MARTIN JENKINS

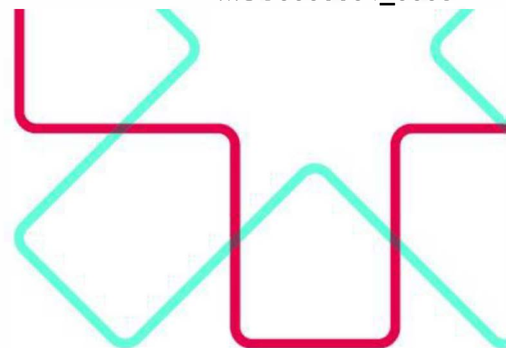
ECONOMIC COST OF ABUSE IN CARE

Final Report

Scoping of approach and high-level estimate

29 September 2020

MSC0008804_0002



CONTENTS

Summary		**1**
1	**Introduction**	**6**
1.1	Background	6
1.2	Deliverable	6
1.3	Approach	6
1.4	Format of the report	8
2	**Impacts of child maltreatment**	**9**
2.1	Victims and survivors	9
2.2	Impacts on wider society	11
2.3	Impacts on the families and whānau of victims and survivors	13
3	**Measuring costs of child maltreatment**	**14**
3.1	Financial and non-financial costs	14
3.2	Prevalence and attribution	21
3.3	Presentation of costs	27
3.4	Estimating the costs of 'historical' abuse	27
3.5	Costs identified in other studies	29
4	**Estimating the costs of abuse in care in New Zealand**	**33**
4.1	Prevalence	33
4.2	Cost of abuse in care in New Zealand	36
5	**Improving the estimate of the costs of abuse in care**	**42**
6	**References**	**44**

APPENDICES

Appendix 1 : Deloitte Access Study Methodology	**46**

TABLES

Table 1. Financial and non-financial costs of child maltreatment 15
Table 2. Appropriations related to child maltreatment 16
Table 3. Health condition AFs used in the Glenn Inquiry report 24
Table 4. Health condition AFs identified by Moore et al, 2015 24
Table 5. Impact PAFs identified by Deloitte Access, 2019 26
Table 6. Summary of cost of abuse studies (lifetime costs in New Zealand dollars) 31
Table 7. Summary of cohort sizes within State and faith-based care settings, 1950 to 2019 (after removing estimated overlaps between settings) 35
Table 8. Estimated numbers of survivors of abuse in State and faith-based care, 1950 to 2019 (showing the low and high end of the ranges of abuse) 35
Table 9. Costs per individual applied in high-level estimates 37
Table 10. High level estimate of cost of abuse in care 39
Table 11. Costs of abuse in care by care setting 41

FIGURES

Figure 1. High and low percentages of the prevalence of abuse in care 23
Figure 2. Survivors of abuse in care, high and low estimates, 1950-2019 36
Figure 3. Breakdown of costs 38
Figure 4. Total costs of abuse, 1950 - 2019 40

PREFACE

This report has been prepared for the Royal Commission of Inquiry into Abuse in Care by Jason Leung-Wai from MartinJenkins (Martin, Jenkins & Associates Limited).

MartinJenkins advises clients in the public, private and not-for-profit sectors. Our work in the public sector spans a wide range of central and local government agencies. We provide advice and support to clients in the following areas:

- public policy
- evaluation and research
- strategy and investment
- performance improvement and monitoring
- business improvement
- organisational improvement
- employment relations
- economic development
- financial and economic analysis.

Our aim is to provide an integrated and comprehensive response to client needs – connecting our skill sets and applying fresh thinking to lift performance.

MartinJenkins is a privately owned New Zealand limited liability company. We have offices in Wellington and Auckland. The company was established in 1993 and is governed by a Board made up of executive directors Kevin Jenkins, Michael Mills, Nick Davis, Allana Coulon and Richard Tait, plus independent director Sophia Gunn and chair David Prentice.

Disclaimer

This report has been prepared by MartinJenkins with care and diligence – for the purpose of providing high-level indicative estimates to the Royal Commission – and the estimates and statements are provided in good faith and in the belief on reasonable grounds that such estimates and statements are fair and not misleading. However, no responsibility is accepted by MartinJenkins or any of their officers, employees or agents for errors or omissions however arising in the preparation of this report, or for any consequences of reliance on its content, conclusions or any material, correspondence of any form or discussions arising out of or associated with its preparation.

MSC0008804_0006

SUMMARY

Introduction/purpose

The Royal Commission of Inquiry into Abuse in Care (the Inquiry) was set up by the New Zealand Government to inquire into the abuse and neglect of children, young people and vulnerable adults in the care of the State and faith-based institutions in New Zealand between 1950 and 1999, with discretion to consider cases both before and after that period.

A better understanding of the costs of abuse will support a conversation about how to reduce personal and societal costs. This is through addressing the prevalence of abuse in care and through redress (particularly rehabilitation and support) to alleviate the long term impacts of abuse on survivors and society.

This study aims to provide a high-level estimate of the cost of abuse in care over the inquiry period. In researching how this might be done, the study identifies the range of impacts associated with child abuse, how they can be measured, and available costs that can be applied.

Method for estimating cost of abuse in care

A desk-based review, this report provides information on the impacts of child abuse and how it has been measured and costed by a number of studies in New Zealand and overseas. It explores how these costs could be applied to the estimates of those abused in care in New Zealand between 1950 and 2019. Ultimately it provides a high-level estimate of the cost of abuse in care in New Zealand.

Cost studies capture both the financial costs to the economy and the non-financial costs incurred by the survivor of abuse. The estimates are based on the method and costs used in a recent Australian study[1] with some revisions to reflect New Zealand costs where they are known and available. Costs have been converted to 2019 New Zealand dollars.

Prevalence

The number of people abused in care is taken from a recent study commissioned by the Inquiry[2] which provided high and low estimates of people abused by cared setting in 10 year cohorts from 1950 to 2019.

Costs

The methodology and the range of impacts that are costed are included in the appendix. The costs are financial and non-financial in nature. All costs are in 2019 NZ$.

1 (Deloitte and Access Economics, 2019)

2 (MartinJenkins, 2020)

Financial

Financial costs are actual costs incurred by the provision of health and other services incurred by survivors of abuse in care. This includes:

- 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 increased educational support.
- 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, Aftercare, Family Support Services, and Intensive Family Preservation. Note that these are based on the Australian child protection system.[3]
- 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 out-of-home-care 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. The productivity loss has been revised to reflect the average New Zealand income.
- Deadweight losses associated with additional government expenditures and taxation revenue foregone that is attributable to violence against children and young people. Deadweight losses have been revised to 20% as recommended by the New Zealand Treasury in their social cost benefit analysis guidance.

Non-financial

Non-financial costs are those costs that are faced by the survivor due to the pain and suffering experienced as a result of the abuse.

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 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). The VSLY has been revised to reflect the New Zealand Value of Statistical Life (VOSL) estimated by the Ministry of Transport.

Presentation of costs

The high-level estimate is based on lifetime costs of abuse. Lifetime costs are the costs incurred over the entire life of survivors identified in a certain time period. This contrasts with annual costs, which measures the costs incurred by all survivors in a single year, regardless of when the abuse occurred.

[3] The Deloitte report also looked at the costs for New South Wales. In applying the Deloitte study to New Zealand abuse in care the costs for Australia were used.

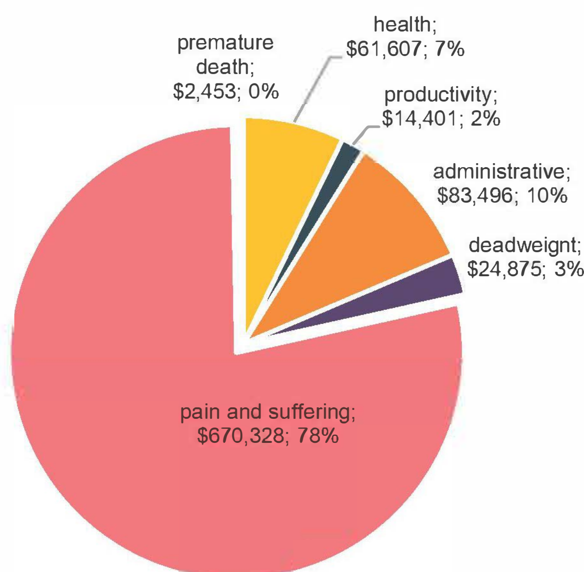
The methodologies and approaches to measuring the cost of abuse reviewed have converged over time, with an increasing focus on lifetime costs discounted to the year in which the abuse was discovered.

Lifetime costs also work better when considering the historical impacts as inflation and discounting of future costs are already built into the estimate calculation. It is also simpler to apply as it is not necessary to know the age at which the abuse occurs.

Results

In 2019, the average lifetime cost for an individual abused in care is estimated to be approximately $857,000. About $184,000 of this is financial costs to the economy from increased spending on healthcare, state costs responding to negative outcomes from abused children, deadweight losses from collecting taxes to fund state services, and productivity losses. The remaining $673,000 (78%) is a non-financial cost reflecting the pain and suffering and premature death of the survivor of abuse.

In 2019, somewhere between 1,250 and 2,740 people may have been abused in care.[4] Over their lifetimes, the impacts of abuse are expected to cost the survivors and society between $1.07 billion and $2.35 billion. Between $231 million and $506 million are financial costs to the New Zealand economy with the remainder being non-financial costs borne by the survivors of abuse in care.

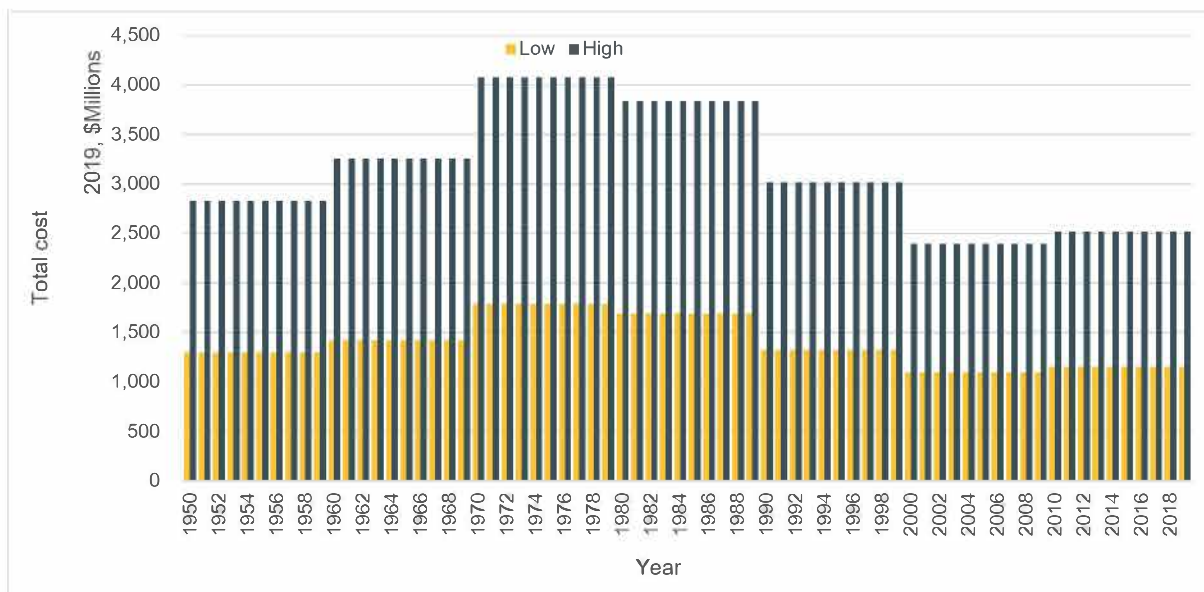


The cost of abuse in care is significant. In 2019, the total estimated cost of abuse in care is somewhere between 0.4% and 0.8% of New Zealand GDP.

From 1950 to 2019 it is estimated that between 113,000 and 253,000 people may have been abused while in State and faith-based care.

Applying the same average lifetime cost per survivor suggests total costs between 1950 and 2019 of between $96 billion and $217 billion. Financial costs to the New Zealand economy make up between $20.8 billion and $46.7 billion. Non-financial costs make up between $77 billion and $172 billion.

