Chapter 4

Childhood conduct problems

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**Summary**

- The seeds of many adolescent difficulties are sown very early in development.
- For example, conduct problems which frequently begin in early childhood often extend over the life course. Conduct problems in childhood and adolescence are relatively common and may afflict up to 10% of the population.
- Conduct problems in childhood (and adolescence), have profound consequences for later development including antisocial behaviour, crime, mental health difficulties, suicidal behaviours, substance abuse, teenage pregnancy, inter-partner violence and physical health.
- A number of evidence-based interventions have been shown to be effective in the prevention, treatment and management of childhood conduct problems. Current moves to introduce such programmes into New Zealand should be encouraged and strengthened.
- Other programmes in this area have either not been evaluated or have been found to be of limited efficacy, or even harmful.
- Major issues that remain to be addressed are workforce enhancement, programme evaluation resources, and development of Te Ao Māori programmes.

1. **Introduction**

The aim of this chapter is to provide a broad overview of the aetiology, consequences and treatment of conduct problems during development with a specific focus on both New Zealand evidence and the development of New Zealand-based policy and services.
2. **What is the question?**

There has been long standing scientific, public and political interest about issues relating to the prevention, treatment and management of antisocial behaviours in children and adolescents. Typically, these concerns have focused on a minority of young people who are characterised by recurrent aggressive, violent, oppositional, dishonest and antisocial behaviours. The terminology used to describe these young people has varied between disciplines. In psychiatry and clinical psychology these individuals are usually described as having oppositional defiant disorder (ODD) or conduct disorder (CD) [1, 2]. Within educational circles terms such as challenging behaviour and emotional and behavioural disturbance (EBD) have been used [3] to describe the same constellation of behaviours. To address these differences in terminology, the New Zealand Advisory Group on Conduct Problems (AGCP) has suggested the use of the term “conduct problems” which they define as follows:

“*Childhood conduct problems include a spectrum of antisocial, aggressive, dishonest, delinquent, defiant and disruptive behaviours. These behaviours may vary from none to severe, and may have the following consequences for the child/young person and those around him/her: stress, distress and concern to adult care givers and authority figures; threats to the physical safety of the young people involved and their peers; disruption of home, school or other environments; and involvement of the criminal justice system.*” [4]

3. **Why is it important for the transition to adolescence?**

It is widely recognised that conduct problems in childhood and in adolescence cause difficulties and stress for young people and for those individuals who are associated with them including parents, teachers and peers [5]. There is now substantial evidence from New Zealand’s major longitudinal studies that these problems have long term consequences that extend into adulthood. Specifically, both the Christchurch Health and Development Study (CHDS) and the Dunedin Multi-disciplinary Health and Development Study (DMHDS) have followed birth cohorts of about 1000 children from early childhood up to the age 30 and beyond. The findings of these studies have made it possible to determine the extent to which conduct problems in childhood and adolescence are precursors of longer term adverse outcomes [6-12]. These studies have demonstrated that young people with significant conduct problems are at increased risks of:

- later crime, arrest and imprisonment;
- substance use and abuse;
- mental health problems including depression and anxiety;
- Suicidal thoughts and attempts;
- teenage pregnancy and parenthood;
- inter-partner violence;
- impaired parenting behaviours;
- poor physical health; and
- poor dental health.

Given this body of evidence, there is no other commonly occurring childhood condition that has such far reaching and pervasive consequences for later health, development and social adjustment. For this reason, social investments into the prevention, treatment
and management of conduct problems should be a matter of the highest priority in the planning of services for children and adolescents.

4. What is the scale of the problem?

While estimates of the fraction of children with clinically significant conduct problems have varied most studies set the prevalence of these problems in the region of 5-10% [3, 13-15]. If we use the lower limit of this range to estimate prevalence, within the 3- to 17-year-old New Zealand population, there will be in excess of 40,000 children and adolescents with significant levels of conduct problems. Those most likely to display these problems are: male, Māori, and young people from socially disadvantaged backgrounds which are characterised by low socioeconomic status, violence, parental criminality and substance abuse, and inconsistent or harsh parenting practices [3, 16].

