in Table 4.2, about 32% of education costs were attributable to physical violence. Sexual violence against children and young people contributed to 27% of costs, emotional contributed 24% and neglect contributed to the remaining 17% of costs. The distribution of costs is the same within NSW and Australia due to matching PAFs being applied in both cases.

4.3 Justice system costs

In FY16-17, justice system costs attributable to violence against children and young people were estimated to be \$37.2 million in NSW and \$123.8 million in Australia, as shown in Table 4.3.

Table 4.3 Annual justice system costs for NSW and Australia in FY16-17, by type of violence

Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$7.3	20%	\$24.6	20%
Sexual	\$9.2	25%	\$29.6	24%
Emotional	\$11.9	32%	\$45.1	36%
Neglect	\$8.8	24%	\$24.4	20%
Total	\$37.2	100%	\$123.8	100%

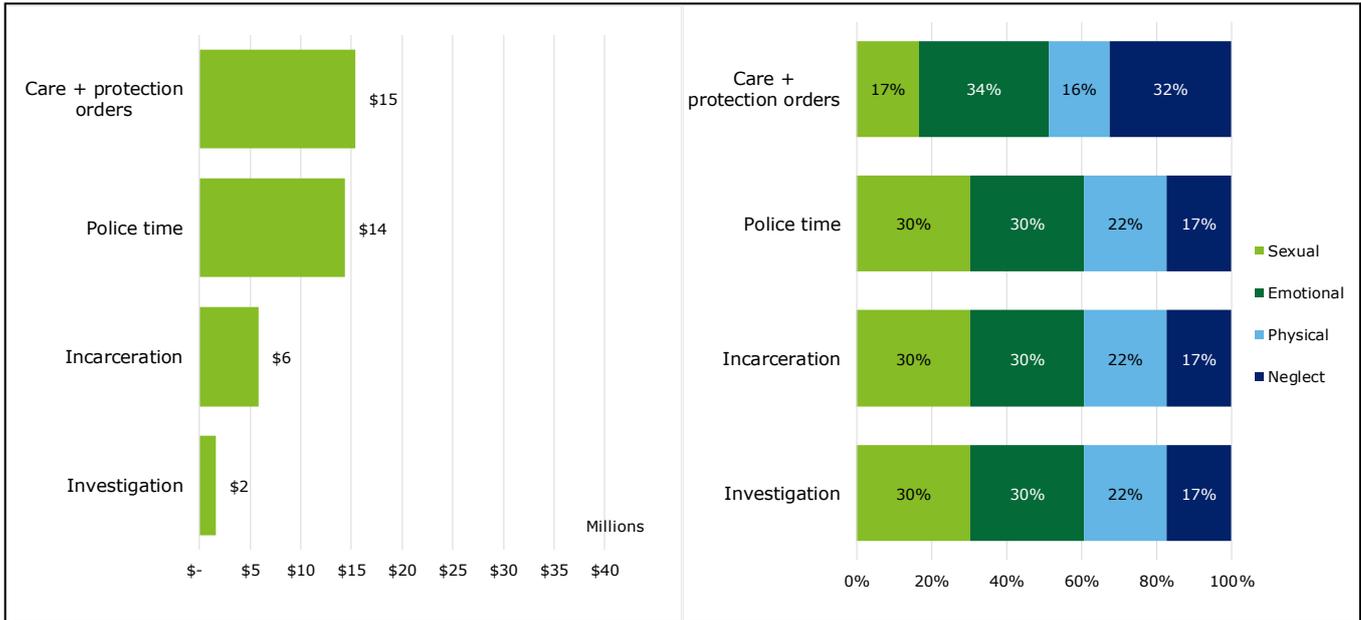
Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how justice system costs are estimated).

The breakdown of justice system costs across type of violence is relatively similar in NSW and Australia, with emotional violence contributing towards the majority of costs. As shown in Table 4.3, in NSW around 32% of costs were attributable to emotional violence; in Australia the contribution of emotional violence was higher at 36%.

Justice system costs comprise of four cost components: care and protection orders, policing, incarceration and investigation. As shown in Chart 4.3 and Chart 4.4, care and protection orders are the largest component of crime costs attributable to violence against children and young people. In NSW and Australia, care and protection orders contributed to approximately half of justice system costs in FY16-17.

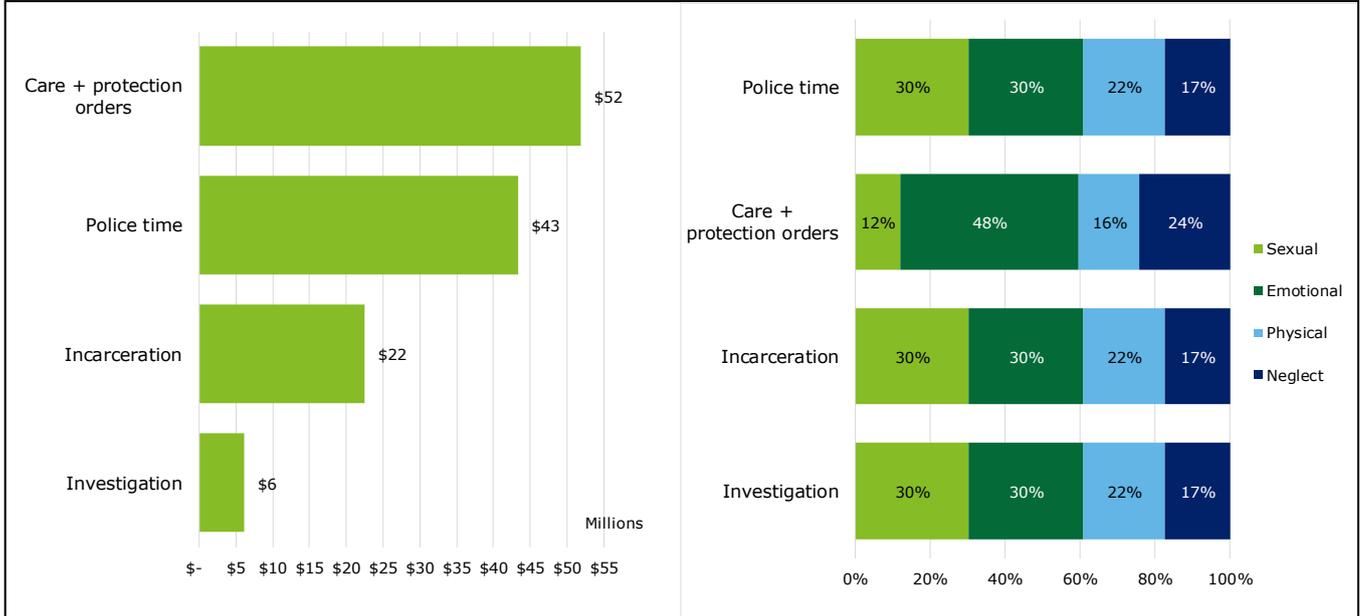
Economic cost of violence against children and young people

Chart 4.3 Annual justice system costs for NSW in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how justice system costs are estimated).

Chart 4.4 Annual justice system costs for Australia in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how justice system costs are estimated).

As seen in Chart 4.3 and Chart 4.4, distribution of costs across violence type is the same in NSW and Australia, for all justice system costs with the exception of care and protection orders. Care and protection orders are estimated based on the individual unit cost and prevalence rates of NSW and Australia. As such, the distribution of costs across violence type reflects the prevalence numbers within each type of violence.

Conversely, the rest of the cost components (policing, incarceration and investigation) were estimated based on applying the same PAFs to annual expenditure in NSW and Australia. This resulted in the same distribution of costs across types of violence in both NSW and the country.

4.4 Child protection system costs

Costs of child protection for those who experienced violence as a child or young person amounted to \$1.9 billion in NSW and around \$5.2 billion in Australia, as illustrated in Table 4.4.

Table 4.4 Annual child protection system costs for NSW and Australia in FY16-17, by type of violence

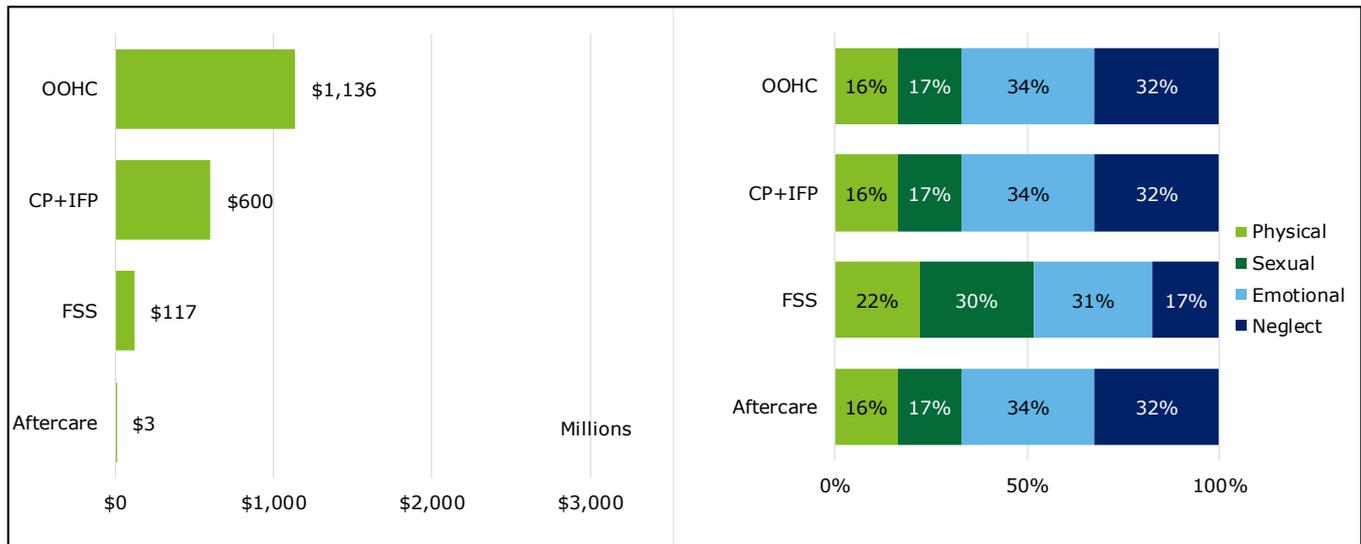
Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$309.6	17%	\$882.7	17%
Sexual	\$326.0	18%	\$716.2	14%
Emotional	\$636.5	34%	\$2,425.4	46%
Neglect	\$584.3	31%	\$1,231.0	23%
Total	\$1,856.4	100%	\$5,255.3	100%

Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), and Moore et al. (2015).

Child protection system costs can be broken down into child protection (CP) and Intensive Family Preservation (IFP) services, Aftercare, OOHC costs and family support services (FSS).

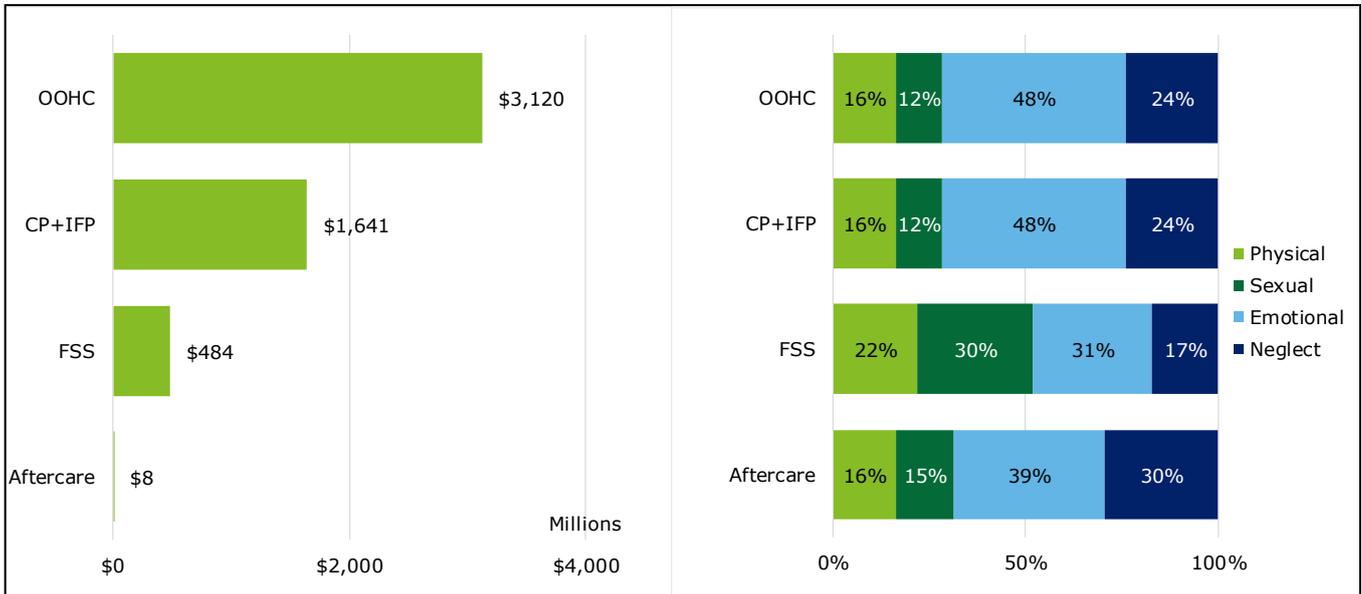
Chart 4.5 and Chart 4.6 illustrate the expenditure components of child protection system costs. In NSW, the largest cost component in FY16-17, OOHC costs, were approximately \$1.1 billion and in Australia OOHC costs amounted to \$3.1 billion.

Chart 4.5 Annual child protection system costs for NSW in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), and Moore et al. (2015).

Chart 4.6 Annual child protection system costs for Australia in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), and Moore et al. (2015).

Distribution of costs across types of violence is driven by the underlying estimation method. All annual child protection costs are calculated by allocating annual expenditure for each cost component by prevalence numbers in each type of violence. The distribution of these costs hence reflect prevalence numbers of each type of violence.

4.5 Housing and Homelessness costs

Table 4.5 shows the total supported accommodation and public housing costs attributable to violence against children and young people, which indicates that costs in NSW amounted to \$40.6 million and costs in Australia were \$161.7 million.

Table 4.5 Annual supported accommodation and public housing costs for NSW and Australia in FY15-16, by type of violence

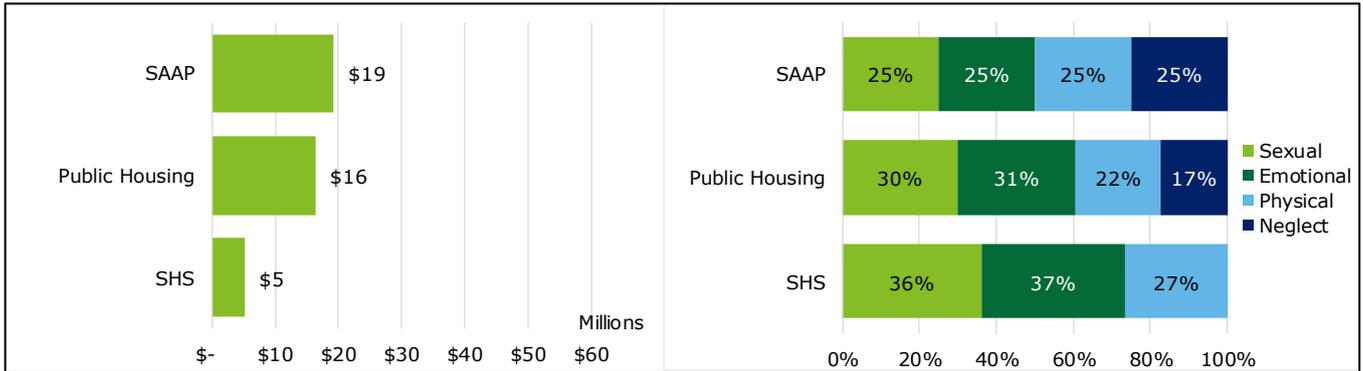
Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$9.7	24%	\$39.2	24%
Sexual	\$11.5	28%	\$44.6	28%
Emotional	\$11.7	29%	\$45.3	28%
Neglect	\$7.6	19%	\$32.7	20%
Total	\$40.6	100%	\$161.7	100%

Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how supported accommodation and public housing costs are estimated).

As Chart 4.7 and Chart 4.8 show, supported accommodation is the larger of the three cost components of annual expenditure on housing and homelessness.