[4] (MartinJenkins, 2020)



Limitations

Measuring the costs of abuse is difficult for a number of reasons, which are outlined below. Due to the limitations in calculating costs, where there is a choice, most studies tend to err towards the conservative.

Prevalence

It is difficult to identify the number of people that have been abused. In most cases, the prevalence of abuse is under-estimated.

The prevalence of abuse in care was taken from an earlier cohort study[5] that used prevalence rates from a range of New Zealand and international studies and applied them to known estimates of the population in care settings in New Zealand between 1950 and 2019. Further, the estimates of people abused in care focused on the severe physical abuse and sexual abuse and so is likely a conservative estimate of people abused or neglected in care setting in New Zealand given the wider scope of abuse covered by the Inquiry.

Attribution

While there is a strong association between child abuse and neglect in institutional care and negative impacts, not all who experience abuse have similar, or negative, outcomes. Additionally, it is very challenging to clearly determine whether an outcome has been caused, either directly or indirectly, by abuse that occurred in care, as opposed to abuse that may have occurred prior to entering care or after leaving care.

5 (MartinJenkins, 2020)

Costs

Cost of abuse studies draw on the best information that they can to inform their analysis. This often means looking at information that is fairly dated or collated for different purposes and in different countries even. No cost studies were identified that considered costs on family / whānau or intergenerational impacts.

The New Zealand costs associated with addressing those specific impacts are not available at the level of detail required. Many of the costs used in the high-level estimates are for providing health and social services in Australia. As well as having different basic costs, Australia also has different legislative environments and agency structures that will affect what costs are incurred and covered by the public sector.

Coverage

Not all costs are captured in the high-level estimates. Some costs associated with impacts of child maltreatment are specific to New Zealand, such as ACC costs. Further, the social services costs do not appear to capture increased benefit costs due to unemployment or under-employment. Other costs, such as volunteer costs and welfare payments, were not estimated in the Deloitte study and could not be derived from other studies and so are not included.

Timeframes

No studies were identified that estimated the cost of abuse over a period of greater than one year. While it is possible to estimate future costs, it is difficult to capture and reflect actual past costs retrospectively. This is compounded when looking at a long time period set by the terms of reference of the Inquiry.

Methodology

Finally, non-financial costs account for close to 80% of total costs. The methodology for calculating health impacts has a number of concerns. It relies on attributable fractions from relatively old studies not necessarily from New Zealand or where the health condition is not directly related to abuse in care. Added to this, the costs are based on a value of statistical life that was specifically calculated for transport accidents and not abuse. Therefore, there is greater uncertainty in the non-financial cost. Greater caution should be used when referring to or considering the non-financial cost.

Next steps

With a longer timeframe and better access to resources and experts, a more accurate estimate of the cost of abuse in care can be determined, perhaps as a subset of the total cost of child maltreatment in New Zealand. In particular, estimates for historical costs can be improved to better reflect the conditions and the costs that existed at the time if the timeframes of abuse in care are explored in more detail.

Addressing each of the limitations identified above would improve the validity of the analysis. However, the simplest and greatest impact on accuracy would be around identifying New Zealand costs associated with health, and social services related to child maltreatment.

1 INTRODUCTION

MartinJenkins have been commissioned to provide a high-level estimate of the cost of abuse in care.

1.1 Background

The Royal Commission of Inquiry into Abuse in Care (the Inquiry) was set up by the New Zealand Government to inquire into the abuse and neglect of children, young people and vulnerable adults in the care of the State and faith-based institutions in New Zealand between 1950 and 1999, with discretion to consider cases both before and after that period.

Abuse and neglect have impacts on the survivor. These impacts result in costs, both to the survivor and to wider society in addressing those impacts. The Inquiry is interested to know what abuse in care has cost both the survivors and society.

A better understanding of the costs of abuse will also support the conversation about how personal and societal costs can be reduced through addressing the prevalence of abuse in care and through redress (particularly rehabilitation and support) to alleviate the long-term impacts of abuse on survivors and society.

1.2 Deliverable

This report provides a high-level estimate of the cost of abuse and neglect in care between 1950 and 2019. In providing the estimate, the report also:

- provides information on impacts associated with maltreatment and how these impacts affect both the survivor and society
- outlines the possible costs associated with the impacts of abuse and neglect and how they can be measured
- discusses the limitations in measuring the cost of abuse and neglect in care
- outlines possible ways to improve the accuracy and allow more detailed analysis of the cost of abuse and neglect in care.

1.3 Approach

The approach is to review existing literature and information on the impacts and costs of abuse and see if these can be used to provide a high-level estimate of the cost of abuse in care between 1950 and 2019.

1.3.1 Definition of abuse in care

Abuse in care is defined in the Royal Commission Inquiry's Terms of Reference[6] as.

> *Physical, sexual, and emotional or psychological abuse, and neglect, and—*
>
> > *a) the term 'abuse' includes inadequate or improper treatment or care that resulted in serious harm to the individual (whether mental or physical):*
> >
> > *b) the inquiry may consider abuse by a person involved in the provision of State care or care by a faith-based institution. A person may be 'involved in' the provision of care in various ways. They may be, for example, representatives, members, staff, associates, contractors, volunteers, service providers, or others. The inquiry may also consider abuse by another care recipient.*

The individuals refer to a child or young person below the age of 18 years, or a vulnerable adult[7].

This report uses the term child maltreatment to reflect both abuse and neglect.

1.3.2 Limitations

Caution is advised in that the numbers used in this report have been extrapolated from an Australian study on cost of abuse and are therefore high-level and indicative only of the cost of abuse and neglect in care in New Zealand. Differences in methodology and/or aggregation of impacts meant that costs identified through different studies could not be incorporated. There are also limitations to the prevalence study used to estimate the number of survivors of abuse in care in New Zealand. Where needed, further work will be done by the Inquiry on the costs of abuse and neglect in care.

Ultimately, differences in methodologies and gaps in data meant that the high-level estimate of the cost of abuse in care in New Zealand applies impact and costs identified in an Australian study. While costs have been revised where New Zealand information was available and could be calculated, a large portion of the financial costs reflect costs in the Australian system, where structures and services are different to New Zealand.

Prevalence was identified in a study commissioned by the Inquiry to estimate the number of survivors of abuse in care settings between 1950 and 2019. Further, the study had a narrower definition of abuse, focusing on research that considered abuse at the higher end of the spectrum (sexual and 'severe' physical abuse). As a result, it is unlikely to capture emotional or psychological abuse, or neglect. This study also drew on international literature to determine prevalence of abuse and is not specific to New Zealand. Prevalence used in this analysis is likely to be understated.

Because of a lack of information, several impacts associated with abuse are not costed in the analysis. These include impacts such as increased criminal activity, impacts on families/ whānau, and inter-generational impacts.

[6] (Department of Internal Affairs, 2018, p. 8)

[7] For the purpose of this inquiry, 'vulnerable adult' means an adult who needs additional care and support by virtue of being in State care or in the care of a faith-based institution, which may involve deprivation of liberty. In addition to vulnerability that may arise generally from being deprived of liberty or in care, a person may be vulnerable for other reasons (for example, due to their physical, intellectual, disability, or mental health status, or due to other factors listed in clauses 8 and 13 of the ToR).

1.4 Format of the report

The report is split into four sections. The first section explores the impacts of abuse. It identifies the range of outcomes resulting from child maltreatment and who is impacted from those outcomes. The second section looks at how these outcomes can be measured and costed. The third section applies these methods to estimate the cost abuse in care in New Zealand. The fourth section outlines limitations of the estimates and next steps to improve the estimation of costs of abuse in care.

2 IMPACTS OF CHILD MALTREATMENT

Child maltreatment causes significant harm to the individual it is perpetrated against. However, the damage and costs resulting from maltreatment is not felt exclusively by the individual survivor.

The majority of studies acknowledge the three groups impacted by child maltreatment – victims and survivors, family and whānau (including intergenerational impacts), and wider society.

2.1 Victims and survivors

Determining the impact of abuse and neglect is a key area of investigation for the Royal Commission. This work will continue throughout the life of the Inquiry. Thus far a review of literature into the impacts of institutional abuse and neglect has been undertaken by the Inquiry research team.

Findings indicate impacts fall into the following domains:

- Immediate and long term physical health
- Emotional wellbeing and mental health
- Loss of identity, including cultural identity and language, loss of connection to whānau, hapū, and iwi
- Self-harm and suicide
- Developmental impacts
- Social wellbeing including interpersonal relationships
- Educational achievement
- Economic wellbeing
- Coping strategies including alcohol and drug misuse
- Spiritual wellbeing
- Vulnerability to experiences of violence (as victim and perpetrator)
- Gang membership and criminality.

The identified literature suggested that the trauma of institutional child sexual abuse may be **exacerbated** by the interplay of abuse dynamics in institutional settings, which may reduce or impede circumstances supporting disclosure, belief, support, and protection from future harm.

High-level findings of the literature review are presented below.

- Abuse and neglect experienced in institutional care are associated with profound negative physical, emotional, mental, social, and spiritual outcomes that can impact practically every facet of life. Impacts can present themselves at the time of the abuse and/or over the life course of a

person. It is important to note that while there is a strong association between child abuse in institutional care and negative impacts, not all who experience abuse have similar, or negative, outcomes.

- The impacts of abuse while in institutional care are experienced through complex direct and indirect pathways. Many statistics related to mental disorders, relationship breakdowns, unemployment, homelessness, or suicide may mask contributing causal factors such as abuse and neglect that occurred earlier in people's lives.
- The evidence suggests that the long-term consequences of abuse may vary according to the severity of the abuse, multiple types of abuse, the age of the child, duration of abuse, and the number of preparators. Notably, most of these findings are based on child sexual abuse.
- Physical health can be directly impacted through injury or as a consequence of 'treatment'[8].
- People who have experienced abuse while in institutional care are at risk of having poorer physical health over the course of their lives.
- Abuse and neglect experienced by young children while in care can result in sub-optimal physical growth and development. This includes low body weight and height, irregular hormone levels, and abnormal neurobiological development affecting a range of brain structures and functions. These neurobiological abnormalities are implicated in cognitive, mental health and social difficulties. Institutional care that fails to meet children's basic needs, including their need for stable and meaningful interpersonal relationships with a primary caregiver, can disrupt the ability to form a secure attachment. Attachment issues can have significant effects on emotional, mental health and social functioning, particularly interpersonal relationships, and overall wellbeing.
- Survivors of abuse in institutional care have reported impacts on emotional wellbeing including pervasive feelings of shame, guilt, lack of self-worth and self-identity, anxiousness, and anger.
- Mental health-related issues, including diagnosable disorders, include post-traumatic stress disorder, anxiety, depression, alcohol or substance misuse, and personality disorders. Mental health issues are the most reported negative impacts of people who have been abused in care.
- Coping strategies in response to emotional pain can include maladaptive behaviours such as alcohol and substance misuse. Self-harm, thoughts of suicide, attempted suicide, and death by suicide are also reported.
- Social impacts include negative education and employment outcomes, gang involvement, involvement in crime, issues with intimate relationships and parenting. Many of these social impacts have intergenerational consequences.
- Religious abuse, which encompasses spiritual and religious dimensions, is a specific form of harm carrying significant impacts for individual and collective wellbeing. Impacts can include feelings of betrayal and loss of trust, guilt, and loss of faith, as well as alienation from family and religious communities.
- Secure cultural identity and connection to whānau, hapū, and iwi is recognised by Māori scholars as central to Māori wellbeing. Many Māori children who entered care in Aotearoa New Zealand

[8] Treatment included drugs, unmodified electroconvulsive therapy and deep sleep therapy.

Commercial In Confidence

became alienated from their tikanga, te reo Māori, and identity as Māori. Some lost knowledge of, and connection to, their whānau, hapū, and iwi. Similar outcomes have been documented in studies of First Nations children in care in Canada. Little is known of the experiences of Pacific children in care, but they likely experienced similar negative impacts in terms of cultural wellbeing.

The impacts on the individual can result in both internal and external costs.