5. What research tells us about causative factors

There is a large and ever growing literature on the factors that place children and young people at risk of developing significant levels of childhood conduct problems as well as the factors that may act in a protective role [17-21]. What emerges most strongly from this body of evidence is that there is no single factor or set of factors that explains why some young people develop significant conduct problems while others do not. Rather, the evidence suggests conduct problems are the end point of an accumulation of factors that combine to encourage and sustain the development of antisocial behaviours. Amongst the better documented findings are the following.

5.1 Genetic factors

The predominance of males with conduct problems clearly hints at the possibility that the biological and genetic factors may play an important role in the development of conduct problems. There is, in fact, strong evidence to suggest the role of underlying genetic factors from research using twin and adoption designs which has suggested that up to 40% of the variability in antisocial behaviours may be genetic in origin [22]. More recently with the development of genetic technology it has become possible to examine the role of specific genes in the development of antisocial behaviour and this research is beginning to highlight the importance of gene x environment interactions in which the outcomes that young people experience depend on both their genetic background and the environment to which they are exposed [23, 24].

5.2 Socio-economic factors

Another pervasive finding in the research literature has been that rates of many types of childhood problems, including childhood conduct problems, tend to be higher amongst families facing sources of social inequality and deprivation including poverty, welfare dependence, reduced living standards and related factors [25-30]. These findings highlight the fact that the general socio-economic milieu within which children are raised has far-reaching consequences for their healthy development.

5.3 Family

There is a substantial body of research which shows that the nature and quality of the child’s family environment plays an important role in the development and maintenance
of conduct problems [26, 31-38]. In particular, children reared in homes characterised by multiple sources of adversity including family violence, child abuse, inconsistent discipline practices, multiple changes of parents and similar factors emerge as being at substantially increased risks of developing significant levels of conduct problems.

5.4 Schools
As Rutter has pointed out, children spend in the region of 15,000 hours at school [39]. Given this, it is not surprising to find that the nature and quality of the school environment play an important role in shaping children’s behaviour. Growing evidence suggests that schools that offer consistent, non-punitive and supportive environments reduce risks of conduct problems [40-42].

5.5 Peers
The nature and quality of the young person’s peer relationships also play an important role in shaping behaviour; peer influence is particularly important during adolescence. Affiliation with anti-social and substance-using peers leads to the onset of conduct problems in young people with a previously unproblematic life history [26, 43-46]. The role of peers in the development of conduct problems also underlies an important distinction drawn by Moffitt on the basis of her work [29, 47, 48] with the Dunedin Multidisciplinary Health and Development Study (DMHDS). In particular, Moffitt suggested that there were two distinct trajectories by which conduct problems develop. The first is the life course persistent pathway. Young people following this pathway show signs of conduct disorder very early in development which persist over the life course. Moffitt suggests that this pathway includes young people who have neuro-psychological deficits and who are exposed to disadvantaged or dysfunctional childhood environments. The second pathway is the adolescent-limited pathway. Young people following this pathway typically do not show significant conduct problems until adolescence; they develop conduct problems by imitating the behaviours of antisocial peers.

5.6 Overview
What emerges from this large body of research is that the development of childhood conduct problems is the end point of a large number of biological, sociological, family and personal factors which act cumulatively to affect the young person’s developmental trajectory and place a significant minority of individuals at risk of developing antisocial behaviour patterns. Conversely, what protects young people from developing these problems is exposure to supportive and nurturing environments at home, at school, and within other social contexts.

6. What research tells us about prevention programmes that work
Over the last two decades there have been rapid advances in the development of effective programmes aimed at the prevention, treatment and management of conduct problems. These advances have been possible as a result of an increasing number of research studies that have examined treatments for conduct problems using randomised controlled trials (RCTs). Typically in such trials, young people with conduct problems are divided into two groups at random. One group, (the experimental group) receives the new treatment or programme whereas the other group, (the control group) is provided with the usual or
existing treatment. Providing that RCTs are well conducted, they provide strong, but not infallible, evidence of the effectiveness of interventions [49, 50].