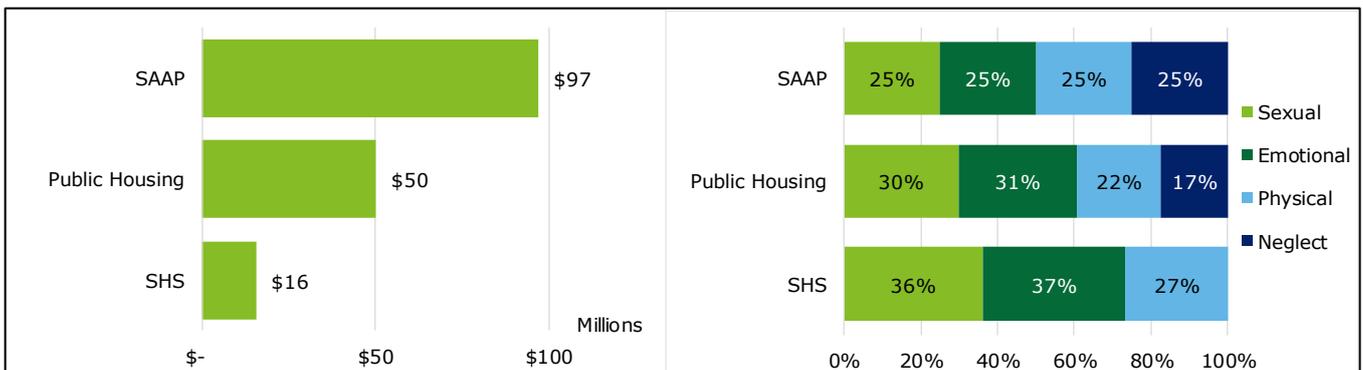
Economic cost of violence against children and young people

Chart 4.7 Annual housing and homelessness costs for NSW in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how supported accommodation and public housing costs are estimated).

Chart 4.8 Annual housing and homelessness costs for Australia in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how supported accommodation and public housing costs are estimated).

As there were no individual PAFs for each type of violence for SAAP, costs were equally allocated amongst the four types of violence, for NSW and Australia. Moreover, the PAFs for public housing are the same for both NSW and Australia, hence distribution of costs are the same, for SAAP, public housing and specialist homelessness services (SHS) in both NSW and Australia. As is noted in section 2.3, neglect costs for the cohort 18-24 are not included, hence the absence of a neglect portion in the Public Housing (18-24) categories.

4.6 Productivity losses

Productivity losses result from relatively lower employment rates, as well as lower productivity levels, of those who experienced violence as a child or young person. This may arise through excessive absenteeism and subsequent failure to complete Year 12 and tertiary education due to the individuals' experience of violence. Productivity losses are likely to incur costs associated with administration, management time and overtime as employers attempt to maintain productivity, as well as shortened working lives and reduced earning capacity of children and young people who have experienced violence. In FY16-17, costs of productivity losses were estimated to be \$578 million in NSW and \$1.6 billion in Australia.

Economic cost of violence against children and young people

Table 4.6 Annual costs of reduced employment and productivity losses for NSW and Australia in FY16-17, by type of violence

Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$185	32%	\$519	32%
Sexual	\$138	24%	\$383	24%
Emotional	\$211	36%	\$593	37%
Neglect	\$45	8%	\$126	8%
Total	\$578	100%	\$1,621	100%

Source: Deloitte Access Economics estimates based on various data sources such as Australian Bureau of Statistics (2016a), Productivity Commission (2010), AIHW (2018), and Moore et al. (2015).

Around 37% of productivity losses stem from emotional violence, one-third from physical violence, one-quarter from sexual violence and the remaining costs to neglect (6%). As there were no PAFs available for productivity losses, costs were allocated based on the total number of prevalence violence cases for each type of violence and gender. The distribution of productivity costs across type of violence hence reflects the distribution of prevalence cases across each type of violence and gender, for NSW and Australia.

Chart 4.9 below illustrates the extent of costs in NSW and Australia associated with reduced employment and lost productivity.

Chart 4.9 Annual costs of reduced employment and lost productivity for Australia and NSW, by type of violence



Source: Deloitte Access Economics estimates based on various data sources such as Australian Bureau of Statistics (2016a), Productivity Commission (2010), AIHW (2018), and Moore et al. (2015).

4.7 Deadweight losses

Deadweight losses are associated with additional government expenditures and forgone taxation revenue attributable to violence against children and young people. The most likely associated deadweight losses arise from the forgone taxation revenue due to lower employment rates and earning capacity of victims, increased social welfare payments to victims, and the value of government services provided such as health system funding. Deadweight losses in FY16-17, attributable to violence against children and young people, were estimated to be \$741 million in NSW and \$2.2 billion in Australia, as shown in Table 4.7.

Economic cost of violence against children and young people

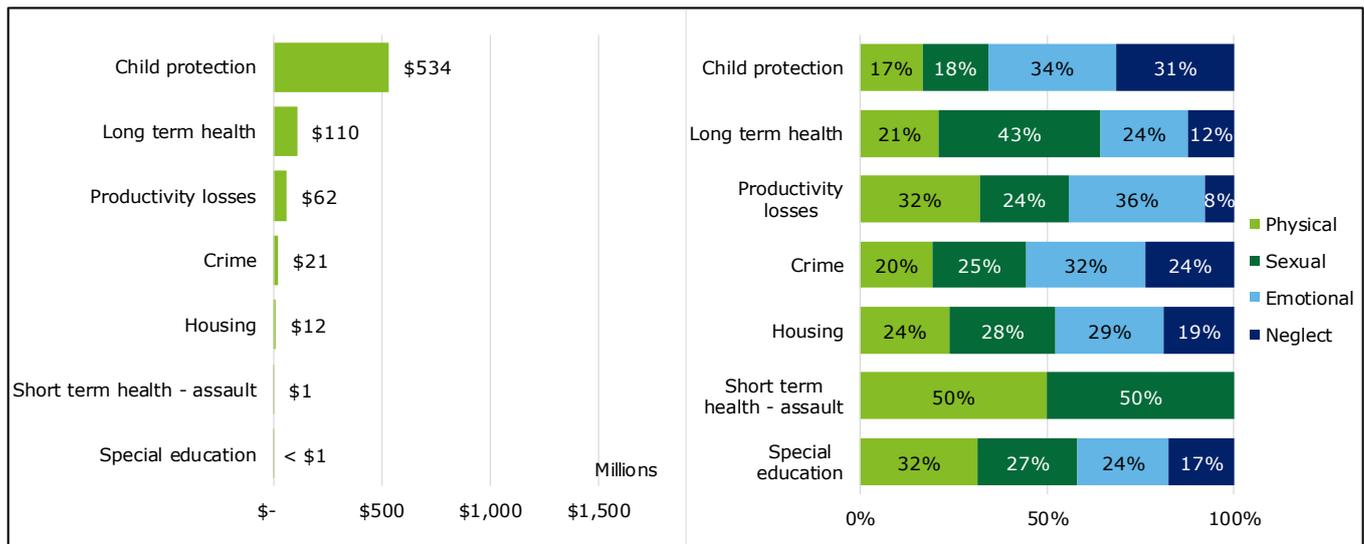
Table 4.7 Annual burden of deadweight losses for NSW and Australia in FY16-17, by type of violence

Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$140	19%	\$412	19%
Sexual	\$165	22%	\$431	20%
Emotional	\$242	33%	\$883	41%
Neglect	\$194	26%	\$435	20%
Total	\$741	100%	\$2,160	100%

Source: Deloitte Access Economics estimates based on various data sources such as Productivity Commission (2003), McCarthy et al. (2016). Australian Bureau of Statistics (2017d) and Australian Bureau of Statistics (2017e).

Across the various costs relating to deadweight losses, child protection costs generated the largest amount of deadweight losses in FY16-17 for NSW, amounting to \$534 million. In Australia, child protection costs generated \$1.5 billion in deadweight losses. These are illustrated in Chart 4.10 and Chart 4.11.

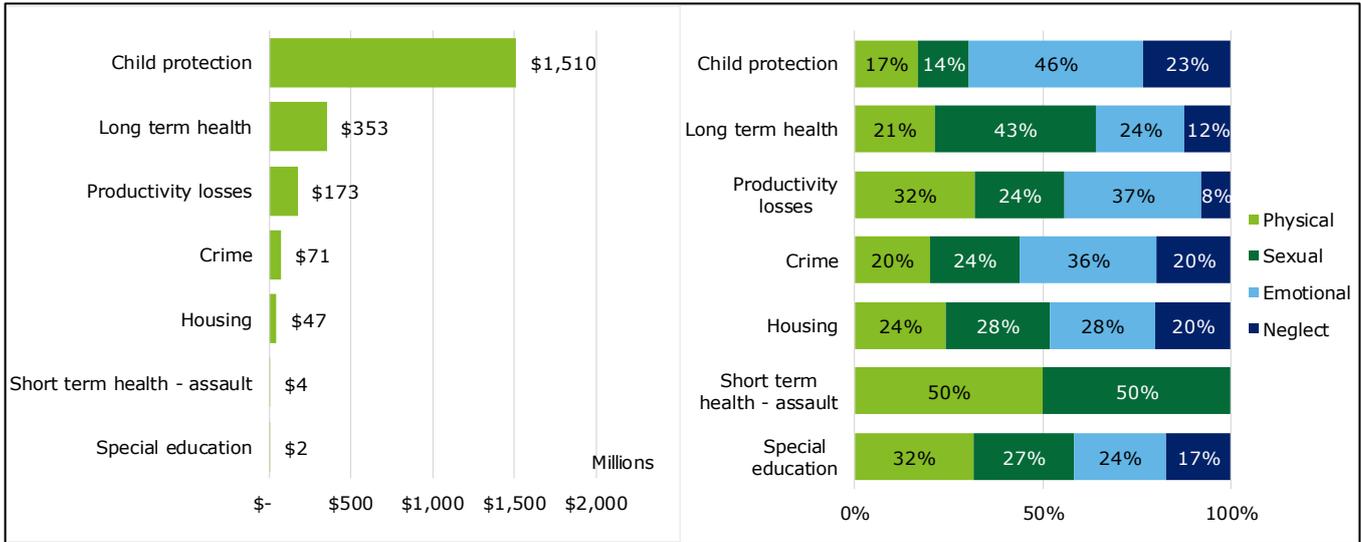
Chart 4.10 Annual deadweight losses for NSW in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as Productivity Commission (2003), McCarthy et al. (2016). Australian Bureau of Statistics (2017d) and Australian Bureau of Statistics (2017e).

Economic cost of violence against children and young people

Chart 4.11 Annual deadweight losses for Australia in FY16-17, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as Productivity Commission (2003), McCarthy et al. (2016), Australian Bureau of Statistics (2017d) and Australian Bureau of Statistics (2017e).

4.8 Quality of life and lifespan

4.8.1 Burden of disease

The burden of disease and injury is measured in disability adjusted life years (DALYs). As shown in Table 4.8 and Table 4.9, burden of disease costs were estimated as \$7.3 billion in NSW and \$23.0 billion in Australia.

Table 4.8 Annual burden of disease costs for NSW in FY16-17, by type of violence

Type of violence	Cost (\$ million)	% of total cost
Physical	\$1,626	22%
Sexual	\$3,031	42%
Emotional	\$1,867	26%
Neglect	\$772	11%
Total	\$7,296	100%

Source: Deloitte Access Economics estimates based on various data sources such as Department of the Prime Minister and Cabinet (2014), Institute for Health Metrics and Evaluation (2015), McCarthy et al. (2016) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how burden of disease costs are estimated).

Table 4.9 Annual burden of disease costs for Australia in FY16-17, by type of violence

Type of violence	Cost (\$ million)	% of total cost
Physical	\$5,087	22%
Sexual	\$9,484	42%
Emotional	\$5,842	26%
Neglect	\$2,416	11%
Total	\$22,829	100%

Source: Deloitte Access Economics estimates based on various data sources such as Department of the Prime Minister and Cabinet (2014), Institute for Health Metrics and Evaluation (2015), McCarthy et al. (2016) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how burden of disease costs are estimated).

Table 4.8 and Table 4.9 also indicates that burden of disease costs are largely driven by sexual violence (around 42% of total costs), followed by emotional violence (26%), physical violence (22%) and neglect (11%). The same PAFs were used for both NSW and Australia, resulting in the same distribution of burden of disease costs between NSW and Australia.

4.8.2 Premature mortality

Premature mortality costs were an additional \$61 million in NSW and \$195 million in Australia. All premature mortality costs were attributed to physical violence.

5 Lifetime costs

This chapter measures the lifetime costs that can be attributed to new cases of violence against children and young people in FY16-17. The lifetime cost of violence against children and young people is forward-looking and captures the whole-life, whole-system costs for the individuals who experienced violence for the first time in FY16-17.

This section provides an overview of the estimated lifetime costs of violence against children and young people. The methodology and data sources used to estimate annual costs are detailed in Section 2.5, as well as in Appendix A and Appendix B.

5.1 Health system costs

The total estimated health system lifetime costs attributable to violence against children and young people amounted to \$1.6 billion for NSW and \$4.9 billion for Australia. Table 5.1 illustrates the cost breakdown by type of violence.

Table 5.1 Health system lifetime costs for NSW and Australia and breakdown, by type of violence

Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$300	19%	\$937	19%
Sexual	\$685	43%	\$2,116	43%
Emotional	\$355	22%	\$1,100	22%
Neglect	\$245	15%	\$744	15%
Total	\$1,584	100%	\$4,897	100%

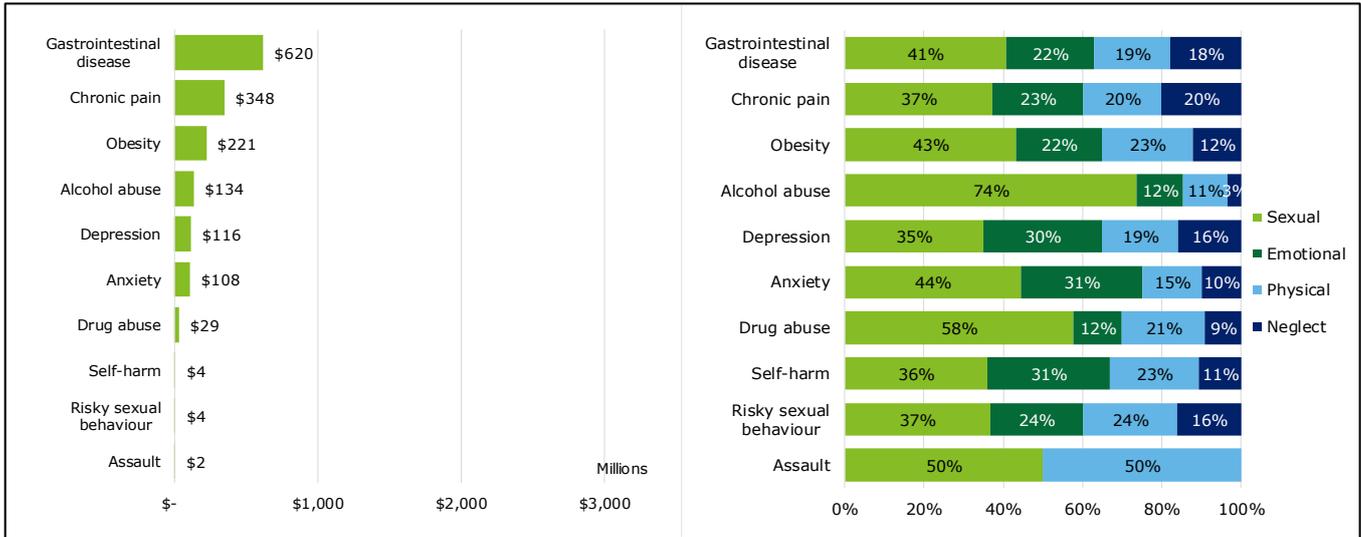
Source: Deloitte Access Economics estimates based on various data sources such as AIHW (2010), AIHW (2018), Moore et al. (2015) PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how health system costs are estimated).

As seen in Table 5.1, the cost breakdown by type of violence is similar in both NSW and Australia, due to the same PAFs being applied to both NSW and Australia for all health sequelae. Sexual violence contributed 43% to estimated lifetime health system costs, emotional violence contributed to around 22% of costs, physical violence contributed to 19% and neglect contributed to 15% of total health system costs.

Chart 5.1 and Chart 5.2 show the lifetime health system costs for NSW and Australia, according to health condition and the proportion of costs for each health condition cost by type of violence. As seen in Chart 5.1 and Chart 5.2, gastrointestinal disease is the main contributor to health system costs attributable to violence against young people, estimated to cost NSW around \$620 million and Australia \$1.8 billion.