Personal pain and suffering is an internal cost borne by the survivor, who has a reduced quality of life as a result of maltreatment. This pain and suffering is incurred throughout the survivor's life and may not decline over time.

The external costs of mental and physical health are borne by family and whānau (including intergenerational costs), the community and by society.

2.2 Impacts on wider society

Child abuse and neglect has impacts on wider society, through the increased uptake or usage of public services by victims and survivors. [9] There are also impacts from reduced productivity of survivors of abuse.

These public services to support survivors or to address outcomes include:

- healthcare system
- social support services
  - child protection
  - criminal justice system
  - special educational provision
  - welfare benefits system (including housing).

Healthcare system

While health impacts the survivor of abuse, the costs of health are largely borne by the public healthcare system, with the exception of some mental health, child developmental, and disability services provided by non-government organisations. As the health impacts are both mental and physical, short- and long-term, they draw on a range of health services. These include, but are not limited to:

- General practitioner and specialist health services
- Mental health services
- Alcohol and drug services
- Sexual health services
- Child developmental services.

[9] (Fisher, Goldsmith, Hurcombe, & Soares, 2017, p. 154)

Healthcare can be delivered in the community or at be hospital based (outpatient and in-patient care).

Social support services

There are a range of costs to society of providing services to address abuse, and support survivors, generally borne by government, but also non-government organisations.

The range of services that have been estimated in different studies include:

- state services relating to the abuse of children
- victim/survivor support
- police
- justice/correction
- social welfare
- special education and education support
- public housing.

Several studies also consider the costs associated with convicting perpetrators and also the cost of efforts to increase awareness and education to reduce abuse.

Productivity

The impacts on productivity tend to be identified in cost studies rather than studies on the effects of child abuse. Studies on the costs of child abuse all tend to include productivity losses resulting from the poorer performance in the workforce of survivors of child abuse. The observation is that survivors of child abuse have lower educational attainment and are either

- less likely to be employed or
- employed in lower productivity and lower paying jobs.

Productivity losses accrue to society, but also affect the individual. Productivity losses can take a number of forms but generally reflect lower educational attainment (and subsequent ability to earn) and/or lower levels of employment.

Children who have been maltreated tend not do as well in school or in employment. This results in a lesser proportion in employed work and/or lower levels of productivity and/or incomes of those that are employed.

2.3 Impacts on the families and whānau of victims and survivors

In all cases of maltreatment in care, the abuse was from perpetrators within the institutions and not by a parent. However, in many cases children were taken from their families and were put into state care. These families will be affected differently than those where the parents willingly placed their child into care i.e. boarding schools.

Families and whānau can be impacted when children are taken into care by the state, and when children are returned to their care, if their children were subsequently abused.

There are also intergenerational impacts of abuse. As survivors reach adulthood and build their own families these families also can often also be impacted by the survivors' experiences of abuse and the social and economic consequences of that abuse. Families of survivors are at higher risk of maltreatment, victimisation, offending and incarceration.

None of the studies reviewed captured the impacts and costs associated with the families and whānau of victims and survivors. As such, costs to families are not considered in the high-level estimates.

3 MEASURING COSTS OF CHILD MALTREATMENT

Having identified the range of impacts associated with abuse, this section summarise how impacts of child maltreatment have been categorised and costed in different studies. It also looks at these costs in a New Zealand setting, where possible.

New Zealand and international studies[10] were reviewed to understand:

- The range of impacts associated with abuse and neglect
- How these impacts can be measured, and costs calculated and applied in a New Zealand care context.

Two studies estimated cost of abuse to New Zealand. The first was by Infometrics in 2008[11] and the second was for the Glenn Inquiry into family violence in 2014[12].

A number of overseas studies estimated the economic costs of abuse. The review landed on recent studies from Australia[13], the United Kingdom[14] and the United States[15] The methodology from these studies were assessed in more depth and used to inform our approach to provide high-level estimate of the cost of abuse in care in New Zealand.

The analysis was limited to cost information available in existing literature. Stakeholders and government agencies were not engaged to identify or commission administrative or customised datasets. All the literature reviewed is referenced in the analysis and a full list of references is included in the bibliography.

3.1 Financial and non-financial costs

The costs estimated in most studies can be broken into two groups – financial and non-financial. Within each of these groups are a number of cost areas.

[10] Our review considered research undertaken in the last 20 years.
[11] (Infometrics, 2008)
[12] (Kahui & Snively, 2014)
[13] (Deloitte and Access Economics, 2019) (McCarthy, et al., December 2016).
[14] (Conti, Morris, Melnychuk, & Pizzo, 2018).
[15] (Peterson, Florence, & Klevens, December 2018).

Commercial In Confidence

Table 1. Financial and non-financial costs of child maltreatment

Financial	Non-financial
• Social support services – Health costs – Child welfare and care services – Justice and police – Social welfare and development – Education • Deadweight costs • Productivity	• Personal pain and suffering • Loss of life

These are discussed further below.

3.1.1 Financial costs

Financial costs are made up of health, social support services, child protection costs, justice and police, and social welfare (including housing and education support).

Government services are funded largely through taxation, which incurs a deadweight loss[16] cost to society.

Finally, survivors of child abuse and neglect tend to be less productive in term of income and therefore contribute less to society economically.

Social support services (administrative)

Administrative costs relate to the costs of social support services responding to outcomes and impacts of children maltreated in care both as children but also as adults.

Government services

Information on administrative services can be identified through the departmental vote appropriations. While these do not identify specifically what is spent on child who have been maltreated, they give an idea of the magnitude of expenditure that goes towards addressing some of the impacts resulting from child maltreatment.

In 2008/09, the cost to government to provide care and protection services for children and young people was estimated at $451 million[17] in 2008/09.

Further work is required to be able to assign government expenditure to survivors of child maltreatment while in care. This includes assigning service costs and better attribution of activity to

[16] There are additional costs where the funds come from taxation. Taxes encourage people to move away from things that are taxed and toward things that are not taxed or more lightly taxed. Their consumption choices are distorted away from what they would prefer in the absence of taxes. The change in the mix of consumption has an adverse welfare effect, which is additional to the loss of welfare resulting directly from the loss of money that is taken away in the form of tax. This welfare loss is referred to as the deadweight cost of taxation. For example income tax on capital income tends to discourage investment and saving in favour of immediate consumption (The Treasury, 2015, p. 15)

[17] (Infometrics, 2008)

survivors of child maltreatment, and particularly those abused in care. However, just considering those appropriations that relate to child maltreatment suggests a fairly high upper bound on costs of over $1.5 billion.

Table 2. Appropriations related to child maltreatment

Government agency	Appropriation (000s)
Vote Health - mental health services	$208,000
Vote Health - child health services	$112,000
Vote Oranga Tamariki - statutory intervention and transition	$886,000
Vote Oranga Tamariki - intensive intervention	$14,000
Vote Justice - reducing youth offending	$3,700
Vote Police - youth focused crime prevention	$72,000
Vote Social Development - Community support services	$162,000
Vote Social Development - supporting survivors and perpetrators of family and sexual violence	$91,000
Vote Social Development - delivering youth development	$28,000
Total	**$1,576,700**

Source: New Zealand Government Supplementary Estimates of Appropriations

Vote Health

There are significant financial costs associated with addressing the short and long term negative health outcomes associated with child abuse.

Over $20 billion has been appropriated for Vote Health in 2020/2021.[18] Of this about $15.3 billion is provided to the district health boards for district services, and $3.76 billion funds health and disability services at a national level.

At a national level about $208 million is for Mental Health Services, $112 million is for Child Health Services. Note that only a portion of this would go towards survivors of abuse.

There are also costs for other services to address health issues associated with abuse. This includes costs associated with obesity, chronic pain, gastrointestinal and risky sexual behaviour.

ACC

There are additional health and rehabilitation costs associated with sexual assault that are borne by ACC, which pays providers for sexual abuse and treatment services, and associated training and accreditation services, for victims of sexual abuse or assault. The budget for sexual abuse assessment and treatment in 2019/20 was $7 million. There would also be additional costs associated with case management of victims of which a portion would go to survivors of abuse in care.[19]

18 (New Zealand Government, 2020)

19 (Accident Compensation Corporation, 2019)

Issues with estimating health costs

The issues in estimating health costs revolve around availability and timeliness of information. Often it is a case of finding the most recent relevant information and utilising that. Other studies have used meta-analysis to identify a range of estimates for prevalence, attribution and cost and use those.

Attributable fractions are not always available at a country level. Where they are available, they are often dated. As an example, the Glenn Inquiry report drew on studies in the US to determine the prevalence of health conditions (anxiety/depression, asthma, and ADHD) of child abuse survivors. These studies were from 2004 and 2007.[20]

As well as attribution there is limited information on healthcare costs of treating specific diseases or conditions in New Zealand.[21] The Glenn Inquiry report used studies from Australia in 2004 (depression), Spain in 2012 (anxiety), Australia in 1998 (injury), and Germany in 2005 (eating disorders). Health costs are clearly different in different countries and are more dependent upon the healthcare systems. As well as expenditure, there are issues around the quality of healthcare and who bears the cost of healthcare.

Ultimately, the Glenn Inquiry report suggested an annual health care cost per survivor of child abuse and domestic violence of about $22,500.[22] This was made up of:

Short-term

- Physical injuries - $4,897

Long-term

- Depression - $5,909
- Anxiety - $2,509
- Eating disorders - $2,772
- Asthma - $1,266
- ADHD - $5,119

Vote Oranga Tamariki

Oranga Tamariki is responsible for supporting any child in New Zealand whose wellbeing is at significant risk of harm now, or in the future. The agency also works with young people who may have offended or are likely to offend.

Oranga Tamariki had a total budget of over $1,278 million for investing in children and young people including, statutory intervention and transition ($886 million), prevention and early intervention ($368 million), intensive intervention ($14 million), and policy advice and ministerial services ($10 million).[23]

20 (Kahui & Snively, 2014, p. 50)

21 In 2010, Manukau DHB released a study that calculated the annual health care costs related to cardiovascular disease and diabetes in 2008. To provide context, the marginal value of health care savings per year is $7,932 for avoiding cardiovascular disease and $4,075 for avoiding diabetes.

22 Adjusted to 2019 dollars. Note that this study was heavily weighted toward domestic violence and so does not necessarily reflect child abuse. Further, this does not cover all costs identified in the earlier section.

23 (New Zealand Government, 2019)

About $900 million was budgeted for statutory intervention and transition and intensive intervention. With about 1.124 million children under the age of 18, this suggests just over $800 per child. There are about 22,000 children placed with care givers and about 4,700 children in state care.[24] Applying the $900 million to 26,700 children suggests a cost of about $34,000 per child.

A large proportion of these costs will not relate to abuse in care as the majority of Oranga Tamariki costs relate to abuse that occurs in the home.

Vote Justice and Police

Justice has a total budget of about $638 million. About $3.7 million went towards services to reduce youth offending in 2019, with appropriations increasing to about $5 million in outyears.[25]

The marginal cost of 2-3 months of supervised residential care for juvenile offending is estimated at $79,000. The cost of diversionary response for a low-risk youth offender is estimated at $3,221.[26]

Police have a total budget of about $1.7 billion. Youth focused crime prevention ($72 million) sits within the $271 million assigned to General Crime Prevention Services.[27]

The impacts from child abuse on criminal activity can occur at all stages of life and not just during youth meaning a further portion of General Crime Prevention Services could also be assigned to survivors of child abuse.

A 2004 study[28] estimated the cost of crime in New Zealand. The costs included in the study were:

- Fiscal costs accruing to public sector agencies directly involved in preventing, detecting resolving and redressing crime (core justice sector agencies)
- Fiscal costs accruing to other public sector agencies as a consequence of crime (e.g. health sector costs and benefit fraud)
- Direct economic and social costs accruing to the private sector (individuals, households, businesses, and institutions) as survivors or potential survivors. These costs include preventative measures, intangible costs, lost property, and the opportunity cost of lost output.

Translating to current dollars, the private cost of a sexual offence is estimated at $167,000 per incident, with over 70% of this cost being borne by the survivor. The cost of a drug offence is about $13,400 and is largely borne by the public sector.[29] Note that the study did not consider indirect or second-order costs of crime.