There is a large literature on the risk and protective factors associated with childhood conduct problems. One of the most robust and pervasive findings in the literature is that children who develop conduct problems frequently come from home environments characterised by multiple sources of social, economic, family and related disadvantage [26, 31, 38, 46, 51]. These findings have motivated efforts to intervene with so called ‘at risk’ populations very early in development to mitigate the effects of economic, social and family disadvantage and improve outcomes for children. Typically, these programmes are targeted at addressing multiple issues relating to health, development, parenting and child behaviour during the preschool years. A brief review of findings from this research approach is given below.

6.1 Home visiting programmes

Both within New Zealand and internationally, large investments have been made in the development of intensive home visiting programmes for families facing stress and difficulties [52-60]. These programmes usually start around or before birth and are delivered by home visitors who aim to provide advice, assistance, support and mentorship to families. Programmes may last up to 5 years and aim to address a wide range of family issues including parenting and child behaviour. Many of these programmes have been evaluated using randomised controlled trials. Reviews of this evidence suggest the results of many home-based interventions have been disappointing and few positive effects have been found [52, 61, 62]. There are, however, at least two exceptions to this trend. The first, and most impressive, is the Nurse Family Partnership (NFP) developed by Olds and his colleagues [61]. The NFP provides a programme of intensive home visitation delivered by nurses to disadvantaged young mothers. The children whose mothers participated in the programme were followed up to the age of 15. In comparison to a random control group, the adolescents in those families who had received NFP had fewer arrests, convictions and probation violations suggesting that NFP interventions mitigate risks associated with severe antisocial behaviours in adolescence that often emerge from conduct problems in childhood [63].

The second study to show positive benefits for child behaviour was the New Zealand-based Early Start programme. The children in this programme have only been evaluated up to the age of 3 years, but findings up to that age indicate that children enrolled in Early Start had fewer problem behaviours at age 3 years [52]. The general conclusions that emerge from the literature on home visitation is that well-designed home visitation can reduce rates of conduct problems but to be effective these programmes need to be carefully implemented and require rigorous evaluation [63]. The most successful programmes are designed to enhance children’s emotional, regulatory, and social development as well as increase their numeracy and literacy skills. Children whose home environments are poor or are characterised by other risk factors, gain the most from these centre-based programmes.

6.2 Centre-based programmes

Centre-based programmes provide an alternative to home-based programmes. In these programmes, children from at-risk backgrounds attend pre-school education centres that provide systematic programmes aimed at reducing risks of behavioural difficulties and increasing academic competence. It is important to note that such programmes should
not be equated with the provision of preschool education; the programmes described below contain specific features aimed at mitigating childhood disadvantages.

While formal evaluations have shown that these programmes have limited success in increasing children’s cognitive abilities over the long term, there is growing evidence that they may make strong contributions to the development of non cognitive behavioural skills [64].

Notable examples of successful centre-based programmes include the Abecedarian programme [65, 66] and the Perry Preschool Project [67]. As with home visitation, randomised trials suggest that well-designed, centre-based programmes can reduce risks of longer term conduct problems. This evidence has been recently reviewed by the economist James Heckman who concludes:

“Early interventions targeted toward disadvantaged children have much higher returns than later interventions such as reduced pupil teacher ratios, public job training, convict rehabilitation, tuition subsidies or expenditure on police.” (p. 1902) [64]

Because multiple risk factors contribute to conduct problems in childhood, early childhood centre-based programmes that reduce multiple risks are more successful in preventing chronic delinquency and in maximising long-term success than are those that target only a single risk factor. The programmes that demonstrate long-term effects on crime and antisocial behaviour tend to be those that combine centre-based programmes for children with family support services.

6.3 Community-based programmes

A further preventative approach has been through the development of community-based programmes that attempt to provide services, resources and supports for at-risk families and children. Two examples of effective community-based programmes are the Chicago Child Parent Centres [68, 69] and Communities That Care [70].