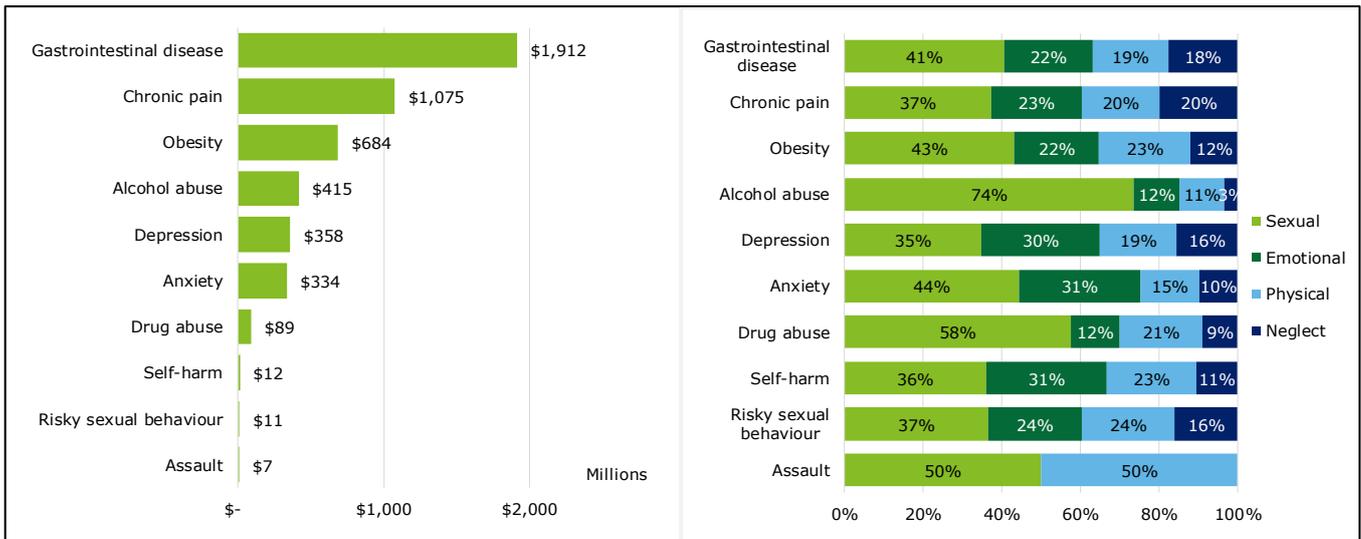
Economic cost of violence against children and young people

Chart 5.1 Health system lifetime costs for NSW, by condition and type of violence



Source: Deloitte Access Economics estimates based on various data sources such as AIHW (2010), AIHW (2018), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how health system costs are estimated).

Chart 5.2 Health system lifetime costs for Australia, by condition and type of violence



Source: Deloitte Access Economics estimates based on various data sources such as AIHW (2010), AIHW (2018), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how health system costs are estimated).

The distribution of annual and lifetime costs across each type of violence is the same, for each health sequelae. This is driven by the fact that the unit costs used to estimate lifetime costs are derived from annual costs, which are distributed based on the PAFs for each type of violence. Moreover, the same PAFs were used for NSW and Australia, resulting in the same distribution of lifetime costs in NSW and Australia.

5.2 Education costs

The estimated lifetime costs of additional education assistance attributable to violence against children and young people are \$4.0 million in NSW and \$14.2 million in Australia, as demonstrated in Table 5.2.

Table 5.2 Lifetime costs of additional education assistance, NSW and Australia, by type of violence

Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$1.3	32%	\$3.8	27%
Sexual	\$1.1	27%	\$5.3	38%
Emotional	\$1.0	24%	\$2.9	21%
Neglect	\$0.7	17%	\$2.1	15%
Total	\$4.0	100%	\$14.2	100%

Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how additional education assistance costs are estimated).

Compared to annual costs, lifetime costs of special education are higher but distribution of costs across types of violence is largely the same (i.e. the difference is by a few decimal places) for both lifetime and annual costs. This is due to lifetime costs being based on forward projection of unit costs, which are based on the same PAFs as annual costs. The distribution of costs across each type of violence is therefore the same for annual and lifetime costs.

5.3 Justice system costs

The estimated justice system costs attributable to violence against children and young people, as shown in Table 5.3, amounted to \$10.8 million in NSW and \$44.9 million in Australia. In NSW, almost one-third of costs were attributable to emotional violence; in Australia the contribution of emotional violence was higher at 36%.

Table 5.3 Lifetime costs of crime for NSW and Australia, by type of violence

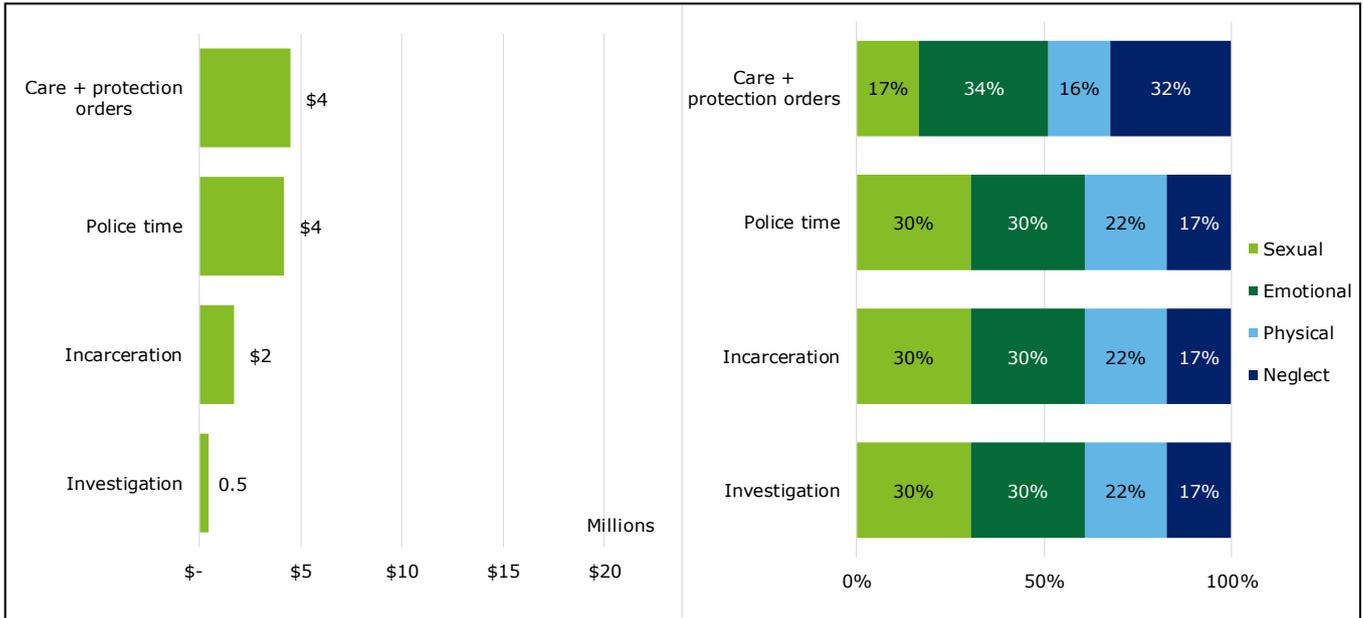
Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$2.1	20%	\$8.9	20%
Sexual	\$2.7	25%	\$10.7	24%
Emotional	\$3.5	32%	\$16.4	36%
Neglect	\$2.6	24%	\$8.8	20%
Total	\$10.8	100%	\$44.9	100%

Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how justice system costs are estimated).

Justice system costs comprise of four cost components: care and protection orders, policing, incarceration and investigation. As shown in Chart 5.3 and Chart 5.4, care and protection orders are the largest component of crime costs attributable to violence against children and young people.

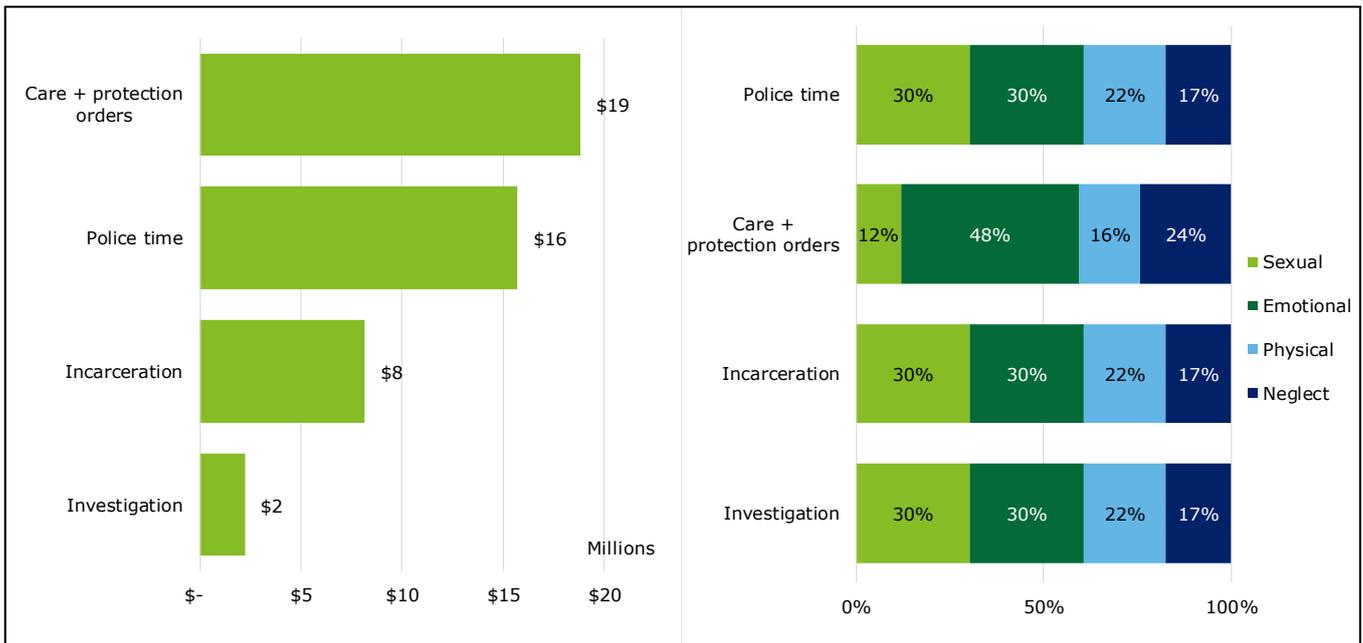
Economic cost of violence against children and young people

Chart 5.3 Lifetime costs of crime for NSW, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how justice system costs are estimated).

Chart 5.4 Lifetime costs of crime for Australia, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how justice system costs are estimated).

As seen in Chart 5.3 and Chart 5.4, costs of care and protection orders amounted to around \$4.0 million in Australia and \$19.0 million in NSW. Distribution of costs across each type of violence is largely the same, in NSW and Australia, for all justice system costs with the exception of care and protection orders. Care and protection orders are estimated based on the individual unit costs and prevalence rates of NSW and Australia.

As such, the distribution of costs across each type of violence reflects the prevalence numbers within each type of violence.

Conversely, the rest of the cost components (policing, incarceration and investigation) were estimated based on applying the same PAFs to annual expenditure in NSW and Australia. This resulted in the same distribution of costs across each type of violence in both NSW and the country.

Notably, annual justice system costs were estimated to be higher than lifetime costs. This is due to the fact that by definition prevalence is always higher than incidence, as incidence only considers the number of new cases of violence in a given year. For costs that are incurred just once per case of violence, such as those under justice system costs (i.e. care and protection orders, police time, incarceration and investigation), it follows that annual costs are higher than lifetime costs.

Additionally, annual and lifetime justice costs have the same percentage distribution across each type of violence. As the one-off lifetime costs are always a fixed proportion of annual costs under each type of violence, the distribution of annual and lifetime costs is always the same.

The impact of second generation crime (i.e. the potential for children who were abused to have higher propensity for committing crime during adulthood) is analysed qualitatively in Section 6.2.4.

5.4 Child protection system costs

Child protection system costs amounted to around \$2.0 billion in NSW and \$6.5 billion of estimated lifetime costs in Australia, as shown in Table 5.4.

Table 5.4 Lifetime costs of child protection for NSW and Australia, by type of violence

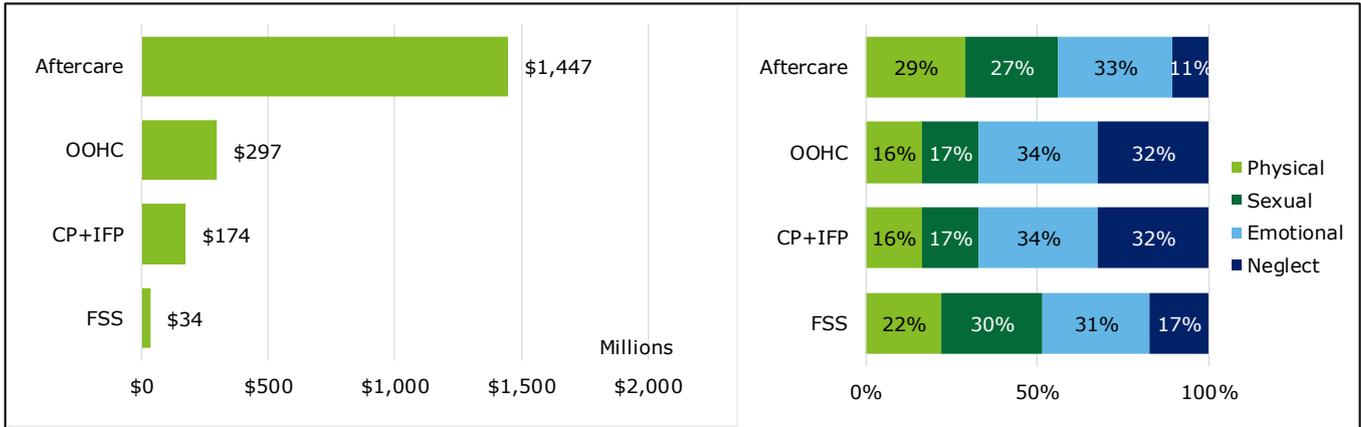
Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$506	26%	\$1,576	24%
Sexual	\$479	25%	\$1,389	21%
Emotional	\$656	34%	\$2,506	39%
Neglect	\$311	16%	\$1,011	16%
Total	\$1,952	100%	\$6,481	100%

Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), and Moore et al. (2015).

Child protection system costs can be broken down into OOHC costs, Aftercare, CP and IFP costs, and FSS costs. As shown in Chart 5.5 and Chart 5.6, in NSW lifetime aftercare costs was approximately \$1.5 billion and in Australia OOHC costs were \$3.9 billion.

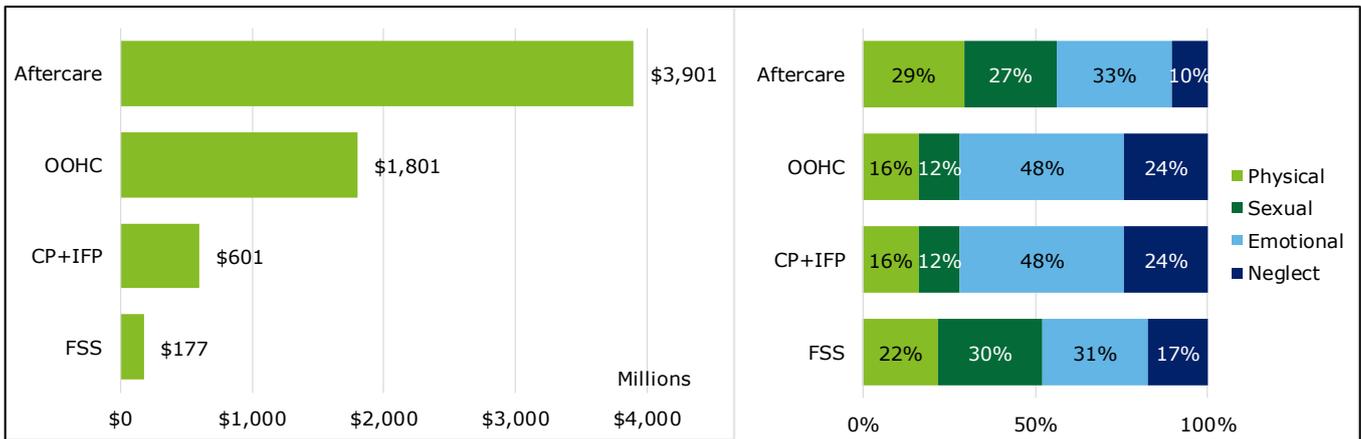
Economic cost of violence against children and young people

Chart 5.5 Lifetime child protection system costs for NSW, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), and Moore et al. (2015).

Chart 5.6 Lifetime child protection system costs for Australia, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), and Moore et al. (2015).

Importantly, costs associated with CP and IFP and FSS are one-off costs that are only incurred once per case of violence. As the number of incidence cases is always lower than the number of prevalence cases, lifetime costs are lower than annual costs. OOHC costs were assumed to extend until the child turned 18 years old. While OOHC costs are not once-off, annual costs are still higher than lifetime costs because incidence is much lower than prevalence. That is, the number of individuals who had experienced violence in the past and who are receiving OOHC in a given year is considerably higher than the number of new individuals receiving OOHC for the first time.

5.5 Housing and Homelessness Costs

Table 5.5 shows the total housing and homelessness costs attributable to violence against children and young people. Lifetime costs in NSW amounted to \$23.0 million and costs in Australia were \$96.8 million.