24 Oranga Tamariki Budget 2020 at a glance. Viewed at https://www.orangatamariki.govt.nz/about-us/news/budget-2020-at-a-glance/ on 20 August 2020.

25 (New Zealand Government, 2019)

26 (Ministry of Social Development and Ministry of Justice, 2002)

27 (New Zealand Government, 2019)

28 (Roper & Thompson, 2006)

29 (The Treasury, 2019)

Commercial In Confidence

Vote Social Development

Social development covers a wide area and has a significant budget of over $41 billion in 2019/2020.[30] There are several areas of activity relating to child maltreatment including:

- $3.15 million for the Children's Commissioner
- $162 million for Community Support Services
- $91 million for Supporting survivors and Perpetrators of Family and Sexual Violence
- $28 million for Delivering Youth Development.

There are also likely to be higher welfare payment costs for survivors of child maltreatment, (such as unemployment benefits, sickness benefits, sole parent benefits and supported living costs) as survivors of maltreatment are more likely to be unemployed or underemployed.

Volunteer services

Volunteers and non-government organisations are also involved in supporting survivors of child maltreatment. These costs are not captured in any of the cost of abuse studies reviewed.

Deadweight costs

Most studies include deadweight costs. These costs are related to delivering state agency services and reflect the inefficiencies in collecting taxes and adverse welfare effects.

There are additional costs where the funds come from taxation. Taxes encourage people to move away from things that are taxed and toward things that are not taxed or more lightly taxed. Their consumption choices are distorted away from what they would prefer in the absence of taxes. The change in the mix of consumption has an adverse welfare effect, which is additional to the loss of welfare resulting directly from the loss of money that is taken away in the form of tax. This welfare loss is referred to as the deadweight cost of taxation. For example, income tax on capital income tends to discourage investment and saving in favour of immediate consumption.[31]

Accounting for deadweight costs is consistent with the approach to social cost benefit analysis prepared by the New Zealand Treasury, which suggests that CBAs should include a deadweight cost of taxation, equal to 20% of project costs that are funded from general taxation.[32].

Productivity

Productivity costs to society are the result of poorer employment and earnings outcomes resulting from lower than average levels of education.

30 (New Zealand Government, 2020)

31 (The Treasury, 2015, p. 15)

32 (The Treasury, 2015)

One study[33] found that a male with a year 12 education earns around 13% more and a female earns 10% more than a person with a year 11 education or less on average. Another study[34] found that a survivor of violence as a child or young person is 14% less likely to be in employment.[35]

The average annual income in New Zealand is $51,200[36] whereas the average annual income of a person with a lower secondary school qualification is $42,500, about 20% more.

3.1.2 Non-financial costs

As well as the financial costs to society and the individual from child maltreatment, there are non-financial costs. Non-financial costs include personal pain and suffering and loss of life.

Personal pain and suffering is the main non-financial cost. However, there is also a social cost in cases where the abuse results in loss of life either immediately in the act of abuse, or indirectly through the taking of one's own life.

Personal pain and suffering

Personal pain and suffering is a cost borne by the survivor, who has a reduced quality of life as a result of being maltreated. This pain and suffering is incurred throughout the survivor's life and, in many cases does not decline over time.

Studies that incorporate personal pain and suffering tend to apply an approach that determines the survivor's Disability Adjusted Life Years (DALY)[37], or the Quality Adjusted Life Years (QALY) which is a measure of disease burden, including both the quality and quantity of life lived. DALYs for a number of diseases can be determined from Global Burden of Disease country files collected by the Institute of Health Metrics and Evaluation.[38]

Value of a Statistical Life Year (VSLY) is also used as a measure of the cost of a life year and is derived from the Value of a Statistical Life (VOSL). The VSLY is applied to QALYs to calculate the impacts of the cost of pain and suffering where the quality and quantity of life has been compromised by abuse.

In New Zealand, the VOSL generally used was developed by the Ministry of Transport. A VOSL is currently estimated to be $4.92 million, a QALY gained at $33,300 and the VSLY at $181,000.[39]

There are questions around whether a value of statistical life determined through a transport study is the same as that resulting from child maltreatment.

33 Forbes et al (2010)
34 (Currie and Widom, 2010)
35 As cited in (Deloitte and Access Economics, 2019)
36 (The Treasury, 2019)
37 The DALY is a summary measure which combines time lost through premature death and time lived in states of less than optimal health, loosely referred to as "disability". One DALY can be thought of as one lost year of 'healthy' life
38 http://www.healthdata.org/gbd
39 (The Treasury, 2019)

Commercial In Confidence

Loss of life

A very small proportion of cases of maltreatment result in immediate loss of life. These are generally identifiable and measurable. However, evidence suggests that a higher proportion of suicides are from individuals who are survivors of maltreatment. One study[40] undertook a meta-analysis of studies into suicide and maltreatment and found that children who experience physical, sexual, and emotional abuse or neglect are at least two to three times more likely to attempt suicide in later life.

Loss of life is generally calculated by using the VOSL. In New Zealand, studies used the VOSL calculated by the Ministry of Transport for the loss of life in a vehicular accident. In the US study[41], a VOSL was calculated specifically for survivors of child abuse, which was calculated to be US$16 million (NZ$25.8 million), which is significantly higher. This perhaps reflects the higher value placed on losing a life through maltreatment versus losing a life in a road accident.

A UK study[42] applied a slightly different approach to loss of life by using health care costs associated with fatal injuries, and lifetime costs of lost productivity. Using this approach, they estimated the cost of a loss of life to be about $2.3 million in 2019 New Zealand dollars. The New Zealand study put the cost of suicide at the level of the VOSL - $4.1 million.

3.2 Prevalence and attribution

Prevalence rates and attribution fractions are needed to determine how many survivors there are, and the impact that maltreatment has on those survivors.

3.2.1 Prevalence

In this context, prevalence refers to the proportion of the population that is affected, i.e. the proportion of children in care that are maltreated.

One approach is to identify the number of victims and survivors through reported activity. Often this is identified when the survivor seeks help or is admitted for health or other support services. Further, secondary datasets (including justice system or child protection data) can be used to identify cases that are not captured.

However, it is recognised that such an approach can result in a significant under-estimate of the prevalence of abuse. This is because of the nature of the act and the harm caused. Abuse and neglect is often difficult to detect and diagnose by others, and it 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.[43] As a result most studies use survey methods to estimate prevalence of abuse and then provide the estimates as a range (low and high). Prevalence also differs based on the setting and

40 (Angelakis, Gillespie, & Panagioti, 2018)

41 (Peterson, Florence, & Klevens, December 2018)

42 (Conti, Morris, Melnychuk, & Pizzo, 2018)

43 (Deloitte and Access Economics, 2019, p. 12)

cohort (e.g. gender and disability). Other factors such as ethnicity and socioeconomic status are also implicated in prevalence rates.

However, even then there are further complications in estimating the prevalence of abuse as definitions often differ across studies. This includes definitions around what constitutes abuse, when the abuse occurred, and the age of a child.

The WHO Global Health Risks report[44] estimates prevalence rates for childhood sexual abuse, measured as the proportion of adults with a history of abuse, at 16%, with males at 10% and females at 22%. Prevalence differs in different regions, with prevalence highest in South-East Asia at 26%. New Zealand is a high income country in the Western Pacific, which has a prevalence rate of 13%. Reporting by UNICEF suggests that New Zealand has one of the worst records of child abuse in the developed world, including the second highest rates of youth suicide and child obesity across EU and OECD countries.[45]

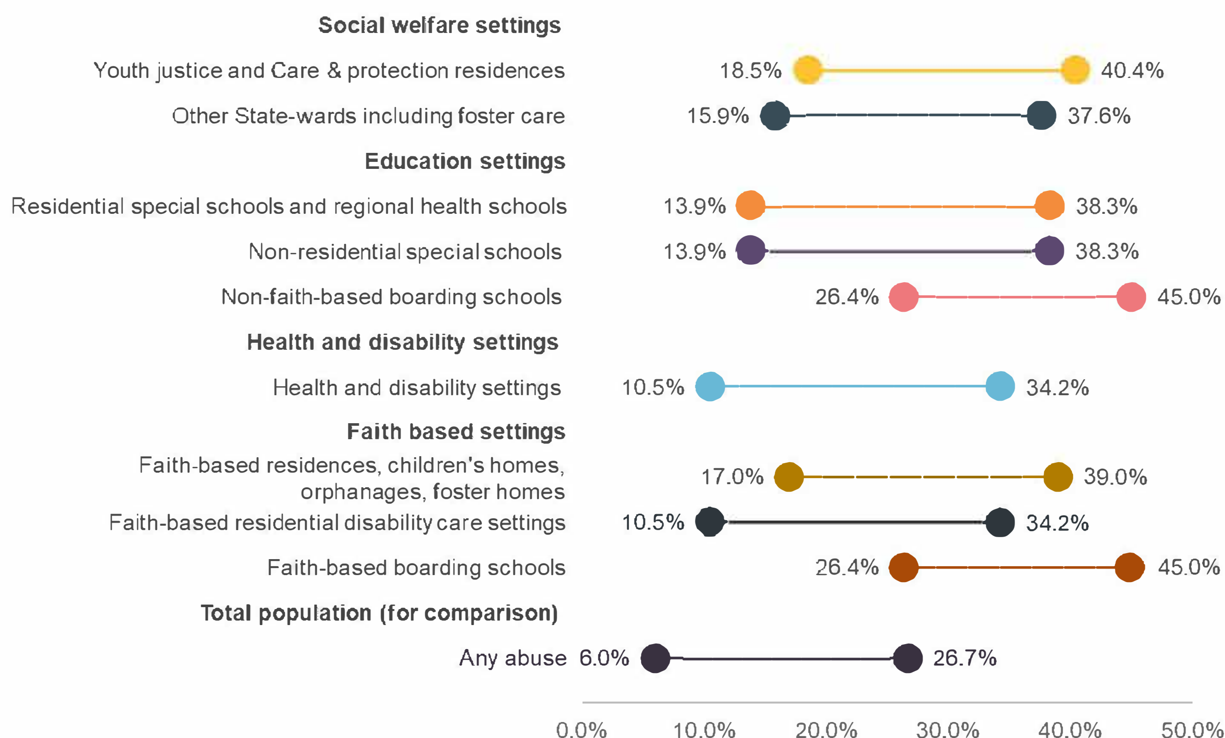
In the case of child abuse in care in New Zealand, the high and low estimates provided in an earlier study commissioned by the Inquiry have been used.[46] In that study, prevalence is derived from a range of available sources and presented as a proportion of all children in care (as opposed to all children in New Zealand). Prevalence rates in care settings, which again were derived from estimates calculated in a number of other studies, range from 10.5% through to 45%. This compares to between 6% and 26.7% for abuse in the New Zealand population. The high and low percentages of the prevalence of abuse in care by care setting used in that earlier study is shown in Figure 1.

44 (World Health Organization, 2009)

45 As noted on https://www.unicef.org.nz/in-new-zealand/safe-childhood. Page was visited on 09 September 2020.

46 (MartinJenkins, 2020)

Figure 1. High and low percentages of the prevalence of abuse in care



Source: (MartinJenkins, 2020)

Prevalence of abuse in care changes depending upon the setting. However, in all abuse in care settings, the high and low estimates of prevalence is higher than for New Zealand as a whole.

A number of limitations were identified in providing prevalence in care settings. These were noted in the study[47] and included:

- Partial gaps in the data
- Sub-settings with no available data
- No data on indirect state care (i.e. through NGOs funded by government).

Partial gaps in the data were filled through extrapolation and interpolation, whereas sub-settings with no data were not included in the analysis. Further, the analysis focused on studies relating to extreme physical abuse or sexual abuse, which does not capture neglect or mental abuse or less severe cases of physical or sexual abuse. Ultimately the report most likely understates the total number of people that make up the Inquiry's State and faith-based settings.

[47] (MartinJenkins, 2020, pp. 14-16)

3.2.2 Attribution

Attribution aims to determine what proportion of survivors are likely to be affected by the outcome or impact. It is the likelihood that the impact or outcome will result from, or is caused by, the activity. Attribution is generally presented as an attributable fraction – the AF.