7. What research tells us about treatment and management programmes that work

Although the prevention programmes outlined above provide useful approaches for reducing the risks of conduct problems for children from ‘at risk’ environments, even with such programmes a number of children will go on to develop significant conduct problems. There is now a large, impressive and ever growing body of literature about the types of programmes that are most effective for the treatment and management of conduct problems. These interventions span both home and school and are suitable for different ages, while sharing a number of common features:

- all programmes use non-punitive problem solving approaches that attempt to address the sources of the children’s problem behaviours;
- all are founded in a clearly articulated theoretical framework regarding the aetiology of conduct problems;
- all programmes are manualised making it possible to transfer the programme to a new context; and
- the evaluation of all programmes has been founded on a prevention science model and the use of randomised controlled trials (see Chapter XX for further discussion).
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7.1 Parent Behaviour Management Training
One of the most successful approaches to addressing conduct problems in early and middle childhood has been Parent Behaviour Management Training programmes. These programmes have been based on two areas of research. First, maladaptive parent-child interactions, particularly in relation to discipline practices, have been shown to foster and to sustain conduct problems among children. Second, social learning techniques, relying heavily on principles of operant conditioning, have been extremely useful in altering parent and child behaviour. Typically Parent Behaviour Management Training involves therapists or facilitators teaching parents a range of skills for the management of behaviour. These skills include: carefully observing and recording child behaviour; the use of positive reinforcement, the avoidance of physical punishment; the use of time out, loss of privileges; and related skills. Parent management training may be provided in both a group context and a one-on-one basis [3, 71-74].

There is now a range of manualised, well validated and widely used programmes that employ these principles. The programmes include:

- the Triple P (Positive Parenting Programmes) [75, 76];
- the Incredible Years Programmes [77, 78];
- Parent Management Training Oregon [79, 80]; and
- Parent Child Interaction Training [81, 82].

These programmes offer a series of options for delivering parent behaviour management training which range from universal programmes directed at all parents to highly intensive programmes for children with severe behaviour disturbance. The weight of the evidence suggests that these programmes are most successful with children in the 3–7 years age range where treatment may reduce rates of conduct problems by up to 80% [3, 4, 83] with programme effectiveness declining with increasing age of the child [3, 4, 84].

7.2 Teacher Behaviour Management Training
Parallel to research into Parent Behaviour Management Training there has also been similar research into classroom-based Teacher Behaviour Management Training. However, the extent of this research has been far more limited than research into Parent Behaviour Management training and there are relative few well validated and manualised programmes available. Teacher Behaviour Management Training programmes include:

- the Incredible Years Teacher Programme [78]; and
- the CLASS and RECESS programmes developed by the Oregon Social Learning Centre [85–87].

7.3 School wide interventions
There is increasing evidence to suggest that the nature and quality of school environments play an important role in the prevention and management of childhood conduct problems. This research has led to the development and validation of the School Wide Positive Behaviour Support (SWPBS) programme. SWPBS is a decision making framework that guides selection, integration, and implementation of the best evidence-based academic and behavioural practices for improving important academic and behaviour outcomes for all students [88, 89].

SWPBS emphasises four integrated elements: (a) data for decision making, (b) measurable outcomes supported and evaluated by data, (c) practices with evidence that these outcomes
are achievable, and (d) systems that efficiently and effectively support implementation of these practices. The programme is suitable for implementation in both primary and secondary school settings [83, 84].

### 7.4 Multimodal programmes

As children grow older and their conduct problems become more entrenched, the effectiveness of the programmes described above tends to decline [4, 83, 84]. Recognition of this fact has led to the development of multimodal intervention which is aimed at treating and managing conduct problems across a range of settings involving families, the school, teachers and peers. These programmes are most suited for adolescent populations and include:

- Multisystemic Therapy [90, 91];
- Functional Family Therapy [92, 93];
- Coping Power [94];
- Stop Now and Plan [95]; and
- Linking Interests of Families and Teachers [96].

All of these programmes are manualised and have been validated by randomised controlled trials.

### 7.5 Residential/out of home interventions

Finally, some children and young people with conduct problems may be removed from their home either because of conduct problems or because of care and protection issues. While conventional residential and foster care has been found to have limited effectiveness in addressing the issue of conduct problems, there are two specialised out of home interventions that have been found to be effective.