Table 5.5 Lifetime costs of housing and homelessness costs for NSW and Australia, by type of violence

	NSW	Australia
--	-----	-----------

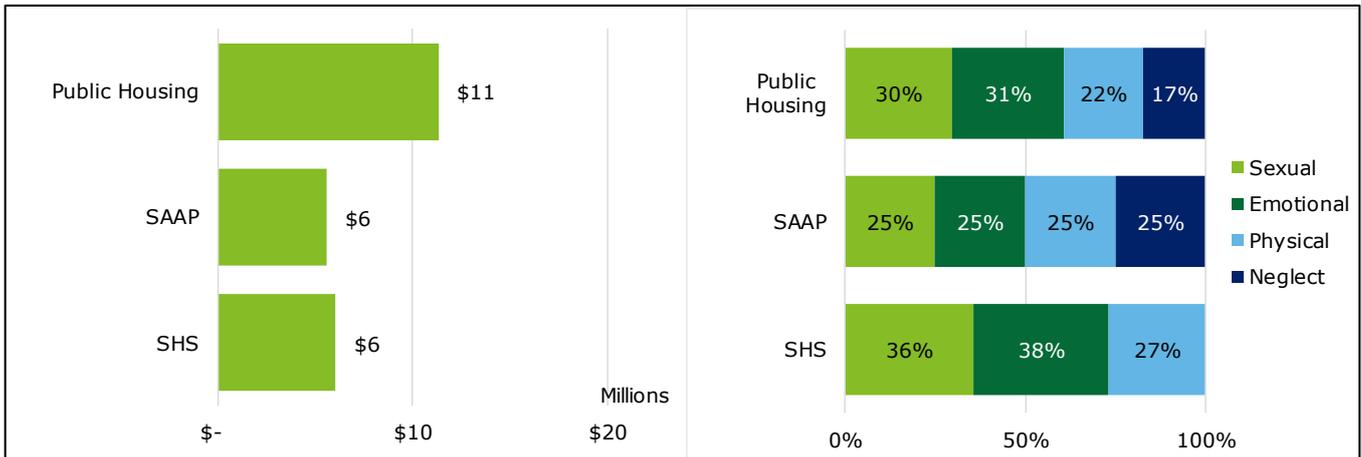
Economic cost of violence against children and young people

Type of violence	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$5.5	24%	\$21.0	22%
Sexual	\$6.9	30%	\$35.5	37%
Emotional	\$7.2	31%	\$25.9	27%
Neglect	\$3.4	15%	\$14.4	15%
Total	\$23.0	100%	\$96.8	100%

Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how supported accommodation and public housing costs are estimated).

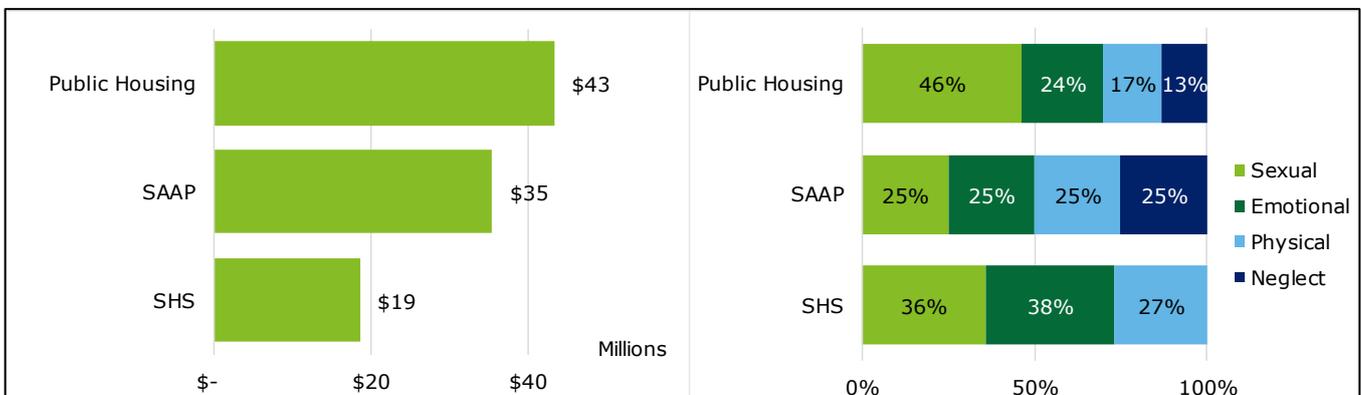
In NSW, public housing costs for the cohort 0-24 was the larger of the three components of expenditure on housing and homelessness services, costing approximately \$17 million with SAAP and SHS costing approximately \$6 million. In Australia, public housing costs \$43 million, SAAP costs amounted to \$35 million while SHS costs totalled \$19 million. This is illustrated in Chart 5.7 and Chart 5.8.

Chart 5.7 Lifetime costs of housing and homelessness for NSW, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how supported accommodation and public housing costs are estimated).

Chart 5.8 Lifetime costs of housing and homelessness for Australia, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as SCRGSP (2018), McCarthy et al. (2016), AIHW (2016), Moore et al. (2015) and PAFs from various sources (see section 2.5, Appendix A and Appendix B for further detail on how supported accommodation and public housing costs are estimated).

As SAAP costs are one off, lifetime costs are lower than annual costs because lifetime costs only include the costs associated with new cases of violence, while annual costs also include the expenditure associated with cases of repeat violence. Lifetime costs for public housing are still lower than annual costs, due to the relatively low number of incidence cases compared to prevalence cases. As is noted in Section 2.3, neglect costs for the cohort 18-24 are not included, hence the absence of a neglect portion in the Public Housing (18-24) categories.

5.6 Productivity losses

As seen in Table 5.6, costs resulting from reduced employment and lost productivity amounted to approximately \$583 million in NSW and \$1.7 billion in Australia.

Table 5.6 Lifetime costs of reduced employment and lost productivity for NSW and Australia, by type of violence

Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$187	32%	\$545	32%
Sexual	\$137	23%	\$411	24%
Emotional	\$214	37%	\$617	36%
Neglect	\$45	8%	\$134	8%
Total	\$583	100%	\$1,706	100%

Source: Deloitte Access Economics estimates based on various data sources such as Australian Bureau of Statistics (2016a), Productivity Commission (2010), AIHW (2018), and Moore et al. (2015).

Chart 5.9 illustrates the extent of costs in NSW and Australia associated with reduced employment and lost productivity.

Chart 5.9 Lifetime costs of reduced employment and lost productivity for NSW and Australia, by type of violence



Source: Deloitte Access Economics estimates based on various data sources such as Australian Bureau of Statistics (2016a), Productivity Commission (2010), AIHW (2018), and Moore et al. (2015).

5.7 Deadweight losses

Deadweight losses attributable to violence against children and young people amounted to a lifetime cost of \$897 million in NSW and \$2.7 billion in Australia, as shown in Table 5.7.

Table 5.7 Lifetime deadweight losses for Australia and NSW, by type of violence

Type of violence	NSW		Australia	
	Cost (\$ million)	% of total cost	Cost (\$ million)	% of total cost
Physical	\$290	32%	\$867	32%
Sexual	\$137	15%	\$411	15%
Emotional	\$460	51%	\$1,369	51%
Neglect	\$10	1%	\$32	1%
Total	\$897	100%	\$2,679	100%

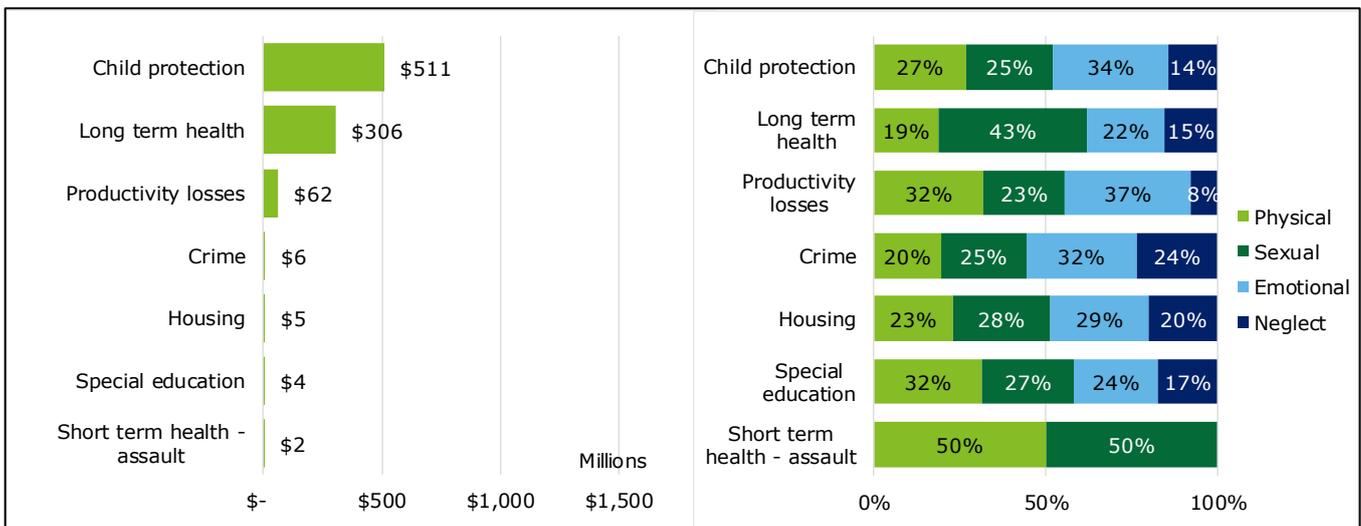
Economic cost of violence against children and young people

Physical	\$220	24%	\$681	24%
Sexual	\$281	31%	\$854	30%
Emotional	\$267	30%	\$935	32%
Neglect	\$129	14%	\$419	14%
Total	\$897	100%	\$2,889	100%

Source: Deloitte Access Economics estimates based on various data sources such as Productivity Commission (2003), McCarthy et al. (2016). Australian Bureau of Statistics (2017d) and Australian Bureau of Statistics (2017e).

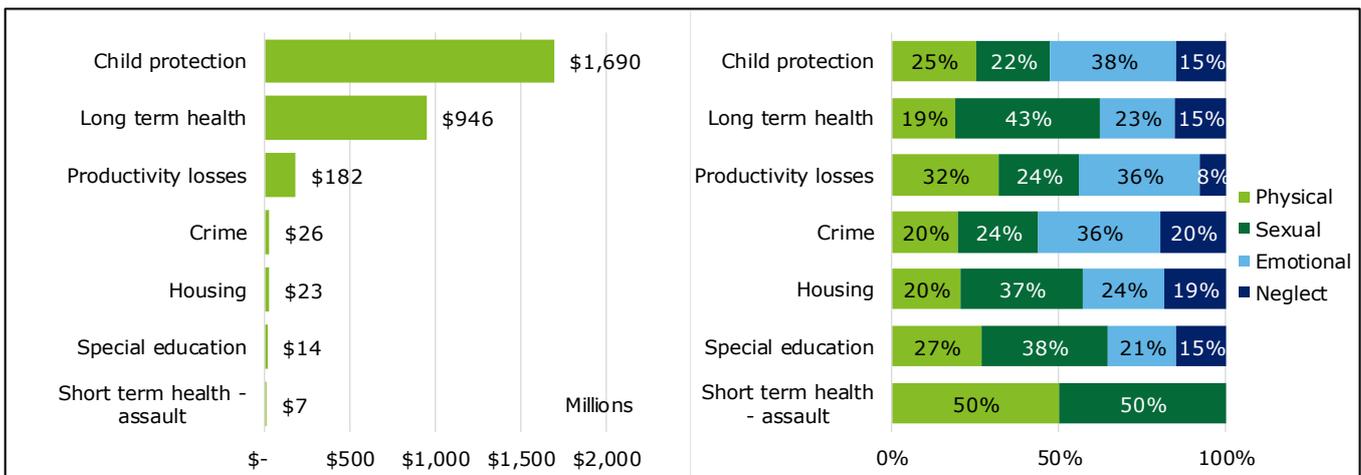
Across NSW and Australia, child protection costs generated the largest deadweight losses, as seen in Chart 5.10 and Chart 5.11.

Chart 5.10 Lifetime deadweight losses for NSW, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as Productivity Commission (2003), McCarthy et al. (2016). Australian Bureau of Statistics (2017d) and Australian Bureau of Statistics (2017e).

Chart 5.11 Lifetime deadweight losses for Australia, by type of expenditure and violence



Source: Deloitte Access Economics estimates based on various data sources such as Productivity Commission (2003), McCarthy et al. (2016). Australian Bureau of Statistics (2017d) and Australian Bureau of Statistics (2017e).

5.8 Quality of life and lifespan

5.8.1 Burden of disease

The burden of disease and injury is measured in disability adjusted life years (DALYs). As shown in Table 5.8 and Table 5.9, burden of disease costs were estimated to be \$19.4 billion in NSW and \$59.1 billion in Australia.

Table 5.8 Lifetime burden of disease costs for NSW, by type of violence

Type of violence	Cost (\$ million)	% of total cost
Physical	\$3,838	20%
Sexual	\$8,088	42%
Emotional	\$4,748	24%
Neglect	\$2,759	14%
Total	\$19,433	100%

Source: Deloitte Access Economics estimates based on various data sources such as Department of the Prime Minister and Cabinet (2014), Institute for Health Metrics and Evaluation (2015), McCarthy et al. (2016) and PAFs from various sources (see section 2.4, Appendix A and Appendix B for further detail on how burden of disease costs are estimated).

Table 5.9 Lifetime burden of disease costs for Australia, by type of violence

Type of violence	Cost (\$ million)	% of total cost
Physical	\$11,807	20%
Sexual	\$24,584	42%
Emotional	\$14,498	25%
Neglect	\$8,196	14%
Total	\$59,085	100%

Source: Deloitte Access Economics estimates based on various data sources such as Department of the Prime Minister and Cabinet (2014), Institute for Health Metrics and Evaluation (2015), and McCarthy et al. (2016) and PAFs from various sources (see section 2.4, Appendix A and Appendix B for further detail on how burden of disease costs are estimated).

5.8.2 Premature mortality

Premature mortality caused directly by violence cost an additional \$61 million in NSW and \$195 million in Australia. All premature mortality costs were attributed to physical violence. As premature mortality is a short-term impact that occurs within the same year as the instance of violence, lifetime and annual costs are both the same.

6 Qualitative impacts

This chapter summarises the additional qualitative impacts associated with violence against children and young people. A dollar value has not been assigned to these impacts, due to inadequate evidence for robust quantification.

6.1 First generation impacts

A number of additional impacts of violence against children and young people were identified as part of the literature review. These impacts are unquantifiable due to data limitations and confounding factors and are discussed qualitatively in this section to provide a holistic view of the negative impacts of violence against children and young people.

6.1.1 Cancer

Research has started to explore the relationship between cancer and childhood violence, and how adult behaviours (i.e. when the person is aged 18 or above) could lead to adverse health outcomes such as cancer. In 2009, results from a regional representative study in Canada found that childhood physical violence was associated with 49% higher odds (95% CI, 1.10-2.01) of cancer (Fuller-Thomson 2009). When adjusting for three clusters of risk factors (co-occurring childhood stressors, adult health behaviours and adult socioeconomic status) the association remained significant with the odds ratio only slightly decreasing to 47% (95% CI, 1.05-1.99). The study noted that health behaviours as an adult were the main pathway through which adverse experiences as a child translated to cancer later in life. Examples include increased smoking during adulthood, obesity, physical inactivity and alcohol use. It follows that violence experienced during early adulthood could also lead to these behaviours and result in poor health outcomes later in life.

However, overall the literature results are mixed and a number of uncertainties remain regarding the pathways from violence to cancer. The costs of obesity, which is a risk factor for some forms of cancer, have been included in this report. While this report did not quantify the costs of cancer attributable to violence, the impact of obesity was quantified. Hence, the impact of cancer has been captured, to a degree, due to the quantification of the impact of obesity.

6.1.2 Factors that influence the extent of the negative impacts

Similarly, there are additional factors that may also influence the degree or nature of the negative health outcomes suffered by children and young people. These include:

- **Age of abuse** – It is often hypothesised that children who are abused and neglected at an earlier age will suffer worsened negative health outcomes (Fisher et al. 2010). It has not been possible to quantify the extent of the worsened outcomes due to unavailable data. However, age has been considered in the lifetime cost estimates as the costs have been projected forward over the lifespan of individuals who experienced violence. The costs will be higher for people who are abused at a younger age as the costs accrue for longer.
- **Exposure to multiple types of violence** – It is universally understood that children or young people who are exposed to multiple types of violence are more likely to experience adverse health outcomes in comparison to being exposed to a single type of violence (Moore et al. 2015). Whilst the general trend is clear that greater exposure leads to increased risks of adverse health outcomes, there is limited literature that provides quantifiable indicators of these relative risks.

6.2 Second generation impacts

Violence against children and young people can lead to a number of negative outcomes for the second generation, for example in adulthood or during the later stages of the person's lifespan. These negative outcomes include:

- intergenerational transfer of violence against children;
- juvenile delinquency (for those who were abused as children);
- adult criminality
- homelessness and
- prostitution

While a number of studies have recorded correlations between violence against children and young people and second generation impacts, the results are varied and few have examined causation, as a number of confounding factors may influence processes leading to second generational impacts. Given these weaknesses in the currently available data, the second generation impacts have not been quantified but are discussed qualitatively below.

6.2.1 Intergenerational transfer of violence

There is a commonly held belief that children and young people who have been maltreated are likely to maltreat their own children in the future, creating a cycle of violence. Some studies support this notion, such as Thornberry et al. (2013) which found the odds of perpetration were about 2.6 times higher for study participants who were maltreated as compared with study participants who were not maltreated as children. However, the evidence remains mixed. Widom et al. (2015) found that the extent of intergenerational transmission of violence and neglect depended largely on the source and information used, with significant variation in methodology, measurement approach and reporting biases across the literature.