The AF is generally identified through epidemiological studies to determine how likely a certain illness or disease is caused by the activity – and it is presented in a number of different ways in different studies. Attribution is generally also different for males and females.

(Kahui & Snively, 2014) applied AFs identified through a number of studies in New Zealand and the US. These are shown in Table 3.

Table 3. Health condition AFs used in the Glenn Inquiry report

Health condition	AFs	Source
depression (W)	0.249	Tolman & Rosen (2001) - US
depression (M)	0.017	Fergusson, Horwood & Ridder (2005) - NZ
anxiety (W)	0.103	Tolman & Rosen (2001) - US
physical injury (W)	0.032	Rivara et al (2007) - US
eating disorders (W)	0.199	Danielson et al (1998) - NZ

Source: (Kahui & Snively, 2014). W = women. M = men.

When considering the source of the AF, it is important to note when and where the studies took place. In this case, many (60%) were conducted overseas and some are now more than 20 years old. It would also be useful to understand how the study estimated the AFs. In particular, the difference in female and male AFs for depression is significant – 25% for females compared to 2% for males.

Another study[48] identified different AFs for females and males (Table 4 below). While some are similar (such as depression for women), others are very different (anxiety and depression for men). This difference is likely due to different study methodologies.

Table 4. Health condition AFs identified by Moore et al, 2015

Condition	Male	Female
Self-harm	23.5%	33.0%
anxiety disorders	20.9%	30.6%
depressive disorders	15.7%	22.8%

Source: (Moore, Scott, & Ferrari, 2015)

48 (Moore, Scott, & Ferrari, 2015)

It is therefore important to understand how the AFs were calculated and assess them against other AFs to determine whether they are reasonable. Where the abuse occurred is an important factor. This includes the country and the specific settings where abuse occurred.

3.2.3 Prevalence Attributable Fractions

In some studies, a Prevalence Attributable Fraction (PAF) is estimated. This combines the prevalence and the AF and then applies it to the entire population being considered (i.e. children) to estimate how much of an impact can be assigned to a population resulting from the activity (i.e. child abuse).

For example, the Deloitte study drew on a number of other studies to estimate the prevalence and/or AFs for mental health, physical health, education, crime, and accommodation and then combined them to identify a PAF.

Table 5. Impact PAFs identified by Deloitte Access, 2019

	Impact	Gender	Physical	Sexual	Emotional	Neglect	Source
			Prevalence Attributable Fractions (PAFs)				
Mental health	Anxiety	Male	1.23%	1.99%	2.67%	0.51%	Moore et al. (2015)
		Female	1.66%	5.53%	2.22%	0.69%	
	Depression	Male	1.37%	1.33%	2.22%	0.69%	Moore et al. (2015)
		Female	1.84%	3.70%	2.48%	1.15%	
	Drug abuse	Male	1.84%	2.73%	1.13%	0.49%	Moore et al. (2015)
		Female	2.48%	7.61%	1.27%	0.82%	
	Alcohol abuse	Male	0.47%	1.67%	0.51%	0.09%	Norman et al. (2012), Cutajar et al. (2010)
		Female	0.64%	4.64%	0.57%	0.15%	
	Self-harm	Male	1.77%	1.70%	2.69%	0.72%	Moore et al. (2015)
		Female	2.38%	4.73%	3.01%	1.30%	
Physical health	Assault	Male	0.003%	0.003%			AIHW (2015)
		Female	0.006%	0.006%			
	Gastrointestinal	Male	1.82%	2.09%	2.22%	1.06%	Bradford et al. (2012), Irish et al. (2010), Afifi et al. (2016)
		Female	2.46%	5.83%	2.49%	1.77%	
	Obesity	Male	0.23%	0.23%	0.22%	0.07%	Hemmingson et al. (2014), Norman et al. (2012), Danese and Tan (2014)
		Female	0.31%	0.64%	0.25%	0.12%	
	Chronic pain	Male	0.67%	0.68%	0.80%	0.42%	Afifi et al. (2016), Herrenkohl et al. (2013), Norman et al. (2012)
		Female	0.90%	1.89%	0.90%	0.70%	
	Risky sexual behaviour	Male	0.02%	0.02%	0.02%	0.01%	Norman et al. (2012)
		Female	0.02%	0.04%	0.02%	0.01%	
Special education		Male	1.82%	1.56%	1.85%	0.88%	Jonson-Reid et al. (2004)
		Female	2.46%	2.07%	1.47%	1.47%	
Crime	Investigation	The estimated proportion of criminal cases estimated to be related to child abuse was 7%					McCarthy et al. (2016)
	Incarceration						
	Prosecution						
	Care and protection orders						
Accomm	Supported accommodation	Male	1.10%	1.10%	1.10%	1.10%	AIHW (2017), AIHW (2011)
		Female					
	Public housing - cost per person	Male	0.06%	0.05%	0.10%	0.04%	AIHW (2014)
		Female	0.08%	0.15%	0.11%	0.07%	

Source: (Deloitte and Access Economics, 2019)

The percentages for PAFs are lower than the AFs as they include prevalence as well. They are a percentage of the entire population rather than a percentage of just those abused.

The mental health figures are supported by a meta-analysis study[49], which identified PAFs for depression and anxiety of 2.03% and 2.70% respectively.

[49] (Li, D'arcy, & Meng, 2016)

3.3 Presentation of costs

3.3.1 Annual vs lifetime costs

Costs can be presented in two ways. Annual cost measures the total cost of people who have been abused in a single year (prevalence). Lifetime cost measures the cost to an individual who has been abused over their lifetime (incidence). Some studies present both sets of costs – annual cost of all abused in a given year regardless of when the incident occurred; and lifetime costs of all new incidents that occurred in a single time period (generally a year).

Annual cost

When estimating the cost of all cases of current and historical abuse in a given year, the study needs to understand the number of new cases or whether the abuse occurred in the past. This is because the costs are different. Some costs, such as short term health costs, are immediate and one off. Other costs such as criminal activity, depression and anxiety occur over the longer term.

Lifetime cost

When applying lifetime costs for new cases in a time period, the costs for each survivor is the same. However, in studies that estimate the lifetime costs, they often apply a discount rate to reflect the lower value of costs incurred in the future. As well, some studies inflate costs incurred, such as health system costs. Further, the length of time that the costs are incurred can differ with different studies.

3.4 Estimating the costs of 'historical' abuse

This project is unique in that it is seeking to consider costs over a historical period (1950 through to 2020). However, costs also accrue into the future from survivors/victims who have been abused in the past. For example, there is a good chance that someone who was abused in care in 1990 and lives to the median life expectancy (78 years for males and 83 years for females) will be alive in 2067 - 37 years from now.

Most studies on the cost of abuse either look at the cost of abuse in the current year (prevalence based) or the lifetime cost of abuse (future costs) for individuals abused in a current year (incidence based).

No studies were identified that looked at the cost of impacts over a defined historical period (greater than a year).

Attempting to capture the historical cost of impacts over a long time period ,50-70 years, raises a number of challenges and factors and potentially requires new approaches that need to be considered.

Change in social and cultural norms

Over time social and cultural norms have changed. These are both perceived, but also manifest in a number of ways that make capturing costs over different periods difficult.

A simple example is around women in employment. Current costs assume losses in productivity as a result of abuse. In the 1950s, a much greater proportion of women were not in the labour force, especially those with children, and participation for men was much higher.[50] Further, there was a greater disparity between female and male incomes. As a result, the costs associated with lost productivity calculated in the current environment may not hold in earlier years.

Another example is the impact associated with physical abuse. Prevalence is expected to be significantly higher in earlier years when corporal punishment was allowed. Changes in attitudes toward violence and what constituted physical abuse, may affect how it would influence individuals and therefore associated impacts and costs.

For our high-level estimate, no allowances have been made for changes in social and cultural norms over time.

Prices

There are a number of issues around presenting costs over a period of time. These include the impacts of inflation and how to account for historical costs and revenues.

A good example of this is the Value of Statistical Life. When it was first calculated in 1991, the value was estimated at $3.1 million. In 2019, the Value of Statistical Life has increase to closer to $5.0 million. The perception of the value of life has not changed but rather the value has been inflation adjusted.

Similarly, prices for certain activities have changed due to technology or innovation.

Looking at future costs, most studies that estimate lifetime costs apply a discount rate to reflect the lower current value of future costs, which is different from accounting for inflation. Some studies also include inflation to reflect increasing costs. This allows them to present future costs in current dollars. You would not do the same for historical costs over a long period of time. As an example, $100 cost in 1950 would be equivalent to over $3,600 now. Aggregating costs over a number of years, both in the past and in the future, makes it difficult to account for inflation.

For our high-level estimate, the costs associated with child maltreatment are the same for every year. 2019 prices and the same discount rates have been applied to all historical years.

Levels and type of activity

Costs for different activities will have changed over time. Both as a result of the level of activity, but also from the types of activities and the approaches to delivering services that would have been undertaken. This would be across most aspects of the cost analysis, from health costs – where depression, for example, would not have been treated to the same degree, to administration costs – where significantly more is being spent on youth services.

[50] In 1961, full-time participation by women was 31.8%, compared to 91.3% for men. In 2020, the participation rate for women was above 65%, while for men it had dropped to about 75%.

In other areas, such as youth crime, there have been major changes both as a result of the way youth crime is dealt with, but also the prevalence of youth criminal behaviour. For example, the overall offending rate for children fell 55% between 2010 and 2018, from 208 per 10,000 to 93 per 10,000.[51]

Different impacts also arise in taxation, where changes in the tax system, more efficient delivery of government services, and an improved ability to collect taxes, would all impact the deadweight loss calculations.

These factors are generally not considered when calculating future lifetime costs. However, they are generally accounted for when costs in past years are calculated. However, it is not feasible (resource wise) to be able to determine all historical changes in activity and costs to be able to include them in historical estimates.

For our high-level estimate, the type of activity associated with, and the level of impact incurred, is assumed to be the same in every year.

3.5 Costs identified in other studies

Several studies have attempted to measure the costs of abuse and neglect at a country level. To provide context the estimated costs have been compared to the size of the economy, or GDP.

Care needs to be taken when comparing costs of abuse across studies as they have different populations and demographic profiles, measure different impacts, occur in different years, and are in different currencies.

3.5.1 New Zealand

There are two studies on the cost of child abuse in New Zealand. Both drew heavily on other international studies for the costs applied in their analyses. As well, the Glenn Inquiry had a strong focus on domestic abuse, which tended to skew the approach and costs; and did not estimate lifetime costs. Therefore, neither of these studies was the most suitable to use as the basis for calculating the high-level estimate of abuse in care.

Infometrics, 2008

This study presented three estimates of the cost of abuse in 2008. The first estimate was based on the government costs associated with dealing with child abuse. Going through the budget, Infometrics identified $451 million of costs associated with care and protection services for children and young people in the 2008/2009 fiscal year (0.3% of GDP).

This is not a useful measure in that it only covers costs to government and only during the survivor's youth (i.e. it does not consider health costs, long term costs, productivity losses or personal pain and suffering costs).

[51] (Ministry of Justice, 2019)

The next two estimates were based on an Australian and a US study[52] and applied them to the New Zealand population (accounting for exchange rates and inflation). These estimates assumed the same prevalence of child abuse in the study country and New Zealand, which is unlikely to be the case considering that as a country New Zealand ranks as one of the highest abusers of their own children.[53]

The Keatsdale study incorporated human costs, long-term human and social costs, costs of public intervention and costs of community intervention. Translating these costs into New Zealand terms suggested costs of between NZ$1.1 billion and NZ$2.0 billion in 2008 (between 0.8% and 1.5% of GDP).

The Wang and Holton study included direct costs (hospitalisation, mental health care costs, child welfare, and law enforcement services), lost future productivity, future criminal costs, and ongoing special education, juvenile delinquency, and health care costs. Again, translating these costs to New Zealand terms suggested a cost of child abuse and neglect of NZ$1.9 billion (1.4% of GDP).