The first is Multidimensional Treatment Foster Care (MTFC) [3, 97]. In this programme children with severe behavioural difficulties are placed with specially trained foster parents who are provided with ongoing support by a team of trained therapists. Placements typically last for 6-9 months. The programme involves a structured behaviour management system for the child supplemented with family therapy and support for the child’s birth family. Teaching Family Homes also provide out of home treatments for children with severe conduct problems – in these homes, up to six children are placed with specially trained foster parents who act as therapists who teach the children a range of behavioural skills, including social skills, problem solving, emotional control and related skills [98].

### 8. Interventions for which evidence of efficacy is limited or lacking

While there is growing evidence on the types of programme that are effective in the treatment and management of childhood conduct problems, it has also become apparent that many programmes in this area have either not been evaluated or have been found to be of limited efficacy. Amongst the programmes found to be of limited efficacy are:

- wilderness programmes [99];
- boot camps and military style training [100, 101];
- mentoring programmes [102, 103];
- restorative justice [104]; and
- Scared Straight programmes [105, 106].
For some of these programmes (wilderness training, military style training, mentoring and restorative justice) it is possible to find examples of apparently successful programmes. However, what is not clear are the features that distinguish unsuccessful programmes from successful programmes. For other programmes, such as Scared Straight, there is evidence suggesting that the programmes may have harmful effects. Research into programmes with limited evidence of efficacy has two important messages for the choice and implementation of programmes. First, this research suggests that it is important that investments into policies are based on well founded evidence provided by randomised controlled trials. Secondly, variations in the outcomes of apparently similar programmes highlights the importance of subjecting programmes to thorough evaluation when they are installed in a new and culturally different context such as New Zealand [4].

9. Where is policy/intervention currently focused?

The major issues posed by this body of research and evidence are that of developing policies, strategies and services to translate this evidence to effective New Zealand-based policy and practice. A promising start has been made in some sectors of Government:

- The Positive Behaviours for Learning (PB4L) strategy developed by the Ministry of Education has made a step in the right direction by setting out a plan for three of the evidence-based programmes noted in the review above [107]. These programmes are the Incredible Years Basic Parent Programme, the Incredible Years Teacher Programme and School Wide Behaviour Support.
- The Drivers of Crime Strategy [108] also includes proposals to include a primary care-based version of the Triple P programme.
- The Ministry of Social Development in partnership with the Ministries of Education and Health has invested in the development of an evaluation of the Incredible Years Parent programme with further evaluation of the Incredible Years Teacher programme and School Wide Behaviour Support being planned [109].

10. Implications for future policy

While there is increasing investment in evidence-based programmes for the treatment and management of conduct problems in New Zealand, there are a number of major issues that still need to be addressed. These include the following.

10.1 Implications for the New Zealand Youth Justice System

The prevention, treatment and management of conduct problems in childhood and adolescence has important implications for the New Zealand Youth Justice System. In particular, children with early-onset, life-course persistent conduct problems have a high risk of coming to the attention of Justice system and will make up the majority of those individuals who go on to become repeat offenders. Providing the early intervention programmes described above offers a means of reducing the number of young people who develop life-course persistent conduct problems. Further, a number of programmes reviewed previously offer promising treatment approaches for addressing adolescent conduct problems and are well suited to be incorporated into the New Zealand Youth Justice System. These programmes include: Functional Family Therapy, Multi-systemic Therapy, Treatment Foster Care and Teaching Family Homes. All of these interventions have been evaluated using randomised controlled trials and have been found to be
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effective in reducing rates of antisocial behaviour amongst adolescents with significant conduct problems. There is a strong case for extending current Youth Justice provisions to trial the effectiveness of these methods in a New Zealand context.

10.2 Workforce issues

Many of the programmes described in this require trained professional staff including child psychologists, child psychiatrists, trained therapists and teachers to oversee supervise and deliver evidence-based programmes. These staff are currently in short supply and there is an urgent need to invest in workforce development [4].

10.3 Programme evaluation resources

There have been ongoing debates about the extent to which evidence-based programmes developed outside of New Zealand can be transplanted into a New Zealand context and still remain effective. To address these concerns it is important that programmes are thoroughly evaluated in a New Zealand context before being widely implemented. At the present time there are limited research resources inside of and outside of Government. There is a strong case for increasing investments into research and development staff to ensure that investments made into New Zealand-based programmes are adequately evaluated [4, 83]. As shown in the Appendix, research in the US and elsewhere has shown that the return from well-implemented and well-evaluated prevention, intervention, and treatment programmes for conduct problems is often very good, with programmes returning several times their costs as a result of reduced rates of crime imprisonment and associated costs.