In the literature, rates of intergenerational transmission of violence ranged from 6% to as high as 70% (Berzenski et al. 2014). This large variance in estimated rates is due to differences in methodology, measurement approach and reporting biases. Interestingly, the studies that reported higher odds of intergenerational transmission were found to be methodologically weaker.

Although experiencing violence during the formative years of one's life is a risk factor for maltreating one's own children, this consequence is far from inevitable. Thornberry (2013) suggested that although a history of violence may increase the chances of violence and neglect perpetration, other factors such as stable and nurturing relationships may create turning points in this trajectory. A limitation of many studies is the failure to recognise the number of individuals who were maltreated as children or young adults, but did not go on to maltreat their own children.

The current method implicitly captures the intergenerational transfer of violence. To avoid double counting present costs or over estimating future costs, the costs of intergenerational violence have not been separately quantified.

6.2.2 Relationship impairment and re-victimisation

Evidence suggests that child abuse and neglect may lead to difficulties in finding and maintaining healthy relationships later in life (Hossack et al. 2015). Friesen et al. (2010) found that exposure to more severe forms of childhood sexual violence influenced relationship stability, relationship quality and risks of inter-partner violence. Several factors from adolescence worsened these associations, including a history of risky sexual behaviour, substance abuse problems, and low self-esteem.

As noted by the White Ribbon Foundation (2010), children and young people who have experienced violence are likelier to face challenges in their social development such as the inability to function at school or the workplace, and having a lack of trust for family members or other individuals, all of which contribute to relationship impairment.

6.2.3 Juvenile delinquency

A number of studies show that increased rates of juvenile delinquency have been observed in people who have been harmed or neglected in childhood. Arias (2004) found that typically girls are more likely to exhibit

internalising symptoms (such as depression) while boys are more likely to exhibit externalising symptoms such as aggression and other manifestations of conduct disorders. English et al. (2002) found that children who were maltreated had a 4.8 times greater chance of being arrested as a juvenile and a 2.0 times greater chance of being arrested as an adult.

It should be noted that correlation does not necessarily imply causation and other confounding factors may be contributing to both the violence and the propensity to offend. Factors such as a poor socioeconomic environment, antisocial parents and siblings, poor parental supervision or harsh/erratic parenting are linked to juvenile offending (National Crime Prevention 1999).

6.2.4 Adult criminality

Studies have found that abuse and neglect in childhood can lead to increased risk of engaging in criminal activities in adulthood. Currie and Tekin (2006) analysed data from the National Longitudinal Study of Adolescent Health for causal links between childhood abuse and neglect and crime. Different forms of abuse were assessed as part of a survey. The study found that abuse and neglect in childhood approximately doubles the risk of engaging in criminal activities. Siegel and Williams (2003) studied both juvenile offending and adult offending, and found that associations between sexual violence and criminality culminated in adulthood, but not as a juvenile.

First generation justice system costs have been quantified in chapter 4 and chapter 5. Whilst the second-generation criminality impacts discussed qualitatively in this section (both juvenile delinquency and adult criminality) may result in additional justice system costs, they have not been quantified due to the insufficient evidence of causality and the confounding factors which make it difficult to estimate its direct impact.

6.2.5 Homelessness

Research suggests that young people may encounter homelessness or housing instability because of violence experienced during childhood or young adulthood. The costs of government housing support (OOHC, supported accommodation and public housing) have been included in the cost estimates in Chapter 4 and Chapter 5. However, the additional flow on costs of homelessness such as health costs, justice costs and loss of earnings due to homelessness have not been estimated to avoid double counting. As the data reflect government recurrent expenditure, case management/support services are likely to be included in the costs, but not outreach services.

6.2.6 Prostitution

High rates of risky sexual behaviour including prostitution have been associated with the occurrence of violence against children and young people. A number of studies have examined these links to prostitution during adolescence and into adulthood following the occurrence of violence:

- Potter et al. (1999) reported that sex workers in New Zealand were more likely to have been sexually abused as a child, but were also more likely to have left home before the age of 19 years and not completed tertiary studies.
- Stoltz et al. (2007) reported that both sexual and emotional abuse in childhood increased the risk of prostitution later in life.
- Arriola et al. (2005) conducted a meta-analysis of child sexual violence and HIV risk behaviour among women, showing a positive association with prostitution.
- Weber et al. (2004) reported a positive, but not statistically significant, association for the causal relationship between child sexual violence and the initiation into prostitution. Littleton et al. (2007) reported that familial maltreatment experiences were not necessarily associated with risky sexual behaviours in adulthood.
- Seng (1989) reported that the relationship between child sexual violence and prostitution was not direct, but was associated with a pathway of running away from home.

However, the studies to date have failed to control for homelessness or other confounding factors and, as a result, may overstate direct causal links between experience of violence and prostitution.

7 Summary of costs

This chapter summarises the key findings of this report and presents the total annual and lifetime costs, and the distribution of these financial costs by the cost bearer.

7.1 Annual costs

In total, the financial costs in FY16-17 of violence against children and young people was \$3.8 billion in NSW and \$11.2 billion in Australia. Non-financial costs summed to \$7.4 billion and \$23.0 billion for NSW and Australia, respectively.

Table 7.1 Summary of annual financial and non-financial costs of violence against children and young people, FY16-17

	<i>Units</i>	NSW	Australia
Financial costs			
Health system	<i>\$ million</i>	\$576	\$1,842
Education	<i>\$ million</i>	\$3	\$8
Productivity Losses (reduced employment)	<i>\$ million</i>	\$578	\$1,621
Child protection, OOHC, Intensive Family Preservation and Child Safety Commissioner	<i>\$ million</i>	\$1,856	\$5,253
Housing and homelessness	<i>\$ million</i>	\$41	\$163
Justice system	<i>\$ million</i>	\$37	\$124
Deadweight losses	<i>\$ million</i>	\$741	\$2,160
Total financial costs	<i>\$ million</i>	\$3,832	\$11,171
Non-financial costs			
DALYs	<i>\$ million</i>	\$7,296	\$22,829
Premature death	<i>\$ million</i>	\$61	\$195
Total non-financial costs	<i>\$ million</i>	\$7,357	\$23,024

Source: Deloitte Access Economics estimates based on various data sources.

The average annual financial cost per person is \$24,832 in NSW and \$22,836 in Australia. Non-financial cost is \$47,679 on average per person in NSW, and \$47,065 per person in Australia.

7.2 Lifetime costs

In total, the lifetime financial costs for new cases of violence against children and young people in FY16-17 was \$5.1 billion in NSW and \$16.1 billion in Australia. Non-financial costs were \$20.6 billion in NSW and \$62.3 billion in Australia.

Table 7.2 Summary of lifetime financial and non-financial costs of violence against children and young people, FY16-17

	<i>Units</i>	NSW	Australia
Financial costs			
Health system	<i>\$ million</i>	\$1,584	\$4,897
Education	<i>\$ million</i>	\$4	\$14
Productivity Losses (reduced employment)	<i>\$ million</i>	\$583	\$1,706
Child protection, OOHC, Intensive Family Preservation and Child Safety Commissioner	<i>\$ million</i>	\$1,952	\$6,481
Housing and homelessness	<i>\$ million</i>	\$23	\$97
Justice system	<i>\$ million</i>	\$11	\$45
Deadweight losses	<i>\$ million</i>	\$897	\$2,889
Total financial costs	<i>\$ million</i>	\$5,054	\$16,130
Non-financial costs			
DALYs	<i>\$ million</i>	\$20,510	\$62,062
Premature death	<i>\$ million</i>	\$61	\$195
Total non-financial costs	<i>\$ million</i>	\$20,571	\$62,257

Source: Deloitte Access Economics estimates based on various data sources.

The average lifetime financial cost per person is \$180,125 in NSW and \$187,170 in Australia. Average non-financial cost, per person, is \$733,204 in NSW and \$722,432 per person in Australia.

7.3 The additional cost of co-occurrence

Data from the Personal Safety Survey (ABS 2017) concludes that since the age of 15, approximately 70% of people who had experienced violence had experienced some combination of physical, sexual and/or emotional violence. This finding is consistent with a large body of literature that links increased frequency or severity of violence experienced as a child or young person with a greater risk of developing adverse health outcomes than those experiencing less frequent or severe violence (Norman et al. 2012). Dose-response relationships with repeated and frequent abuse have been quantified for the following health outcomes: anxiety and depressive disorders, alcohol and drug abuse, suicide, risky sexual behaviours and the prevalence of STIs, type 2 diabetes and obesity.

To account for co-occurrence, the estimated costs of violence were multiplied by a factor that reflected the number of cases per child or young person. In NSW, the average number of substantiations per child in FY16-17 was 1.85 and in Australia the average number of substantiations per child was 1.38¹. Data from the Personal Safety Survey (ABS 2017) provides further evidence that those aged 18-24 also tend to experience multiple occasions of violence. For example, 54% of males and 68% of females report experiencing more than one incident of violence by a previous partner. However, the survey does not capture rates of co-occurring violence to the detail as has been documented in the child abuse literature.

¹ Data from the Personal Safety Survey (2016) provides similar conclusions. On average, approximately 10% of people aged 18-24 who reported violence in the preceding 12 months had experienced both sexual and physical violence. There is reason to think this rate is conservative given emotional violence is not included nor average episodes of violence are not included in the data. As such, the higher ratio from substantiations data are used when factoring up costs due to co-occurrence.

Table 7.3 illustrates the costs, both adjusted and unadjusted, for co-occurrence.

Table 7.3 Annual and lifetime costs for NSW and Australia, adjusted and unadjusted, for co-occurrence

	NSW		Australia	
	Unadjusted for co-occurrence	Adjusted for co-occurrence	Unadjusted for co-occurrence	Adjusted for co-occurrence
Annual costs (\$ millions, FY16-17)				
Financial	\$3,832	\$7,090	\$11,171	\$15,397
Non-financial	\$7,357	\$13,612	\$23,024	\$31,733
Lifetime costs (\$ millions)				
Financial	\$5,054	\$9,351	\$16,130	\$22,231
Non-financial	\$20,571	\$38,062	\$62,257	\$85,805

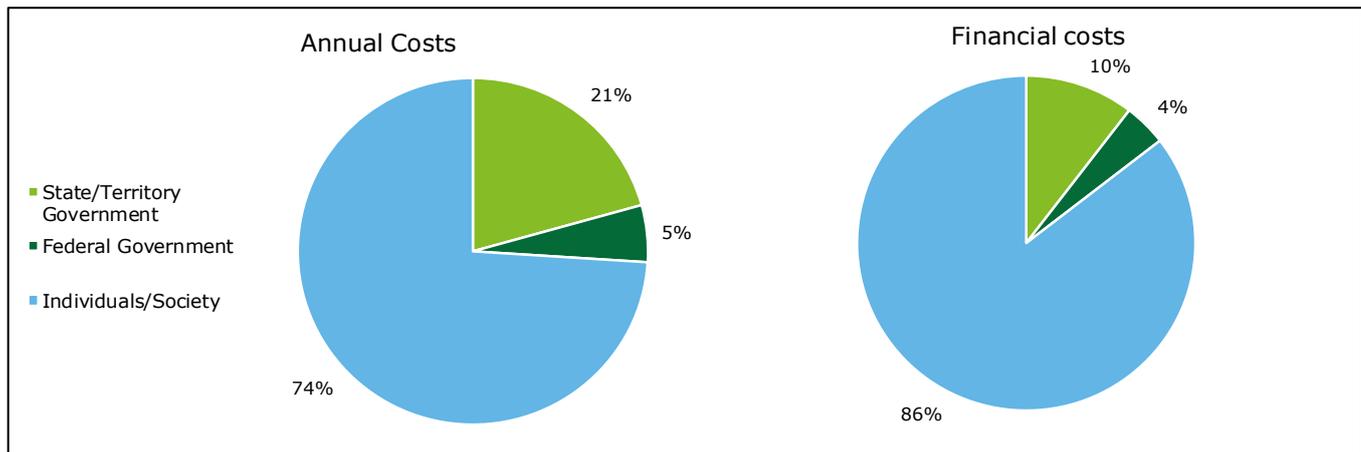
Source: Deloitte Access Economics estimates based on various data sources.

As seen in Table 7.3, in NSW for FY16-17 the adjusted annual financial costs of violence against children and young people are \$7.1 billion and adjusted lifetime financial costs are \$9.4 billion. This compares with the unadjusted financial costs of \$3.8 billion and unadjusted lifetime costs of \$5.1 billion. In Australia, adjusted annual financial costs are \$15.4 billion and lifetime financial costs are \$22.2 billion. The unadjusted figures for Australia are \$11.2 billion and \$16.1 billion for annual financial and lifetime financial costs, respectively.

7.4 Distribution of costs by bearer

The financial costs of violence against children and young people in NSW were categorised by three main cost bearers: the State/Territory Government, Federal Government and individuals/society². Chart 7.1 provides an illustration of the cost breakdown by key cost bearers.

Chart 7.1 Proportion of annual (FY16-17) and lifetime costs for NSW, borne by government or individuals and society



Source: Deloitte Access Economics estimates based on various data sources and assumptions on the average personal income tax rate, average indirect tax rate, proportion of tax revenue to commonwealth government and state/ local government, based on data from Australian Bureau of Statistics 2017d, Australian Bureau of Statistics 2017e and Productivity Commission 2003.

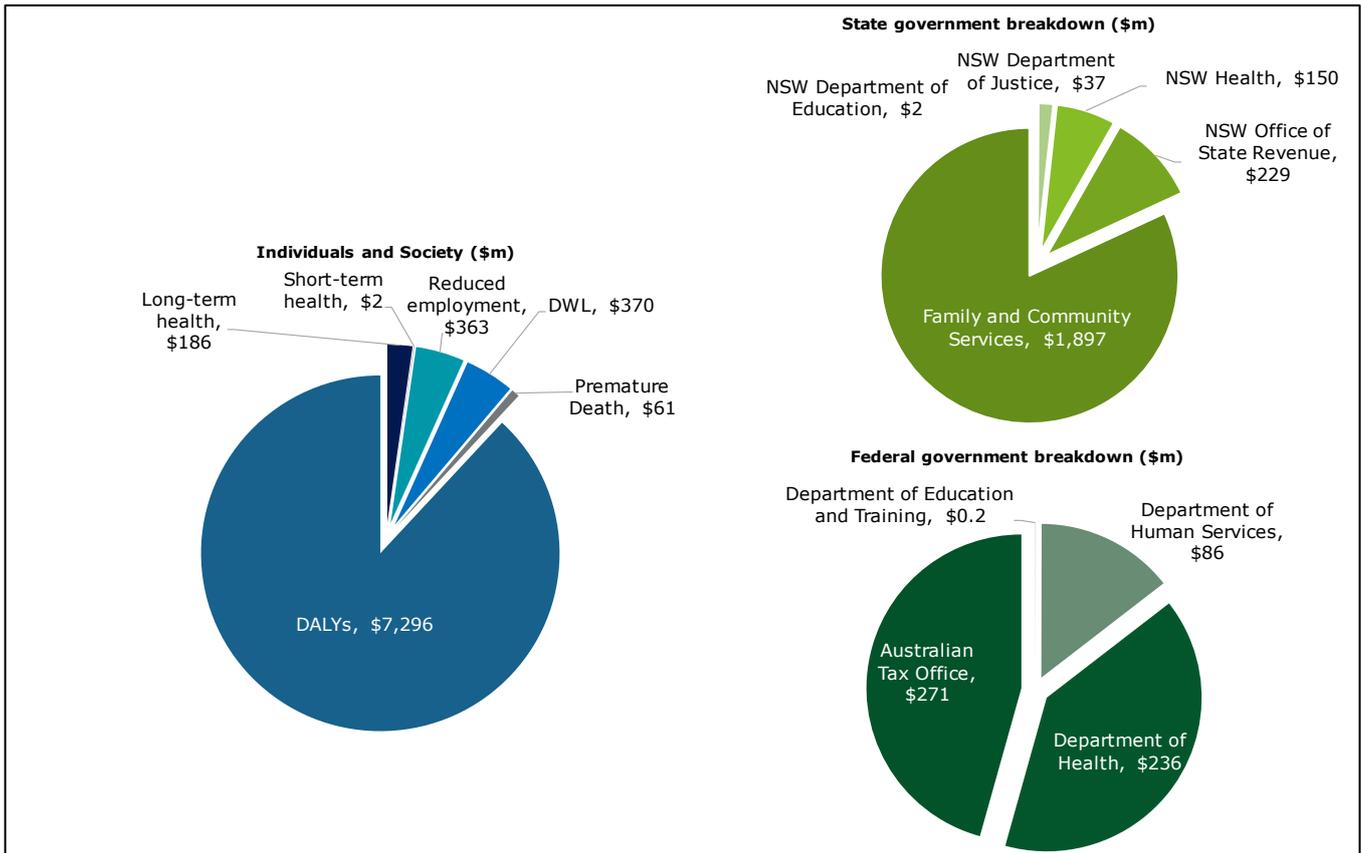
² The category "individual/society" largely refers to individuals. In the context of health, this category includes the individuals themselves, as well as health insurers. Reduced employment includes costs that are borne by individuals and workplaces (i.e. society), which face reduced workforce productivity within the cohort of young people who experienced violence. Deadweight losses include losses borne by society due to increased taxation and administration costs associated with welfare systems and compliance activities. For premature mortality, the entire cost is borne by the individual in the form of forgone utility from life years lost.