Again, there is limited value in replicating this work as both studies used to estimate New Zealand costs have been superseded by more recent analyses.[54]

Kahui and Snively, 2014

This study was undertaken as part of the Glenn Inquiry into domestic violence and child abuse and as such, was very much focused on domestic violence. The study applied cost and attributable fractions used in an Australian study[55] that was also very much focused on domestic violence. As a result, there was limited discussion and information on child abuse. Further, the study also only estimated an annual cost rather than lifetime costs.

The study calculated that the cost of child abuse in 2014 was between $919 million and $1.14 billion (0.4% and 0.5% of GDP) whereas total cost of child abuse and intimate partner violence was estimated at between $4.1 billion and $7.0 billion. Under the high scenario, the cost of child abuse was estimated at $4,033 for each survivor, which appears low when comparing to other studies.

Applying the cost per survivor to the 2019 estimates of survivors of abuse in care and presenting in 2019 New Zealand dollars suggests a cost of abuse in care of between $471 million and $1.06 billion.

3.5.2 International

A number of studies have also been undertaken internationally. In the US the economic burden of lifetime costs of abuse in 2015 was estimated at between US$428 billion and US$2 trillion (2.4% to 11% of GDP).[56] In Australia, the annual cost of abuse in 2017 was estimated to be AU$34.2 billion and

52 (Keatsdale PTY Ltd Management Consultants, 2003)and (Wang & Holton, 2007)

53 According to UNICEF New Zealand ranks 35th)out of 41 OECD and EU countries) in child wellbeing outcomes and has the second highest rate of youth suicide and obesity..

54 ((Deloitte and Access Economics, 2019) in Australia and (Peterson, Florence, & Klevens, December 2018) in the US).

55 (Access Economics, 2004)

56 , (Peterson, Florence, & Klevens, December 2018)

lifetime costs of abuse was estimated to be AU$78.4 billion in 2017 (1.9% and 4.3% of GDP respectively).[57]

At a cross-country level, a meta-analysis of country studies.[58] estimated annual costs attributable to adverse childhood experiences of US$581 billion in Europe and US$748 billion in North America. The study only counted the cost to address impacts of survivors of abuse and not the costs to the economy from lost productivity or the intangible cost to the individual for pain and suffering.

3.5.3 Lifetime costs (incidence) studies

Taking several of these country studies and presenting them as a cost per survivor in current New Zealand dollars allows us to compare and contrast them. The majority of recent studies tend to estimate the lifetime costs for a survivor of abuse in a particular year. These studies estimate the costs incurred by the individual and society over the life of that individual from the initial period when the abuse occurred. With child abuse occurring early in life, the impacts of abuse accumulate over a long period of time.

Table 6. Summary of cost of abuse studies (lifetime costs in New Zealand dollars)

Cost of abuse (Lifetime)	Conti (UK)		Peterson (US)		Deloitte Access (AUS)	
	per survivor	%	per survivor	%	per survivor	%
Financial						
• health	63,093	*29%*	72,201	*5%*	61,607	*6%*
• administrative	120,916	*55%*	37,922	*3%*	83,496	*8%*
• productivity	34,278	*16%*	224,134	*15%*	21,463	*2%*
• deadweight	0	*0%*	0	*0%*	36,345	*4%*
	218,287	***100%***	**334,257**	***22%***	**202,912**	***21%***
Non-financial						
• pain and suffering	0	*0%*	1,179,980	*78%*	783,187	*79%*
Total lifetime costs	**218,287**	***100%***	**1,514,237**	***100%***	**986,099**	***100%***

Source: (Conti, Morris, Melnychuk, & Pizzo, 2018), (Peterson, Florence, & Klevens, December 2018), and (Deloitte and Access Economics, 2019) converted to 2019 NZ$

The costs per survivor were highest in the US at NZ$1.51 million compared to NZ$986 million in the Australian study and NZ$218,000 in the UK study. The US and Australian studies had similar ratios for pain and suffering (non-financial cost), whereas the UK study did not consider emotional pain and suffering in their calculations.

57 , (Deloitte and Access Economics, 2019)

58 (Bellis, et al., 2020)

There was a similar total financial cost of between $203,000 and $218,000 for the Australian and UK studies respectively, whereas the $334,000 cost in the US study was about 60% higher. When considering the breakdown of financial costs, the UK and Australian studies had similar shares in health, administrative and productivity. In the US study, two-thirds of financial costs resulted from lost productivity.

4 ESTIMATING THE COSTS OF ABUSE IN CARE IN NEW ZEALAND

The most relevant cost of abuse studies were reviewed to determine whether their methods and costs could be applied to estimate the cost of abuse in care in New Zealand. This included New Zealand and international studies.

While a number of costs of abuse studies have been reviewed, the high-level estimate of cost of abuse in care is primarily based on one study by Deloitte Access.

This approach has been taken for a number of reasons.

- The methodology and assumptions for calculating costs differs across studies. This makes it difficult to incorporate costs for different impacts identified through other studies. Choosing one study and applying those estimates also avoids double counting or duplication of costs.
- The methodology applied in the Deloitte Access study is robust and largely consistent with that applied in other studies and draws on the most recent information on impacts and costs.
- The Deloitte Access study is the most recent focused on child abuse[59] that provides both annual and lifetime costs at a level of detail that is useful for providing an informative breakdown of impact areas as discussed above.
- While there are differences, the Australian culture, economy, and institutions have closer similarities to New Zealand than other countries.

In saying that, the Deloitte Access study has a slightly broader definition, which includes violence against young people (18-24 years). It also reflects child abuse in general and so will not reflect the likely greater impacts of abuse in care.

In estimating historical costs, any changes in economic and social structures have not been considered. All prices are presented in 2019 New Zealand dollars.

4.1 Prevalence

The MartinJenkins report[60] defined abuse as serious physical and or sexual abuse. In particular, the estimates:

- do not attempt to quantify abuse that was within legal and social norms at the time, for example, the use of corporal punishment in schools when this was lawful.
- are concentrated on sexual abuse and 'severe' physical abuse.

59 The study also looks at violence against young people (18-24 years).

60 (MartinJenkins, 2020)

The scope of abuse and neglect relevant to the Inquiry is broader, therefore this prevalence figure is likely to be an underestimate.

The number of survivors of abuse in state and faith-based care settings were estimated by MartinJenkins from 1950 to 2019 [61]. The report estimated the number of people in care and then the number of people abused in care.

The primary estimation methodology used a top-down approach, based on applying prevalence rates from New Zealand and overseas studies to the estimate of the numbers of people who had passed through the institutional care settings. They also apply a bottom-up approach.

The top-down approach starts with an estimate of the number of people in State and faith-based care (in a range of settings) between 1950 and the present day – 'the Cohort' – and uses data on the prevalence of abuse (from New Zealand and international studies) to estimate the percentages of the Cohort who may have been abused.

The 'bottom-up' approach starts with the number of people in State and faith-based care (in a range of settings) between 1950-present who have identified that they have been abused in care by making formal claims – the 'known' claimants of abuse.[62] The additional 'suspected' survivors of abuse are then estimated using assumptions around the proportion of crime that goes unreported in New Zealand. The unreported crime rates are used as a proxy for the level of unreported abuse in care.

There were partial gaps in the data for some of the care settings that have been filled through extrapolation and interpolation. Further, there were some setting where information was not available, such as indirect state care, which have not been included in the estimates. As a result, the report most likely understates the total number of people that make up the Commission's State and faith-based settings.

The following two tables show the number of people in care, and the high and low estimates of survivors of abuse, between 1950 and 2019, broken down into ten-year cohorts.

[61] (MartinJenkins, 2020)

[62] While not all claims of abuse have been substantiated to a legal standard of proof, we are satisfied that the effort needed to make and follow through with a formal claim is sufficient evidence that the person should be treated as a known survivor for the purposes of our work. Further, a significant number of the claimants have already been successful in actions against the Crown (where they have received monetary compensation).

Table 7. Summary of cohort sizes within State and faith-based care settings, 1950 to 2019 (after removing estimated overlaps between settings)

Numbers of people in care (cohorts)	Total	1950-1999	2000-2019	1950s	1960s	1970s	1980s	1990s	2000s	2010s
Total Social Welfare	**204,466**	**141,524**	**62,942**	13,692	20,127	44,266	40,907	22,532	30,620	32,322
Total Education	**80,763**	**60,131**	**20,632**	11,970	11,949	12,015	12,101	12,096	9,976	10,656
Total Health and Disability	**167,865**	**145,526**	**22,340**	15,215	33,018	31,787	31,929	33,577	10,826	11,514
Total Faith-based	**201,767**	**162,952**	**38,815**	42,392	33,252	34,433	30,299	22,577	19,091	19,725
Total cohorts across all identified settings	**654,861**	**510,132**	**144,729**	**83,268**	**98,346**	**122,500**	**115,235**	**90,782**	**70,512**	**74,217**

Totals may not add due to rounding. See below for the methodology behind the overlap adjustment.

Source: (MartinJenkins, 2020)

Table 8. Estimated numbers of survivors of abuse in State and faith-based care, 1950 to 2019 (showing the low and high end of the ranges of abuse)

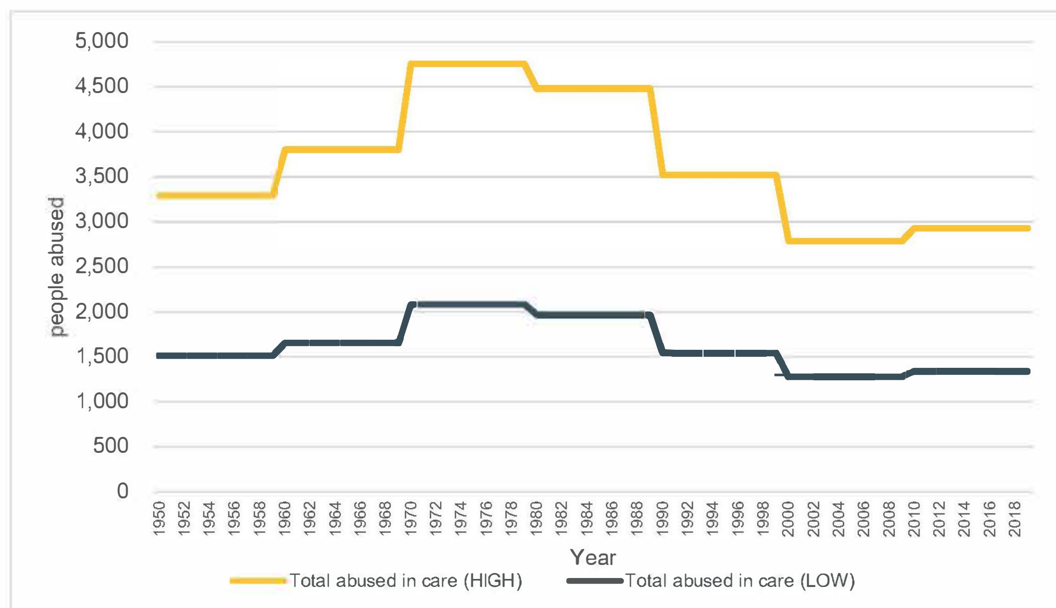
Number of people suspected to have been abused	Total	1950-1999	2000-2019	1950s	1960s	1970s	1980s	1990s	2000s	2010s
Total Social Welfare (LOW)	**34,373**	**23,834**	**10,539**	2,195	3,299	7,484	6,999	3,857	5,137	5,402
Total Education (LOW)	**19,471**	**14,728**	**4,743**	2,938	2,935	2,944	2,956	2,955	2,317	2,426
Total Health and Disability (LOW)	**17,570**	**15,232**	**2,338**	1,592	3,456	3,327	3,342	3,514	1,133	1,205
Total Faith-based (LOW)	**42,342**	**33,787**	**8,555**	8,417	6,862	7,065	6,370	5,073	4,194	4,361
Total number of people suspected to have been abused (LOW)	**113,757**	**87,580**	**26,176**	**15,142**	**16,552**	**20,820**	**19,667**	**15,399**	**12,781**	**13,395**
Total Social Welfare (HIGH)	**79,008**	**54,730**	**24,278**	5,179	7,689	17,149	15,935	8,779	11,821	12,457
Total Education (HIGH)	**35,359**	**26,449**	**8,910**	5,268	5,260	5,285	5,319	5,317	4,321	4,589
Total Health and Disability (HIGH)	**57,438**	**49,794**	**7,644**	5,206	11,298	10,876	10,925	11,489	3,704	3,940
Total Faith-based (HIGH)	**83,841**	**67,450**	**16,391**	17,310	13,743	14,205	12,597	9,595	8,053	8,338
Total number of people suspected to have been abused (HIGH)	**255,646**	**198,424**	**57,223**	**32,963**	**37,989**	**47,516**	**44,776**	**35,179**	**27,899**	**29,324**

Totals may not add due to rounding. Source: (MartinJenkins, 2020)

As shown in Table 8, the estimated total survivors of abuse in care between 1950 and 2019 range from 114,000 to 256,000 or from 1,630 to 3,650 survivors on average each year. The number of individuals abused peaked in the 1970s and 1980s.

The number of survivors of abuse in care for each year is presented in Figure 2 for both the high and low estimates.

Figure 2. Survivors of abuse in care, high and low estimates, 1950-2019



Source: MartinJenkins

4.2 Cost of abuse in care in New Zealand

Applying the number of survivors of abuse in care (high and low) to the lifetime costs per victim derived from the Deloitte's study, the high level cost of abuse in care in New Zealand can be estimated. All costs are presented to three significant figures.

4.2.1 Approach

The lifetime estimates per individual abused in the Deloitte study were identified and then translated to New Zealand 2019 dollars.[63]

As noted earlier, some costs in the Deloitte study were revised where it was practicable and improved the analysis; and where New Zealand information was available. This included:

- deadweight costs were revised to 20% (from 28.75%) to be consistent with the New Zealand Treasury guidelines[64]
- productivity costs were revised to reflect New Zealand average annual earnings, which are about 32% lower than Australian average earnings

63 The exchange rate adjustment (AU$ to NZ$) was 1.0473, which was the exchange rate difference on 30 June 2017. The inflation adjustment was 1.0351 which is CPI inflation between June 2017 and June 2019.

64 (The Treasury, 2016)

- pain and suffering costs were revised to reflect the New Zealand VOSL, which was updated from the Treasury CBAx tool.[65]

High-level estimates for annual and lifetime costs, broken down by cost area, are shown in Table 9 below.

Table 9. Costs per individual applied in high-level estimates

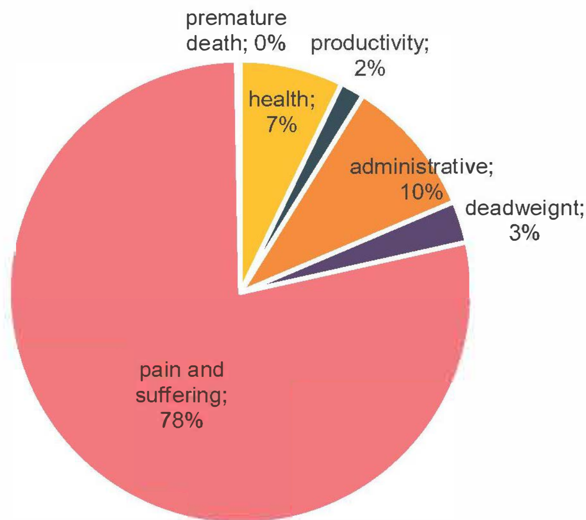
	Lifetime	
Health costs	$61,607	
Productivity costs	$14,401	
Administrative costs – made up of:	$83,496	
- State services relating to the abuse of children		*$81,535*
- Court costs		*$565*
- Special education costs		*$179*
- Public housing		*$1,217*
Deadweight costs	$24,875	
Financial costs	**$184,379**	
Pain and suffering	$670,328	
Premature death	$2,453	
Non-financial cost	**$672,781**	
Total costs	**$857,160**	

Source: derived from (Deloitte and Access Economics, 2019)
A full breakdown of the impacts included, and how the Deloitte study calculated costs are shown in Appendix 1

Figure 3 below shows each cost areas share of total cost.

65 (The Treasury, 2019)

Figure 3. Breakdown of costs



Source: derived from (Deloitte and Access Economics, 2019)

Non-financial costs account for the largest proportion of costs, accounting for about two-thirds of annual costs and almost 80% of lifetime costs. As noted, these costs are largely the pain and suffering borne by the survivor of abuse and reflect the impacts on reduced quality of life.

Administrative costs are the second largest area, accounting for almost 20% of annual costs, and 10% of lifetime costs. Health costs account for 6% of annual costs and 7% of lifetime costs. Deadweight costs reflect health and administrative costs.

The lifetime costs approach estimates the total cost of abuse over the lifetime of new survivors of abuse in that year.

Table 10. High level estimate of cost of abuse in care

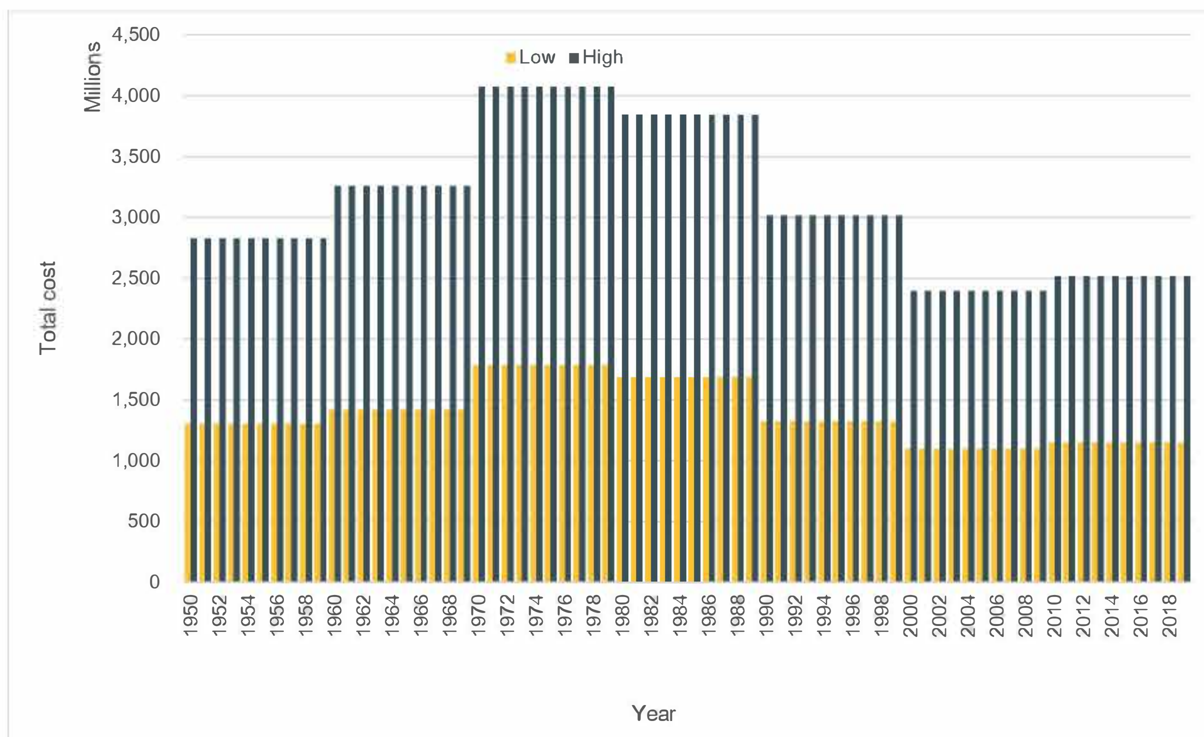
		2019	1950-1999	2000-2019	1950-2019
			$m		
Low	Health Costs	83	5,396	1,613	7,008
	Productivity Costs	19	1,261	377	1,638
	Administrative Costs	112	7,313	2,186	9,498
	Deadweight Costs	33	2,179	651	2,830
	Financial	**247**	**16,148**	**4,826**	**20,974**
		0	0	0	0
	Pain and Suffering	898	58,707	17,546	76,253
	Premature Death	3	215	64	279
	Non-financial	**901**	**58,922**	**17,610**	**76,532**
	Total Cost	**1,148**	**75,070**	**22,436**	**97,506**
High	Health Costs	181	12,224	3,525	15,750
	Productivity Costs	42	2,857	824	3,682
	Administrative Costs	245	16,568	4,778	21,346
	Deadweight Costs	73	4,936	1,423	6,359
	Financial	**541**	**36,585**	**10,551**	**47,136**
	Pain and Suffering	1,966	133,009	38,358	171,367
	Premature Death	7	487	140	627
	non-Financial	**1,973**	**133,496**	**38,499**	**171,994**
	Total Cost	**2,514**	**170,081**	**49,049**	**219,130**

Source: MartinJenkins

Applying the lifetime cost of $857,000 to the number of individuals first identified as abused in care in 2019 (1,339 and 2,932) suggests a total cost of between $1.15 billion and $2.51 billion. This is equivalent to between 0.4% and 0.8% of New Zealand GDP. This appears plausible considering earlier studies.

Applying the 2019 costs to all survivors over the period 1950 to 2019 (114,000 and 256,000) results in a total cost of between $97.5 billion and $219 billion. This is an annual average cost of between $1.39 billion and $3.13 billion.

Figure 4. Total costs of abuse, 1950 - 2019



Source: MartinJenkins

The pattern of costs is similar to the pattern of survivors in Figure 2 as the cost calculation is based on the present day costs over the lifetime of all new survivors.

By impact area

The cost analysis can be broken down into the various impact areas. In 2019:

- financial costs range from $247 million to $541 million. Within the financial costs:
  - Health costs range from $83 million to $181 million
  - Productivity costs range from $19 million to $42 million
  - Administrative costs range from $112 million to $245 million.
- Non-financial costs range from $901 million to $1.97 billion.

By care setting

The costs can be broken down across the four care settings as shown in Table 11.

Table 11. Costs of abuse in care by care setting

		2019	1950-1999	2000-2019	1950-2019
			$m		
Low	Social Welfare	463	20,430	9,034	29,463
	Education	208	12,624	4,066	16,690
	Health and Disability	103	13,055	2,004	15,059
	Faith Based	374	28,961	7,333	36,294
	All	**1,148**	**75,070**	**22,436**	**97,506**
High	Social Welfare	1,068	46,913	20,810	67,723
	Education	393	22,671	7,637	30,308
	Health and Disability	338	42,681	6,552	49,234
	Faith Based	715	57,815	14,050	71,865
	All	**2,514**	**170,081**	**49,049**	**219,130**

Source: MartinJenkins

Looking at the 2019 costs by care setting shows costs in:

- Social welfare settings range from $463 million to $1.07 billion
- Education settings range from $208 million to $393 million
- Health and disability settings range from $103 million to $338 million
- Faith-based settings range from $374 million to $715 million.

5 IMPROVING THE ESTIMATE OF THE COSTS OF ABUSE IN CARE

The current high-level estimate is based on an Australian study, which includes attributable fractions from a number of studies and applies them to Australian costs[66]. Because of how the information was aggregated and presented for lifetime costs, impacts in several categories cannot be added or removed. As such, there are a number of areas where the estimate of the costs of abuse in care can be improved such as applying New Zealand costs or including additional costs not captured in the Deloitte study. In saying that, while providing a more robust and defendable estimate, the actual cost may not be significantly different from the current estimates.

New Zealand costs

The greatest improvements would be from identifying and applying New Zealand costs to health and administration (social services). The New Zealand studies reviewed did not identify agency costs specifically to address child abuse or the key health impacts associated with child abuse. Agency appropriations have not been assessed. The analysis only highlights those that are related to abuse. A more robust approach would require a separate piece of work to determine these costs across the agencies.

Health and administration costs are important as they account for 87 percent of lifetime financial costs of abuse. However, when considering non-financial costs, they account for only about a fifth of total costs.

Specific costs of addressing impacts of abuse

The second area would be if there were specific costs that the inquiry might want to understand that are not currently included, or are bundled into, the current high-level estimates. An example is lost tax earnings and transfer payments, which do not appear to have not been captured in the study methodology.