Economic cost of violence against children and young people

As seen in Chart 7.1, in NSW around 74% of estimated annual costs are borne by the individual/society, while the remainder are borne by the State/Territory (21%) and Federal governments (5%). About 86% of lifetime costs are borne by the individual or society, 10% borne by State/Territory Government and 4% by Federal Government.

Chart 7.2 shows the breakdown of State/Territory and Federal Government costs by Department, for annual costs in NSW.

Chart 7.2 Proportion of annual costs (FY16-17) for NSW, detailed split by State or Federal government



Source: Deloitte Access Economics estimates based on various data sources and assumptions on the average personal income tax rate, average indirect tax rate, % of tax revenue to commonwealth government and state/ local government, based on data from Australian Bureau of Statistics 2017d, Australian Bureau of Statistics 2017e and Productivity Commission 2003.

Note: Numbers in the pie charts segmented by State/ Territory and Federal Government Department do not sum to State/ Territory Government and Federal Government spending (i.e. the main pie chart showing annual financial costs) due to rounding.

As seen in Chart 7.2, DALYs represent the majority of costs borne by Individuals and the broader NSW community. Approximately \$1.9 billion of State Government costs in NSW (FY16-17) are borne by the Department of Family and Community Services. Approximately \$271 million of Federal government costs are borne by the Australian Tax Office and \$236 million borne by the Department of Health. Note that allocations of cost by Department are based on assumptions such as the proportion of health, education, justice system, child protection and public housing expenditure borne by the government, and the proportion of health, productivity and deadweight losses borne by the individual and government.

References

- Australian Bureau of Statistics (ABS) 2004, Deaths from external causes 1998-2002, cat.no.3320.0.
- ABS 2005, Personal Safety Survey, cat.no.4906.0.
- ABS 2013, Employee Earnings, benefits and trade union membership, cat.no.6310.0.
- ABS 2016a, Recorded Crime – Victims, cat.no.4510.0.
- ABS 2016b, Employee Earnings and Hours, cat.no.6306.0.
- ABS 2016c, Life Tables, Territories and Australia 2013-2015, cat.no.3302.0.
- ABS 2017a, Australian demographic statistics, cat.no.3101.0.
- ABS 2017b, Personal Safety Survey, cat.no.4906.0.
- ABS 2017c, Recorded Crime – Offenders, cat.no.4519.0.
- ABS 2017d, Australian National Accounts: National Income, Expenditure and Product: Table 22. Taxes, Current prices, March, cat. no. 5206.0.
- ABS 2017d , Australian National Accounts: National Income, Expenditure and Product: Table 11. National Income Account, Current prices, March, cat. no. 5206.0.
- ABS 2018, Consumer Price Index, cat.no.6401.0.
- Access Economics 2007, The high price of pain: the economic impact of persistent pain in Australia. Sydney: MBF Foundation.
- Afifi, T.O., MacMillan, H.L., Boyle, M., Cheung, K., Taillieu, T., Turner, S., and Sareen, J. 2016, Child abuse and physical health in adulthood. Health Reports, 27(3), pp. 10-18.
- AIFS 2017, CFCA Resource Sheet – Child abuse and neglect statistics, AIFS, Melbourne.
- AIFS 2017, Report – Personal safety survey results: Australia 2016, AIFS, Melbourne.
- Australian Institute of Health and Welfare (AIHW) 1997, Australia’s Welfare. Canberra: AIHW.
- AIHW 2008, Who receives priority housing and how long do they stay?, Bulletin series no. 63., cat.no.AUS105. Canberra: AIHW.
- AIHW 2010a, Health system expenditure on disease and injury in Australia by disease group, 2004–05, Health and welfare expenditure series no. 36, cat.no.HSE87. Canberra: AIHW.
- AIHW 2010b, A profile of social housing in Australia, cat.no.HOU232. Canberra: AIHW.
- AIHW 2011, Government funded specialist homelessness services: SAAP National Data Collection annual report 2009-10: Victoria, cat.no.HOU24. Canberra: AIHW.
- AIHW 2015, Trends in hospitalised injury, Australia: 1999-00 to 2012-13, Injury research and statistics series no.95, cat.no.INJCAT171. Canberra: AIHW.

Economic cost of violence against children and young people

- AIHW 2016, Health expenditure Australia 2014–15, Health and welfare expenditure series no. 57, cat.no.HWE67. Canberra: AIHW.
- AIHW 2017, Health expenditure Australia 2015–16, Health and welfare expenditure series no. 58, cat.no.HWE68. Canberra: AIHW.
- AIHW 2018a, Child protection Australia 2016-17, cat.no.CWS63. Canberra: AIHW.
- AIHW 2018b, Family, domestic and sexual violence in Australia, cat.no.FDV2. Canberra: AIHW.
- Arias, I., 2004, The Legacy of Child Abuse and neglect: Long-Term Health Consequences for Women. *Journal of Women's Health*, 2004: 13(5).
- Arriola K.R.J., Loudon T., Doldren M.A., Fortenberry R.M. 2005, A meta-analysis of the relationship of child sexual abuse to HIV risk behaviour among women, *Child Abuse & Neglect*, 29(6):725-46.
- Australian Childhood Foundation 2017, The issue, Australian Childhood Foundation, accessed from <http://www.childhood.org.au/learn/the-issue>.
- Australian Government Productivity Commission 2018, Report on Government Services (ROGS).
- Begg, S., Vos, T., Barker, B., Stevenson, C., Stanley, L. and Lopez, A.D. 2007, The burden of disease and injury in Australia 2003. Canberra: AIHW.
- Bradford, K., Shih, W., Videlock, E.J., Presson, A.P., Naliboff, B.D., Mayer, E.A., Chang, L. 2012, Association between early adverse life events and irritable bowel syndrome. *Clinical Gastroenterology Hepatology*, 10(4), pp. 385-390.
- Bright, C.L. and Jonson-Reid, M. 2008, Onset of juvenile court involvement: Exploring gender-specific associations with abuse and neglect and poverty. *Children and Youth Services Review*, 30(8), pp.914-927.
- Currie, J. and Widom, C.S. 2010, Long-term consequences of child abuse and neglect on adult economic well-being. *Child Abuse and neglect*, 15(2), pp. 111-120.
- Currie, J. and Tekin E. 2006, Does Child Abuse Cause Crime?. Andrew Young School of Policy Studies Working Paper 06-31, April 2006.
- Cutajar, M.C., Mullen, P.E., Ogloff, J.R., Thomas, S.D., Wells, D.L., and Spataro, J. 2010, Psychopathology in a large cohort of sexually abuse children followed up to 43 years. *Child Abuse and Neglect*, 34(11), pp. 813-822.
- Department of the Prime Minister and Cabinet (DPMC) 2014, Best Practice Regulation Guidance Note: Value of statistical life, Office of Best Practice Regulation.
- Danese, A., Tan, M. 2014, Childhood abuse and neglect and obesity: systematic review and meta-analysis. *Molecular Psychiatry*, 19(5), pp. 544-554.
- Finkelhor, D., Turner, H. A., Shattuck, A., & Hamby, S. L. 2013, Violence, crime and abuse exposure in a national sample of children and youth: An update. *JAMA Pediatrics*, 167(7), 614–621.
- English D.J., Widom C.S., Brandford C., 2002, Childhood victimization and delinquency, adult criminality, and violent criminal behaviour: A replication and extension, Final Report, US Department of Justice.
- Fisher, H.L., Jones, P.B., Fearon, P., Craig, T.K., Dazzan, P., Morgan, K., Hutchinson, G., Doody, G.A., McGuffin, P., Leff, J. and Murray, R.M. 2010, The varying impact of type, timing and frequency of

- exposure to childhood adversity on its association with adult psychotic disorder. *Psychological Medicine*, 40(12), pp.1967-1978.
- Forbes, M., Barker, A. and Turner, S.A. 2010, *The effects of education and health on wages and productivity*, Melbourne.
- Friesen, M.D., Woodward, L.J., Horwood, L.J. and Fergusson, D.M. 2010, Childhood exposure to sexual abuse and partnership outcomes at age 30. *Psychological medicine*, 40(04), pp.679-688.
- Grimes, D.A. and Schulz, K.F. 2008, Making sense of odds and odds ratios. *Obstetrics & Gynecology*, 111(2, Part 1), pp.423-426.
- Hemmingsson, E. Johansson, and K., Reynisdottir, S. 2014, Effects of childhood abuse on adult obesity: a systematic review and meta-analysis. *Obesity Review*, 15(11), pp. 882-893.
- Herrenkohl, T.I., Hong, S., Klika, J.B., Herrenkohl, R.C., and Russo, M.J. 2013, Developmental impacts of child abuse and neglect related to adult mental health, substance use, and physical health. *Journal of Family Violence*, 28(2), pp. 1-16.
- Holt, S., Buckley, H. and Whelan, S. 2008. The impact of exposure to domestic violence on children and young people: A review of the literature. *Child abuse & neglect*, 32(8), pp.797-810.
- Hossack, N., Pam, D., Stavropoulos, P. and Burley, P. 2015, The cost of unresolved childhood trauma and abuse in adults in Australia. *Adults Surviving Child Abuse (ACSA)*, pp.4-58.
- Institute for Health Metrics and Evaluation (IHME) 2015, *Global burden of disease study 2015: Results 1990-2015*, <http://ghdx.healthdata.org/gbd-results-tool>.
- Irish, L., Kobayashi, I., and Delahanty, D.L. 2010, Long-term physical health consequences of childhood sexual abuse: a meta-analytic review. *Journal of Pediatric Psychology*, 35(5), pp. 450-461.
- Jonson-Reid, M., Drake, B., Kim, J., Porterfield, S., Han, L. 2004, A prospective analysis of the relationship between reported child abuse and neglect and special education eligibility among poor children. *Child Abuse and neglect*, 9(4), pp. 382-394.
- Larg, A. and Moss, J.R. 2011, Cost of illness studies: A guide to critical evaluation. *Pharmacoeconomics*, 29(8), 653-671.
- Littleton H., Breitkopf C.R., and Berenson A. 2007, Sexual and physical abuse history and adult sexual risk behaviours: Relationships among women and potential mediators. *Child Abuse & Neglect*, 31(7):757-68.
- Maschi, T., Hatcher, S.S., Schwalbe, C.S. and Rosato, N.S. 2008, Mapping the social service pathways of youth to and through the juvenile justice system: A comprehensive review. *Children and Youth Services Review*, 30(12), pp.1376-1385.
- Maniglio, R. 2009, The impact of child sexual abuse on health: A systematic review of reviews. *Clinical psychology review*, 29(7), pp.647-657.
- McCarthy, M.M., Taylor, P., Norman, R.E., Pezzullo, L., Tucci, J. and Goddard, C. 2016, The lifetime economic and social costs of child abuse and neglect in Australia. *Children and Youth Services Review*, 71, pp.217-226.
- Mersky, J.P. and Reynolds, A.J. 2007, Child abuse and neglect and violent delinquency: disentangling main effects and subgroup effects. *Child Abuse and neglect*, 12(3), pp. 246-258.

Economic cost of violence against children and young people

- Moore, S.E., Scott, J.G., Ferrari A.J., Mills, R., Dunne, M.P., Erskine, H.E., Devries, K.M., Degenhardt, L., Vos, T., Whiteford, H.A., McCarthy, M. and Norman, R.E. 2015, Burden attributable to child abuse and neglect in Australia. *Child Abuse and Neglect*, 28, pp. 208-220.
- National Crime Prevention 1999, *Pathways to Prevention: Full Report*, Commonwealth Attorney General's Department, Canberra.
- Norman, R.E., Byambaa, M., De, R., Butchart, A., Scott, J., and Vos, T. 2012, The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-analysis. *PLoS Med*, 9(11), pp. 1-31.
- NSW Government 2016. *Their Futures Matter: A new approach (The Tune Review)*, Sydney.
- NSW Government Bureau of Crime Statistics and Research 2018, *Crime statistics: Definitions and explanations*, http://www.bocsar.nsw.gov.au/Pages/bocsar_crime_stats/bocsar_glossary.aspx
- NSW Treasury 2017. *NSW Government Guide to Cost-Benefit Analysis*, Sydney.
- Potter K., Martin J., Romans S. 1999, Early developmental experiences of female sex workers: a comparative study. *Australian & New Zealand Journal of Psychiatry*, 33(6):935-40.
- Parks, S.E., Kim, K.H., Day, N.L., Garza, M.A. and Larkby, C.A. 2011, Lifetime self-reported victimization about low-income, urban women: The relationship between childhood abuse and neglect and adult violent victimization. *Journal of Interpersonal Violence*, 26(6), pp. 1111-1128.
- Productivity Commission 2003, *Evaluation of the pharmaceutical industry investment program research report*. Canberra: Productivity Commission.
- Productivity Commission 2010, *The Effects of Education and Health on Wages and Productivity*. Productivity Commission Staff Working Paper, Melbourne, March.
- Raman, S., Inder, B. and Forbes, C.S. 2005, *Investing for success: The economics of supporting young people leaving care*. Centre for Excellence in Child and Family Welfare, Melbourne.
- Rothman, K. J. 2012, *Epidemiology: An introduction (2nd ed.)*. New York: Oxford University Press, Inc.
- Sansone, R.A. and Sansone, L.A. 2015, Irritable bowel syndrome: relationships with abuse in childhood. *Innovations in clinical neuroscience*, 12(5-6), p.34.
- Santerre-Baillargeon, M., Vézina-Gagnon, P., Daigneault, I., Landry, T. and Bergeron, S. 2016, Anxiety mediates the relation between childhood sexual abuse and genito-pelvic pain in adolescent girls. *Journal of sex & marital therapy*, pp.1-12.
- Steering Committee for the Review of Government Service Provision (SCRGSP) 2017, *Report on Government Services 2017*, vol. F, Community services. Productivity Commission, Canberra.
- Seng M.J. 1989, Child sexual abuse and adolescent prostitution: a comparative analysis. *Adolescence* 24(9): 665-75.
- Siegel, J.A. and Williams, L.M. 2003, The relationship between child sexual abuse and female delinquency and crime: A prospective study. *Journal of research in Crime and Delinquency*, 40(1), pp.71-94.
- Smith, R.G., Jorna, P., Sweeney, J. and Fuller, G. 2011, *Counting the costs of crime in Australia*. Australian Institute of Criminology, 129, pp. 1836-2079.
- Smithgall, C., Gladden, R.M., Howard, E., Goerge, R. and Courtney, M. 2004, *Educational experiences of children in out-of-home care*. Chapin Hall Center for Children at the University of Chicago.

- Spiegel, D.R., Shaukat, A.M., McCroskey, A.L., Chatterjee, A., Ahmadi, T., Simmelink, D., Oldfield, E.C., Pryor, C.R., Faschan, M. and Raulli, O. 2016, Conceptualizing a subtype of patients with chronic pain: the necessity of obtaining a history of sexual abuse. *The International Journal of Psychiatry in Medicine*, 51(1), pp.84-103.
- Stoltz J.A.M., Shannon K., Kerr T., Zhang R., Montaner J.S., Wood E. 2007, Associations between childhood abuse and neglect and sex work in a cohort of drug-using youth. *Social Science & Medicine*, 65(6):1214-21.
- Taylor, P., Moore, P., Pezzullo, L., Tucci, J., Goddard, C. and De Bortoli, L. 2008, *The Cost of Child Abuse in Australia*. Australian Childhood Foundation and Child Abuse Prevention Research Australia: Melbourne.
- The White Ribbon Foundation 2010, *An Assault on Our Future: The impact of violence on young people and their relationships*. North Sydney, New South Wales.
- The World Health Organization (2016), Early child development, accessed at <http://www.who.int/topics/early-child-development/en/>
- The World Health Organization (2018), Early child development - Child health and development, accessed at <http://www.who.int/topics/early-child-development/child-health-development/en/>
- Thomson, E.F. and Brennenstuhl, S. 2009, Making a link between childhood physical abuse and cancer. *Cancer*, 115(14), pp.3341-3350.
- Thornberry, T.P., Henry, K.L., Smith, C.A., Ireland, T.O., Greenman, S.J. and Lee, R.D. 2013, Breaking the cycle of abuse and neglect: The role of safe, stable, and nurturing relationships. *Journal of Adolescent Health*, 53(4), pp.S25-S31.
- Weber A.E., Boivin J.F., Blais L., Haley N., Roy E. 2004, Predictors of Initiation into Prostitution among Female Street Youths. *Journal of Urban Health* 81(4).
- Widom, C.S., Czaja, S.J. and DuMont, K.A. 2015, Intergenerational transmission of child abuse and neglect: Real or detection bias?. *Science*, 347(6229), pp.1480-1485.