Sensitivity analysis

The range is currently based on the high and low prevalence identified through an earlier study for the Inquiry. These rates were estimates based on available data and more work in the area could improve the estimates.

Providing some sensitivity analysis around the average cost would only provide a wider range and improve the validity of the analysis. However, a wider range is not necessarily useful from a policy perspective.

66 Although some of these are replaced with New Zealand costs where applicable.

Historical costs

The accuracy of the estimates reduces as we move further away from the current year. This is due to different economic and cost structures and social/cultural norms. More work could be done to differentiate the time periods to reflect changes in behaviour and costs. For example, the percentage applied to deadweight losses may be higher in earlier time periods due to inefficiencies in collecting or investing tax revenues.

More detail on the survivors of abuse

The analysis does not differentiate in terms of gender or ethnicity. It is acknowledged that prevalence and impacts of abuse are different depending on gender and ethnicity.

Gender

Child abuse prevalence and attributable fractions are different for males and females. Understanding the split and incorporating it into the analysis would result in a more robust estimate. This would also improve the estimate for historical costs as factors such as workforce participation rates for women can be incorporated into the analysis.

Ethnicity

Child abuse prevalence and impacts are different (generally higher) for Māori. Māori were relatively more likely to be put into State care. The research into impacts of abuse in care identified increased trauma for Māori children, cultural deprivation and lost knowledge of whakapapa and identity.[67]

67 (Abuse in Care Royal Commission of Inquiry Research Team, 2020)

6 REFERENCES

Abuse in Care Royal Commission of Inquiry Research Team. (2020). *Research brief: Impact of abuse in care*. Wellington: Royal Commisison of Inquiry into abuse in care.

Access Economics. (2004). *The Cost of Domestic Violence to the Australian Economy*. A report prepared for the Australian Government's Office of the Status of Women.

Accident Compensation Corporation. (2019). *Service Agreement 2019/20*. Wellington: Accident Compensation Corporation.

Angelakis, I., Gillespie, E., & Panagioti, M. (2018). Childhood maltreatment and adult suicidality: A comprehensive systematic review with meta-analysis. *Psychological Medicine vol 49 (7)*.

Barnes, R., & Josefowitz, N. (2014). Forensic assessment of adults reporting childhood sexualised assault: Risk, resilience, and impacts. *Psychological Injury and Law*.

Bellis, M., Hughes, K., Ford, K., Rodriguez, G. R., Sethi, D., & Passmore, J. (2020). *Life course health consequences and associated annual costs of adverse childhood experiences across Europe and North America*. World Health Organization Collaborating Centre on Investment for Health and Wellbeing.

Blakemore, T., Herbert, J., Arney, F., & Parkinson, S. (2017). The impacts of institutional child sexual abuse: A rapid review of the evidence. *Child Abuse & Neglect*.

Conti, G., Morris, S., Melnychuk, M., & Pizzo, E. (2018). *The economic costs of child maltreatment in the UK. A preliminary study*. University College London.

Deloitte and Access Economics. (2019). *The economic cost of violence against children and young people*. A report proeared for Advocate for Children and Young People.

Department of Internal Affairs. (2018). *Royal Commission of Inquiry into Historical Abuse in State Care and in the Care of Faith-Based Institutions Order 2018*. Wellington: Gazette: 12 November 2018.

Fisher, C., Goldsmith, A., Hurcombe, R., & Soares, C. (2017). *The impacts of child sexual abuse: A rapid evidence assessment*. Independent Inquiry into Child Sexual Abuse.

Infometrics. (2008). *The nature of economic costs from child abuse and neglect in New Zealand*. Wellington: A report prepared for Every Child Counts.

Kahui, S., & Snively, S. (2014). *Measuring the economic costs of child abuse and intimate partner violence to New Zealand*. A project commissioned by the Glenn Inquiry.

Keatsdale PTY Ltd Management Consultants. (2003). *Report into the cost of child abuse and neglect in Australia*. Albion, Queensland: Report prepared for Queensland Kids First Foundation.

Li, M., D'arcy, C., & Meng, X. (2016). Maltreatment in Childhood substantially increases the risk of adult depression and anxiety in prospective cohort studies: systematic review, meta-analysis and proportional attributable fractions. *Cambridge University Press, Volume 46, Issue 4*, 717-730.

Commercial In Confidence

MartinJenkins. (2020). *Analysis of size of cohorts*. Wellington: Report commissioned by the Royal Commission of Inquiry into Historical Abuse in State Care and in the Care of Faith-based Institutions.

McCarthy, M., Taylor, P., Norman, R., Pezzullo, L., Tucci, J., & Godard, C. (December 2016). The lifetime economic and social costs of child maltreatment in Australia. *Children and Youth Services Review*, 217-226.

Ministry of Justice. (2019). *Youth Justice Indicators Summary Report August 2019*. Wellington: Ministry of Justice.

Ministry of Social Development and Ministry of Justice. (2002). *Youth Offending Strategy Preventing and reducing offending and re-offending by children and young people*. Wellington: Ministry of Social Development and Ministry of Justice.

Moore, S. E., Scott, J., & Ferrari, A. (2015). Burden attributable to child maltreatment in Australia. *Child Abuse and Neglect, Volume 48*, 208-220.

New Zealand Government. (2019). *Vote Justice: Supplementary Estimates of Appropriations 2019/2020*. Wellington: New Zealand Government.

New Zealand Government. (2019). *Vote Oranga Tamariki: Supplementary Estimates of Appropriations 2019/2020*. Wellington: New Zealand Government.

New Zealand Government. (2019). *Vote Police: Supplementary Estimates of Appropriations 2019/2020*. Wellington: New Zealand Government.

New Zealand Government. (2020). *Vote Health: Estimates of Appropriations 2020/21*. Wellington: New Zealand Government.

New Zealand Government. (2020). *Vote Social Development: Supplementary Estimates of Appropriations 2019/2020*. Wellington: New Zealand Government.

Peterson, C., Florence, C., & Klevens, J. (December 2018, December). The economic burden of child maltreatment in the US. *Child Abuse and Neglect*, 178-183.

Roper, T., & Thompson, A. (2006). *Estimating the costs of crime in New Zealand in 2003/04*. Wellington: The Treasury.

Saied-Tessier, A. (2014). *Estimating the costs of child sexual abuse in the UK*. NSPCC.

The Treasury. (2015). *Guide to Social Cost Benefit Analysis*. Wellington: New Zealand Government.

The Treasury. (2016). *Guide to Social Cost Benefit Analysis*. Wellington: The Treasury.

The Treasury. (2019). *CBAx tool*. Wellington: The Treasury.

UNICEF. (2020). *For every child, reimagine UNICEF Annual Report 2019*. New York: UNICEF.

Wang, C.-T., & Holton, J. (2007). *Total Estimated Cost of Child Abuse and Neglect in the United States*. Chicago, Illinois: A report prepared for Prevent Child Abuse America.

World Health Organization. (2009). *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva: World Health Organization.

APPENDIX 1: DELOITTE ACCESS STUDY METHODOLOGY

Quantified impacts

Outcome area	Impact	Costs	Approach
Health	**Mental health** – depression, anxiety, alcohol abuse, drug abuse and self-harm	*Health system costs* associated with treating injuries directly and long-term costs of mental and physical illnesses experienced by those abused as a child or young person	Expenditure was calculated by applying the proportion of health expenditure on the health conditions to the most recent health expenditure data and inflating to the current year.
	Physical health – 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))	*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 abuse experienced	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)
Education attainment	Lower educational attainment and the need for additional education support	*Education costs* associated with potentially poorer educational achievement leading to additional assistance required at school; *Productivity losses* due to poorer employment and earnings outcomes resulting from lower than average rates of completing year 12 and tertiary education	Costs were identified and applied from ages 5 to 17 years
Crime	Legal orders immediately following the abuse, juvenile delinquency, adult criminality, and re-victimisation in adulthood	*Justice system costs* – costs of care and protection orders and the costs of the child protection system.	Estimated proportion of criminal cases estimated to be related to child abuse was 7%. Care and protection orders – 85%
Accommodation	Unstable living conditions	*Housing and homelessness costs* – costs of supported accommodation and public housing	Expenditure on supported accommodation funding was identified

Outcome area	Impact	Costs	Approach
Child protection services	Child protection system costs	Child protection and intensive family support; family support services; Outside-of-home-care; Aftercare	Cost of services were identified. For child protection and family support services, lifetime costs were the same as for annual costs. For outside-of-home-care and aftercare, lifetime costs were projected forward to represent the average length of stay in care (12.6 years) and 7 years for aftercare.
Productivity	Average annual earnings; likelihood of employment	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. (Forbes etal (2010) victim of violence as a child or young person is 14% less likely to be in employment. (Currie and Widom (2010)	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).
Deadweight losses	Costs associated with taxation and delivery of government services.	28.75%	*Deadweight losses* associated with additional government expenditures and taxation revenue foregone attributable to child abuse
Quality of Life	Burden of disease: anxiety, depression, self-harm, drug abuse, alcohol abuse, gastrointestinal conditions, obesity, chronic pain, risky sexual behaviour, assault	Value of Statistical Life year was estimated at $194,000 in 2016/17.	Disability Adjusted Life Years multiplied out by the Value of a Statistical Life Year.

Source: (Deloitte and Access Economics, 2019)

Attributing costs

The study used population attributable fractions (PAF) for each risk factor to determine the attribution of a range of conditions and their associated costs to child abuse. Relative risk ratios were obtained from the literature to calculate the PAFs for each of the impacts of child abuse. The PAF was applied to the relevant total cost to determine an annual cost. A unit cost was derived by dividing the annual cost by the number of cases in the year.

	Impact	Gender	Physical	Sexual	Emotional	Neglect	Source
			Prevalence Attributable Fractions (PAFs)				
Mental health	Anxiety	Male	1.23%	1.99%	2.67%	0.51%	Moore et al. (2015)
		Female	1.66%	5.53%	2.22%	0.69%	
	Depression	Male	1.37%	1.33%	2.22%	0.69%	Moore et al. (2015)
		Female	1.84%	3.70%	2.48%	1.15%	
	Drug abuse	Male	1.84%	2.73%	1.13%	0.49%	Moore et al. (2015)
		Female	2.48%	7.61%	1.27%	0.82%	
	Alcohol abuse	Male	0.47%	1.67%	0.51%	0.09%	Norman et al. (2012), Cutajar et al. (2010)
		Female	0.64%	4.64%	0.57%	0.15%	
	Self-harm	Male	1.77%	1.70%	2.69%	0.72%	Moore et al. (2015)
		Female	2.38%	4.73%	3.01%	1.30%	
Physical health	Assault	Male	0.003%	0.003%			AIHW (2015)
		Female	0.006%	0.006%			
	Gastrointestinal	Male	1.82%	2.09%	2.22%	1.06%	Bradford et al. (2012), Irish et al. (2010), Afifi et al. (2016)
		Female	2.46%	5.83%	2.49%	1.77%	
	Obesity	Male	0.23%	0.23%	0.22%	0.07%	Hemmingson et al. (2014), Norman et al. (2012), Danese and Tan (2014)
		Female	0.31%	0.64%	0.25%	0.12%	
	Chronic pain	Male	0.67%	0.68%	0.80%	0.42%	Afifi et al. (2016), Herrenkohl et al. (2013), Norman et al. (2012)
		Female	0.90%	1.89%	0.90%	0.70%	
	Risky sexual behaviour	Male	0.02%	0.02%	0.02%	0.01%	Norman et al. (2012)
		Female	0.02%	0.04%	0.02%	0.01%	
Education	Special education	Male	1.82%	1.56%	1.85%	0.88%	Jonson-Reid et al. (2004)
		Female	2.46%	2.07%	1.47%	1.47%	

Source: (Deloitte and Access Economics, 2019)

Lifetime costs were calculated by multiplying the unit costs by the number of new cases in the year projected forward by the number of years the costs will be incurred and discounted by 7%. Input costs were also inflated (4.6% for health-related costs and 2.2% for all other costs).

Scope of costs

The following costs are included in the analysis.

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 foregone that is attributable to violence against children and young people.

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 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).