Appendix A Population attributable fractions

Table A.1 Male PAFs

	Impact	Physical	Sexual	Emotional	Neglect	Source	Comment
Mental health	Anxiety	1.23%	1.99%	2.67%	0.51%	Moore et al. (2015)	Relative risks were converted to PAFs
	Depression	1.37%	1.33%	2.22%	0.69%	Moore et al. (2015)	Relative risks were converted to PAFs
	Drug abuse	1.84%	2.73%	1.13%	0.49%	Norman et al. (2012), Cutajar et al. (2010)	Odds ratios were converted to PAFs
	Alcohol abuse	0.47%	1.67%	0.51%	0.09%	Norman et al. (2012), Cutajar et al. (2010)	Odds ratios were converted to PAFs
	Self-harm	1.77%	1.70%	2.69%	0.72%	Moore et al. (2015)	Relative risks were converted to PAFs
Physical health	Assault	0.003%*	0.003%*			AIHW (2015)	PAFs inputted directly from AIHW (2015)
	Gastrointestinal	1.82%	2.09%	2.22%	1.06%	Bradford et al. (2012), Irish et al. (2010), Afifi et al. (2016)	Odds ratios were converted to PAFs
	Obesity	0.23%	0.23%	0.22%	0.07%	Hemmingson et al. (2014), Norman et al. (2012), Danese and Tan (2014)	Odds ratios were converted to PAFs
	Chronic pain	0.67%	0.68%	0.80%	0.42%	Afifi et al. (2016), Herrenkohl et al. (2013), Norman et al. (2012)	Odds ratios were converted to PAFs
	Risky sexual behaviour	0.02%	0.02%	0.02%	0.01%	Norman et al. (2012)	Odds ratios were converted to PAFs
Education	Special education	1.82%	1.56%	1.85%	0.88%	Jonson-Reid et al. (2004)	Hazard ratios were converted to PAFs
Crime	Investigation	-	-	-	-	McCarthy et al. (2016)	The estimated proportion of criminal cases estimated to be related to child abuse was 7%

Economic cost of violence against children and young people

Incarceration	-	-	-	-	McCarthy et al. (2016)	The estimated proportion of criminal cases estimated to be related to child abuse was 7%
Prosecution	-	-	-	-	McCarthy et al. (2016)	The estimated proportion of criminal cases estimated to be related to child abuse was 7%
Care and protection orders	-	-	-	-	McCarthy et al. (2016)	The estimated proportion of civil matters in the Victorian Children's Court related to care and protection orders was 85%
AccommodationSupported accommodation	1.10%	1.10%	1.10%	1.10%	AIHW (2017), AIHW (2011)	PAFs for support periods provided to children leaving abusive situations were calculated from AIHW (2011, 2017) data
Public housing	0.06%	0.05%	0.10%	0.04%	AIHW (2014)	Represents the proportion of incidence cases of abuse and neglect in 2012-13 estimated to age out OOH

Table A.2Female PAFs

	Impact	Physical	Sexual	Emotional	Neglect	Source	Comment
Mental health	Anxiety	1.66%	5.53%	2.22%	0.69%	Moore et al. (2015)	Relative risks were converted to PAFs
	Depression	1.84%	3.70%	2.48%	1.15%	Moore et al. (2015)	Relative risks were converted to PAFs
	Drug abuse	2.48%	7.61%	1.27%	0.82%	Norman et al. (2012), Cutajar et al. (2010)	Odds ratios were converted to PAFs
	Alcohol abuse	0.64%	4.64%	0.57%	0.15%	Norman et al. (2012), Cutajar et al. (2010)	Odds ratios were converted to PAFs
	Self-harm	2.38%	4.73%	3.01%	1.30%	Moore et al. (2015)	Relative risks were converted to PAFs
Physical health	Assault	0.006%*	0.006%*			AIHW (2015)	PAFs inputted directly from AIHW (2015)
	Gastrointestinal	2.46%	5.83%	2.49%	1.77%	Bradford et al. (2012), Irish et al. (2010), Afifi et al. (2016)	Odds ratios were converted to PAFs
	Obesity	0.31%	0.64%	0.25%	0.12%	Hemmingson et al. (2014), Norman et al. (2012), Danese and Tan (2014)	Odds ratios were converted to PAFs
	Chronic pain	0.90%	1.89%	0.90%	0.70%	Afifi et al. (2016), Herrenkohl et al.	Odds ratios were converted to PAFs

Economic cost of violence against children and young people

		(2013), Norman et al. (2012)				
	Risky sexual behaviour	0.02%	0.04%	0.02%	0.01%	Norman et al. (2012) Odds ratios were converted to PAFs
Education	Special education	2.46%	2.07%	1.47%	1.47%	Jonson-Reid et al. (2004) Hazard ratios were converted to PAFs
Crime	Investigation	-	-	-	-	McCarthy et al. (2016) The estimated proportion of criminal cases estimated to be related to child abuse was 7%
	Incarceration	-	-	-	-	McCarthy et al. (2016) The estimated proportion of criminal cases estimated to be related to child abuse was 7%
	Prosecution	-	-	-	-	McCarthy et al. (2016) The estimated proportion of criminal cases estimated to be related to child abuse was 7%
	Care and protection orders	-	-	-	-	McCarthy et al. (2016) The estimated proportion of civil matters in the Victorian Children's Court related to care and protection orders was 85%
Accommodation	Supported accommodation	1.10%	1.10%	1.10%	1.10%	AIHW (2017), AIHW (2011) PAFs for support periods provided to children leaving abusive situations were calculated from AIHW (2011, 2017) data
	Public housing	0.08%	0.15%	0.11%	0.07%	AIHW (2014) Represents the proportion of incidence cases of abuse and neglect in 2012-13 estimated to age out OOHC

Note: *Assault refers to short-term physical harm caused to the child. The PAFs have therefore been distributed equally between Physical abuse and Sexual abuse, as these types of abuse can directly lead to physical harm.

Appendix B Cost assumptions and data sources

Health system expenditure was calculated by initially determining the proportion of health expenditure spent on each of the mental and physical health conditions in 2004-05 (AIHW 2010a). This proportion was subsequently applied to the most recent health expenditure data for Australia and NSW 2015-16 (AIHW 2017). The AIHW (2010a) notes that only 70% of health expenditure can be allocated to disease or injury with the other 30% allocated to capital expenditure. Hence, the 2015-16 values were factored up by 30% to account for any unallocated health care expenditure, and inflated to FY16-17 dollars.

The total health system costs that were used as an input to calculate the cost of violence against children and young people are provided in Table B.1.

Table B.1 Total health system cost inputs (FY16-17 \$ million)

Costs	NSW	Australia	Source	Comment
Anxiety	432.0	1,380.9	AIHW (2010a) <i>Health system expenditure on disease and injury in Australia, 2004-05</i> & AIHW (2017), <i>Health expenditure Australia 2015-16</i> (Table B1), Global Burden of Disease (2015)	Expenditure was calculated by applying the proportion of health expenditure on anxiety and depressive conditions in 2004-05 to the most recent health expenditure data in 2015-16 (AIHW 2017), and inflating to FY16-17. To allocate costs between anxiety and depression, the proportion of anxiety-related DALYs (44.3%) from GBD (2015) was used.
Depression	543.6	1,737.8	AIHW (2010a) <i>Health system expenditure on disease and injury in Australia, 2004-05</i> & AIHW (2017), <i>Health expenditure Australia 2015-16</i> (Table B1), Global Burden of Disease (2015)	Expenditure was calculated by applying the proportion of health expenditure on anxiety and depressive conditions in 2004-05 to the most recent health expenditure data in 2015-16 (AIHW 2017), and inflating to FY16-17. To allocate costs between anxiety and depression,, the proportion of depression-related DALYs (55.7%) from GBD (2015) was used.
Drug abuse	108.4	347.1	Collins and Lapsley (2008), <i>The costs of tobacco, alcohol and illicit drug abuse to Australian society 2004/05</i>	Annual healthcare expenditure on illicit drug use of \$202 million from Collins and Lapsley (2008) was inflated to FY16-17 dollars (from 2004/05 dollars).
Alcohol abuse	1,062.3	3,401.4	Collins and Lapsley (2008), <i>The costs of tobacco, alcohol and illicit drug abuse to Australian society 2004/05</i>	Annual healthcare expenditure on alcohol use of \$1,977 million from Collins and Lapsley (2008) was inflated to FY16-17 dollars (from 2004/05 dollars).
Self-harm	136.9	437.8	AIHW (2010a) <i>Health system expenditure on disease and injury in Australia, 2004-05</i> & AIHW (2017), <i>Health expenditure Australia 2015-16</i> (Table A3), AIHW (2018), <i>Trends in hospitalised injury</i>	Health expenditure on injury treatment (\$7.5 billion in 2015-16) was multiplied by the estimated proportion of injury expenditure due to self-harm and suicide, based on the injury separations due to self-harm in 2016 (AIHW 2017), and inflated to FY16-17.

Economic cost of violence against children and young people

Assault	2,361.0	7,547.5	AIHW (2010a) <i>Health system expenditure on disease and injury in Australia, 2004–05</i> & AIHW (2017), <i>Health expenditure Australia 2015–16</i> (Table B1), AIHW (2018), <i>Trends in hospitalised injury</i>	The proportion of all injury related hospital separations for the age group 0-14 years (13.2%) was multiplied by the total health expenditure on injury in Australia in FY15-16 (AIHW 2017). The proportion of all injury related hospital separations was not reported for the age group 0-18 years, so the proportion for the 0-14 years age group was used as a proxy.
Gastro-intestinal	2,154.3	6,887.0	AIHW (2010a) <i>Health system expenditure on disease and injury in Australia, 2004–05</i> & AIHW (2017), <i>Health expenditure Australia 2015–16</i> (Table A3)	Expenditure was calculated by applying the proportion of health expenditure on gastrointestinal conditions in 2004-05 to the most recent health expenditure data in 2015-16 (AIHW 2017), and inflated to FY16-17.
Obesity	7,431.7	23,757.5	AIHW (2010a) <i>Health system expenditure on disease and injury in Australia, 2004–05</i> & AIHW (2017), <i>Health expenditure Australia 2015–16</i> (Table A3, B1)	Expenditure was calculated by applying the proportion of health expenditure on cancer, diabetes and cardiovascular conditions in 2004-05 to the most recent health expenditure data in 2015-16 (AIHW 2017), and inflated to FY16-17.
Chronic pain	3,427.1	10,973.7	Access Economics (2007) <i>The high price of pain</i> , p.31-33	Cost inputs for chronic pain were obtained from Access Economics (2007) and inflated to FY16-17.
Risky sexual behaviour	1,626.0	5,197.9	AIHW (2010a) <i>Health system expenditure on disease and injury in Australia, 2004–05</i> & AIHW (2017), <i>Health expenditure Australia 2015–16</i> (Table A3)	Expenditure was calculated by applying the proportion of health expenditure on genitourinary conditions in 2004-05 to the most recent health expenditure data in 2015-16 (AIHW 2017), and inflated to FY16-17.

Annual costs

The total health system costs were multiplied by the relevant PAFs to obtain an estimate of annual costs attributable to violence against children and young people, and disaggregated by gender and type of violence.

Lifetime costs

Lifetime costs are the same as the one-year cost for assault and self-harm because hospital costs due to injury are considered a one-off cost that is incurred immediately after the abuse or self-harm takes place i.e. there are no ongoing costs throughout the victim's lifetime.

Lifetime costs for the long term health conditions were calculated by multiplying the unit cost estimates by the number of new cases in FY16-17 and projected forward from age 0 to 82 years⁶ for all health conditions except risky sexual behaviour and drug and alcohol abuse, which was projected from age 10 to 82 years. This assumes that the health conditions developed immediately after an episode of violence against a child or young person, and last for an individual's entire life, where the average life expectancy is 82 years. While it is noted that not all conditions last for an entire lifetime, this assumption was required given the complexities in estimating the average duration of health conditions and the difficulties of accounting for relapses. The onset of risky sexual behaviour and drug and alcohol abuse was assumed to be 10 years of age, as the literature does not provide a firm estimate of the average age of onset for sexual or alcohol abuse.

⁶ The average life expectancy for 2015 in Australia is 82 years old (see Australian Bureau of Statistics 2016b).

B.2. Education costs

The primary source of special education funding was assumed to be the recurrent expenditure on specific purpose payments for schools under the National Partnership Agreement: More Support for Students with a Disability. The total education costs that were used as an input to calculate the costs of violence against children and young people are provided in Table B.2.

Table B.2 Total education cost inputs (FY16-17 \$ million)

Costs	NSW	Australia	Source	Comment
Special education	19.3	60.3	Productivity Commission (2017) <i>Report on Government Services, Volume B: Child care, education and training</i>	Inputted from Table 4A.9 in SCRGSP 2017 (page 655) and inflated to FY16-17.

Annual costs

The total special education costs were multiplied by the relevant PAF to obtain an estimate of annual costs attributable to violence against children and young people disaggregated by gender and type of violence.

Lifetime costs

The lifetime cost was estimated by multiplying the unit cost estimate by the number of new cases in FY15-16 and projected forward from age 5 to 17 years (i.e. school age).

B.3. Justice system costs

Justice system costs include the administration costs of running the justice system as well as the associated medical costs and productivity losses that result from crime. The total justice system costs that were used as an input to calculate the costs of violence against children and young people are provided in Table B.3.

Note that the impact of second generation crime (i.e. the potential for individuals who were victims of violence to have higher propensity for crime during adulthood) is analysed qualitatively in section 6.2.4.

Table B.3 Total justice system cost inputs (FY16-17 \$million)

Costs	NSW	Australia	Source	Comment
Investigation	242.2	907.6	Productivity Commission (2018) <i>Report on Government Services, Volume C: Justice</i>	Recurrent expenditure on police services in 2016-17 (SCRGSP 2018, Table 7A.9)
Incarceration	1,203.8	4,650.9	Productivity Commission (2018) <i>Report on Government Services, Volume C: Justice</i>	Recurrent expenditure on prisons in 2016-17 (SCRGSP 2018, Table 7A.9)
Prosecution	3,030.1	10,934.7	Productivity Commission (2018) <i>Report on Government Services, Volume C: Justice</i> McCarthy et al. (2016)	Recurrent expenditure of all criminal courts in 2016-17 (SCRGSP 2018, Table 7A.9)
Care and protection orders	15.4	43.3	Productivity Commission (2018) <i>Report on Government Services, Volume C: Justice</i>	Expenditure on civil matters for the Children's Courts related to care and protection orders in 2016 (SCRGSP 2018, Table 7A.10)

Annual costs

The total justice system costs were multiplied by the relevant PAF to obtain an estimate of annual costs attributable to violence against children and young people disaggregated by gender and type of violence.

Lifetime costs

Lifetime costs are the same as the one-year cost for the short-term crime costs (investigation, incarceration, prosecution and crime and protection orders) because these are one-off costs that are incurred immediately after the violence takes place i.e. there are no ongoing costs throughout the victim’s lifetime.

The lifetime cost was estimated for the long-term crime costs (re-victimisation and violent crime) by multiplying the unit cost estimate by the number of new cases in FY16-17 and projected forward from age 10 to 28 years for violent crime and age 18 to 40 years for re-victimisation (McCarthy et al. 2016).

B.4. Child protection system costs

Government expenditure on child protection includes the cost of investigations and case-managing children, the provision of family support and Intensive Family Preservation services, the provision of OOHC and aftercare costs⁷. These expenditure values are set out in the Steering Committee for the Review of Government (SCRGSP 2018) reports and the input values are presented in Table A.6.

Table B.4 Total child protection system cost inputs (FY16-17 \$ million)

Costs	NSW	Australia	Source	Comment
Child protection and intensive family support (now IFP) services	600.4	1,641.3	Productivity Commission (2018) <i>Report on Government Services, Volume F: Community Services</i>	Cost of child protection and cost of intensive family support services, Table 16A.6 of SCRGSP 2018
Family support services	117.4	481.1	Productivity Commission (2018) <i>Report on Government Services, Volume F: Community Services</i>	Cost of family support service Table 16A.6 of SCRGSP 2018
OOHC	1,135.5	3,119.7	Productivity Commission (2018) <i>Report on Government Services, Volume F: Community Services</i>	Cost of OOHC services, Table 16A.6 of SCRGSP 2018
Aftercare	3.1	10.4	Department of Family and Community Services	NSW Aftercare cost inputs provided by FACS. Australian Aftercare costs were estimated by factoring up the NSW cost based on the NSW and Australian prevalence ratio

Annual costs

The annual costs were distributed across the types of violence by estimating a unit cost per child or young person and multiplying this unit cost by the number of substantiations for each type of violence.

Lifetime costs

Lifetime costs are the same as the one-year cost for the short-term child protection system costs (child protection, intensive family support services (now IFP services), and family support services (FSS)) because these are one-off costs that are incurred immediately after the abuse takes place i.e. there are no ongoing costs throughout the victim’s lifetime.

Aftercare costs for the individual’s lifetime were projected when the individual turned 18 years old, up to 25 years of age. A unit cost was derived based on annual costs divided by the estimated number of individuals leaving OOHC, then projected forward and multiplied by the number of new cases in 2016-17.

⁷ Aftercare services refer to the case planning and support provided to young people leaving statutory out of home care (OOHC) aged 15 to 25 to help them successfully transition to independent living and adulthood.

The lifetime cost of OOHC was estimated by multiplying the unit cost estimate by the number of new cases in FY16-17 that are expected to go to OOHC and projected forward over 12.6 years to represent the average length of stay in care (Tune Review 2016).

B.5. Supported accommodation and public housing costs

Supported accommodation includes short term or crisis accommodation, which provides shelter and support for those who are experiencing homelessness or fleeing violent or abusive situations. Public housing costs have been estimated for the number of young people leaving OOHC and transitioning into public housing. Note that annual costs of public housing consider both acute and longer-term episodes of homelessness. That is, public housing costs in a given year capture those who were homeless only in that year, as well as those who were homeless prior to that year. The total supported accommodation and public housing costs that were used as an input to calculate the costs of violence against children and young people are provided in Table B.5.

Table B.5 Total accommodation cost inputs (FY16-17 \$ million)

Costs	NSW	Australia	Source	Comment
Supported accommodation	204.4	817.4	Productivity Commission (2018) <i>Report on Government Services, Volume G: Housing and homelessness</i>	Expenditure on supported accommodation funding from SCRGSP (2018) Table 19A.1.
Public housing – cost per person	2,442.4	7,511.2	Productivity Commission (2018) <i>Report on Government Services, Volume G: Housing and homelessness</i>	Expenditure on public housing per child was sourced from SCRGSP (2018) Table 18A.1.
Specialist Homelessness Services – cost per person	2,442.4	7,511.2	Productivity Commission (2018) <i>Report on Government Services, Volume G: Housing and homelessness</i>	Expenditure on public housing per child was sourced from SCRGSP (2018) Table 18A.1.

Annual costs

The total supported accommodation and public housing costs were multiplied by the relevant PAF to obtain an estimate of annual costs attributable to violence against children and young people disaggregated by gender and type of abuse.

Lifetime costs

Lifetime costs are the same as annual costs for the supported accommodation costs because these are short-term accommodation solutions and are not associated with ongoing costs throughout the victim's lifetime.

The lifetime cost of public housing was estimated by multiplying the unit cost estimate by the number of new cases in FY16-17 that are expected to go to OOHC and age out of OOHC and projected forward over seven years to represent the median length of tenure in public housing (AIHW 2010b).

It is possible that violence against children and young people can result in lower levels of education, reduced employment prospects and lead to greater use of welfare and public housing. However, the pathway of reduced employment prospects has been captured in the quantification of productivity losses. Public housing costs consider only the impact of violence against children and young people on homelessness.

B.6. Productivity losses

A human capital approach was used to estimate the productivity losses. This captures the long-term impacts of lost productivity (employment and earnings outcomes) on the individual as a result of experiencing violence as a child or young person. To calculate productivity losses attributable to this violence, the difference in likelihood of employment and earnings outcomes was applied to the average annual earnings for males and females. The inputs for estimating the difference in earnings outcomes are provided in Table B.6.

Economic cost of violence against children and young people

Table B.6 Difference in employment outcomes between victims Vs non-victims– productivity losses inputs (Australia and NSW)

Impact	Males	Females	Source	Comment
Average annual earnings	\$74,375	\$51,556	ABS (2016a)	Average annual earnings in Australia of people aged 15-66 years, based on an assumed retirement age of 65.5, the age that people are eligible for the Age Pension
Difference in earnings	13%	10%	Forbes et al. (2010)	Compared to a person with a year 11 education or less, on average a man with a year 12 education earns around 13% more and a female earns 10% more
Difference in likelihood of employment	14%	14%	Currie and Widom (2010)	A victim of violence as a child or young person is 14% less likely to be in employment

Annual costs

The annual wage loss was applied to the estimate of total cases in FY16-17 to estimate the annual productivity losses attributable to violence against children and young people disaggregated by gender and type of abuse.

Lifetime costs

The lifetime productivity losses were estimated by multiplying the difference in annual earnings by the number of new cases in FY16-17 and projected forward from age 15 to 66 years (i.e. working age).

B.7. Deadweight losses

Deadweight losses were estimated at 28.75% (Productivity Commission 2003). This proportion was multiplied by the sum of government spending attributable to violence against children and young people. The assumptions for the proportion of costs that are government funded are provided in Table A.9.

Table B.7 Proportion of costs that are funded by Government

Cost category	% Government Funded	Source	Comment
Health system costs	67%	AIHW (2017), <i>Health expenditure Australia</i>	Health funding
Education costs	100%	Productivity Commission (2017) <i>Report on Government Services, Volume B: Child care, education and training</i>	Fully funded by government
Justice system costs	100%	Productivity Commission (2018) <i>Report on Government Services, Volume C: Justice</i>	Fully funded by government
Child protection system costs	100%	Productivity Commission (2018) <i>Report on Government Services, Volume F: Community Services</i>	Fully funded by government
Supported accommodation and public housing costs	100%	Productivity Commission (2018) <i>Report on Government Services, Volume G: Housing and homelessness</i>	Fully funded by government
Productivity losses	37%	ABS (2017d), ABS (2017e)	Proportion of the earning losses that are associated with tax forgone, based on average income tax (23.74%) and indirect tax rates (13.09%)

Annual costs

Annual deadweight losses were estimated by multiplying the total annual cost estimates of violence against children and young people (the outputs of this report) by the proportion of costs that are government funded by 28.75% (Productivity Commission 2003).

Lifetime costs

The lifetime deadweight losses were estimated by multiplying the total lifetime cost estimates of violence against children and young people (the outputs of this report) by the proportion of costs that are government funded by 28.75% (Productivity Commission 2003).

B.8. Quality of life and lifespan

B.8.1. Burden of disease

The loss of wellbeing and premature mortality caused from disease – called the ‘burden of disease’ – are measured in terms of DALYs. DALYs represent the sum of years of life lost due to premature death plus the years lived with a disability as a consequence of a disease. PAFs were calculated and applied to the estimates of burden of disease in Australia for the respective health outcomes (anxiety, depression, self-harm, drug and alcohol abuse, gastrointestinal conditions, obesity, chronic pain, risky sexual behaviour and assault) to obtain the number of DALYs attributable to violence against children and young people. Age-specific DALYs were used to project lifetime wellbeing lost within each age cohort. The estimated DALYs attributable to violence against children and young people are provided in Table B.8.

Table B.8 Total number of DALYs attributable to violence against children and young people

Disease	Total DALYs – NSW	Total DALYs - AUS	Comment
Anxiety	5,501	17,213	DALYs for anxiety disorders
Depression	7,698	24,088	DALYs for depressive disorders
Self-harm	4,752	14,869	DALYs for self-harm
Drug abuse	6,014	18,819	DALYs for drug use disorders
Alcohol abuse	748	2,340	DALYs for alcohol use disorders
Gastrointestinal conditions	490	1,534	DALYs for inflammatory bowel disease
Obesity	5,578	17,453	The sum of DALYs for cardiovascular diseases, chronic kidney disease due to diabetes mellitus, diabetes mellitus and diabetes, urogenital, blood, and endocrine diseases
Chronic pain	6,401	20,032	DALYs for low back and neck pain
Risky sexual behaviour	2	5	DALYs for HIV/AIDS
Assault	335	1,048	DALYs for injuries
TOTAL	37,517	117,400	Total DALYs attributable to violence against children and young people

Source: IHME (2015).

B.8.1.2. Annual costs

The single year DALYs per prevalence case were estimated and multiplied by the value of a statistical life year (VSLY) (\$194,458 in FY16-17) as advertised by the Australian Government Department of the Prime Minister and Cabinet (DPMC 2014).

B.8.1.3. Lifetime costs

The lifetime DALYs were estimated by multiplying the total lifetime DALYs by the VSLY and projecting the cost forward up to age 82, the assumed average life expectancy.

B.8.2. Premature mortality as a direct consequence of violence against children and young people

The DALYs only consider the long term consequences of violence against children and young people, but not the direct injury related deaths that occur as a direct consequence of the violence. Premature mortality during childhood and adolescence as a direct consequence of violence was estimated by multiplying the rate of deaths due to assault for children aged 0-24 years (ABS 2004) by the June 2016 population data (ABS 2017a). The rate of deaths per 100,000 people and total estimated deaths due to violence against children and young people in NSW and Australia are provided in Table B.9.

Table B.9 Number of deaths as a direct consequence of violence against children and young people (FY16-17 \$)

Age	Number of deaths per 100,000 people	Total deaths, NSW	Total deaths, Australia
<1	0.70	0.70	2.33
1-4	0.77	3.11	9.80
5-9	0.39	1.97	6.20
10-14	0.50	2.31	7.30
15-17	0.68	1.87	5.91
18-24	1.49	10.91	34.67
Total	-	20.88	66.22

Source: ABS (2004), ABS (2017a).

B.8.2.2. Annual costs

The annual cost of premature mortality was estimated by multiplying the number of deaths by the VSLY (\$194,458 in FY16-17, DPMC 2014).

B.8.2.3. Lifetime costs

The lifetime costs of premature mortality were estimated by multiplying the total deaths by the VSLY and projecting the costs forward up to age 82, the assumed average life expectancy.

B.9. Cost bearers

The financial costs of violence against children and young people in NSW were categorised by three main cost bearers: the State/Territory Government, Federal Government and individuals/society⁸. Table B.10 provides the assumed percentage split of costs by each cost bearer.

Table B.10 Cost bearer assumptions

Cost category	State/ Territory Government	Federal Government	Individual/ Society	Comment
Health system costs	26.1%	41.2%	32.7%	Cost allocation inputted directly from Table 3.2 in AIHW (2017). Funded by State/Territory and Federal Health departments.

⁸ The category "individual/ society" largely refers to individuals. In the context of health, this category includes the individuals themselves, as well as health insurers. Reduced employment includes costs that are borne by individuals and workplaces (i.e. society), which face reduced workforce productivity within the cohort of abused individuals. Deadweight losses include losses borne by society due to increased taxation and administration costs associated with welfare systems and compliance activities. For premature mortality, the entire cost is borne by the individual in the form of forgone utility from life years lost.

Economic cost of violence against children and young people

Education costs	91%	9%	-	Cost allocations are based on Australian Government funding for schools. Funded by State/Territory and Federal Education departments
Justice system costs	100%	-	-	Fully funded by State/Territory government. Funded by State/Territory Justice department
Child protection system costs	100%	-	-	Fully funded by State/Territory government. Funded by State/Territory Human Services department (FACS in NSW)
Supported accommodation and public housing costs	100%	-	-	Fully funded by State/Territory government. Funded by State/Territory Human Services department (FACS in NSW)
Productivity losses	8%	29%	63%	Assumed the tax forgone includes average income tax (23.74%) and indirect tax rates (13.09%). Where the tax revenues are allocated between state (20.5%) and Commonwealth (79.5%) governments. The remainder is borne collectively by individuals. Borne by State/Territory Revenue Departments and the Australian Taxation Office in terms of tax forgone
Deadweight losses	25%	25%	50%	Fully borne by individuals and society
Quality of life and lifespan	25%	25%	50%	Fully borne by individuals and society

Table B.11 below shows the split of financial annual costs by Government Department.

Table B.11 Split of annual costs by Government Department

	Health system	Education	Justice system	Child protection	SAAP & public housing	Productivity losses	Deadweight losses	Total
NSW Department of Education		\$2						\$2
NSW Department of Justice			\$37					\$37
NSW Health	\$150							\$150
NSW Office of State Revenue						\$103	\$206	\$309
Family and Community Services				\$1,856	\$41			\$1,897
Department of Education and Training		\$0.2						\$0.2
Department of Human Services		\$0				\$202		\$202
Department of Health	\$236							\$236
Australian Tax Office	\$236					\$202	\$206	\$408

Economic cost of violence against children and young people

Collective Welfare of Individuals	\$190					\$860	\$412	\$1,462
Total	\$576	\$3	\$37	\$1,856	\$41	\$1,366	\$824	\$4,703

Appendix C: Co-occurrence

Table C.1 Co-occurrence of child abuse – Males

Males	Prevalence rate	Total cases in 2016		Lifetime cases	
		NSW	Australia	NSW	Australia
Sexual	2.6%	5,693	17,899	99,636	311,765
Physical	1.9%	4,160	13,080	72,811	227,828
Emotional	1.8%	3,941	12,392	68,979	215,837
Neglect	0.5%	1,094	3,442	19,160	59,954
Sexual and Physical	0.3%	656	2,065	11,496	35,972
Sexual and Emotional	0.2%	438	1,376	7,664	23,981
Sexual and Neglect	0.2%	438	1,376	7,664	23,981
Physical and Emotional	1.8%	3,941	12,392	68,979	215,837
Physical and Neglect	0.4%	875	2,753	15,328	47,963
Physical, Emotional and Neglect	1.4%	3,065	9,638	53,650	167,873
Physical, Emotional and Sexual	0.1%	218	699	3,832	11,990
Physical, Neglect and Sexual	0.1%	218	699	3,832	11,990
Emotional, Neglect and Sexual	0.2%	437	1,376	7,664	23,981
Physical, Emotional, Sexual and Neglect	0.8%	1,752	5,507	30,657	95,927
Total	12.90%	28,250	88,810	494,352	1,546,835

Table C.2 Co-occurrence of child abuse – Females

Females	Prevalence rate	Total cases in 2016		Lifetime cases	
		NSW	Australia	NSW	Australia
Sexual	7.8%	15,376	48,500	303,708	946,756
Physical	2.3%	4,534	14,301	4,534	279,171
Emotional	1.2%	2,365	7,461	46,724	145,654
Neglect	0.9%	1,774	5,596	35,043	109,241
Sexual and Physical	0.6%	1,182	3,730	23,362	72,827
Sexual and Emotional	0.3%	591	1,865	11,681	36,413
Sexual and Neglect	0.5%	985	3,109	19,468	60,689
Physical and Emotional	2.5%	4,928	15,544	97,342	303,447
Physical and Neglect	0.5%	985	3,109	19,468	60,689
Physical, Emotional and Neglect	2.0%	3,942	12,435	77,874	242,758
Physical, Emotional and Sexual	0.2%	394	1,243	7,787	24,275
Physical, Neglect and Sexual	0.2%	394	1,243	7,787	24,275
Emotional, Neglect and Sexual	0.5%	985	3,109	19,468	60,689
Physical, Emotional, Sexual and Neglect	1.4%	2,759	8,705	54,511	169,930
Total	21.8%	28,250	88,810	848,827	2,646,063

Appendix D: Cost of violence, % breakdown

Table D.1 Cost of violence, percentage breakdown (%)

		NSW	NSW	Australia	Australia
	<i>Units</i>	Annual cost	Lifetime cost	Annual cost	Lifetime cost
Financial costs					
Health system	%	15.0%	31.3%	16.5%	30.4%
Education	%	0.1%	0.1%	0.1%	0.1%
Productivity Losses (reduced employment)	%	15.1%	11.5%	14.5%	10.6%
Child protection, Intensive Family Preservation, Aftercare and Family Support Services	%	48.4%	38.6%	47.0%	40.2%
Public housing and SAAP	%	1.1%	0.5%	1.5%	0.6%
Justice system	%	1.0%	0.2%	1.1%	0.3%
Deadweight losses	%	19.3%	17.7%	19.3%	17.9%
Total financial costs	%	100%	100%	100%	100%
Non-financial costs					
DALYs	%	99.2%	99.7%	99.2%	99.7%
Premature death	%	0.8%	0.3%	0.8%	0.3%
Total non-financial costs	%	100.0%	100.0%	100.0%	100.0%

Limitation of our work

General use restriction

This report is prepared solely for the use of the Office of the Advocate for Children and Young People. This report is not intended to and should not be used or relied upon by anyone else and we accept no duty of care to any other person or entity. The report has been prepared for the purpose of updating the estimates of the cost of violence against children and young people in NSW and Australia. You should not refer to or use our name or the advice for any other purpose.

Deloitte.

Access Economics

Deloitte Access Economics

ACN: 149 633 116
8 Brindabella Circuit
Brindabella Business Park
Canberra Airport ACT 2609
Tel: +61 2 6263 7000
Fax: +61 2 6263 7004

Deloitte Access Economics is Australia's pre-eminent economics advisory practice and a member of Deloitte's global economics group. For more information, please visit our website

www.deloitte.com/au/deloitte-access-economics

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/au/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms.

The entity named herein is a legally separate and independent entity. In providing this document, the author only acts in the named capacity and does not act in any other capacity. Nothing in this document, nor any related attachments or communications or services, have any capacity to bind any other entity under the 'Deloitte' network of member firms (including those operating in Australia).

About Deloitte

Deloitte provides audit, tax, consulting, and financial advisory services to public and private clients spanning multiple industries. With a globally connected network of member firms in more than 150 countries, Deloitte brings world-class capabilities and high-quality service to clients, delivering the insights they need to address their most complex business challenges. Deloitte's approximately 244,000 professionals are committed to becoming the standard of excellence.

About Deloitte Australia

In Australia, the member firm is the Australian partnership of Deloitte Touche Tohmatsu. As one of Australia's leading professional services firms, Deloitte Touche Tohmatsu and its affiliates provide audit, tax, consulting, and financial advisory services through approximately 7,000 people across the country. Focused on the creation of value and growth, and known as an employer of choice for innovative human resources programs, we are dedicated to helping our clients and our people excel. For more information, please visit our web site at www.deloitte.com.au.

Liability limited by a scheme approved under Professional Standards Legislation.

Member of Deloitte Touche Tohmatsu Limited

© 2019 Deloitte Access Economics Pty Ltd