10.4 Development of Te Ao Māori programmes

As noted earlier, rates of conduct problems in Māori are higher than for non Māori [4]. Given that conduct problems are an important precursor to a wide range of later adverse outcomes, it is a matter of high social and policy importance that this inequality is addressed. One important route for delivering culturally acceptable and culturally appropriate programmes for Māori is through increased investment and support of Te Ao Māori (by Māori for Māori) initiatives in this area [4, 83]. These issues are discussed at greater length in Chapters XX and YY.

11. References

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Appendix 1: Summary of evidence on effective treatments

The review in the main chapter provides an overview of the evidence regarding effective interventions to address conduct problems in young people. This review is based upon a large and growing literature that has identified effective strategies, interventions and treatments to reduce the prevalence of conduct problems amongst young people. Table 4.1 attempts to provide a brief and accessible summary of this body of evidence. The format of the Table has been adapted from the Table presented in a companion chapter on alcohol in adolescence (Chapter XX) and summarises the evidence on a series of approaches to address conduct problems.

The Table is divided into preventive programmes which aim to reduce rates of antisocial behaviours before these occur and treatment programmes aimed at providing assistance to children and young people with significant conduct problems. Each area of intervention is classified in terms of:

(a) overall effectiveness
(b) breadth of research support
(c) cross national testing

**Overall effectiveness** is scored as:

- 0 Evidence indicates a lack of effectiveness
- + Evidence for limited effectiveness
- ++ Evidence for moderate effectiveness
- +++ Evidence for a high degree of effectiveness
- ? No controlled studies have been undertaken or there is insufficient evidence upon which to make a judgement

**Breadth of research support** is scored as:

- 0 No studies of effectiveness have been undertaken
- + One or two well-designed effectiveness studies completed
- ++ Several effectiveness studies have been completed, sometimes in different countries, but no integrative reviews were available
- +++ Enough studies of effectiveness have been completed to permit integrative literature reviews or meta-analyses

**Cross-national testing** is scored as:

- 0 The strategy has been studied in only one country
- + The strategy has been studied in at least two countries
- ++ The strategy has been studied in several countries
- +++ The strategy has been studied in many countries

In addition, the table provides narrative comments on specific interventions. Table 4.1 may be used to clarify and elaborate on the general recommendations made in the chapter.
### Table 4.1. Summary of effective programmes for the prevention and treatment of conduct problems

<table>
<thead>
<tr>
<th>Strategy or intervention</th>
<th>Effectiveness</th>
<th>Breadth of research support</th>
<th>Cross-national testing</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prevention programmes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home visiting (e.g. Nurse Family Partnership)</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>There is evidence that some home visiting programmes, notably the Nurse Family Partnership can be effective in reducing antisocial behaviours. However, many programmes in this area have been shown to be ineffective.</td>
</tr>
<tr>
<td>Centre-based programmes (e.g. Abecedarian, Perry preschool)</td>
<td>+++</td>
<td>++</td>
<td>+</td>
<td>There is good evidence from US-based programmes to suggest that centre-based programmes targeted at disadvantaged pre-schoolers may have long term benefits in reducing later antisocial behaviours.</td>
</tr>
<tr>
<td>Community-based programmes (e.g. Communities That Care; Chicago Parent Child Centres)</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>There is growing international evidence to suggest that community level programmes targeted at disadvantaged communities and families may have positive benefits in reducing antisocial behaviours in young people.</td>
</tr>
<tr>
<td><strong>Treatment programmes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Behaviour Management Training (e.g. Incredible Years, Triple P, Parent Management Oregon, Parent Child Interaction Training)</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
<td>Parent Behaviour Management Training (PBMT) is the most effective and well supported approach to addressing childhood conduct problems and has been supported in numerous controlled trials. The benefits of these programmes are greatest for young (&lt; 8 years) children and decline with increasing age.</td>
</tr>
<tr>
<td>Teacher Behaviour Management Training (e.g. Incredible Years Teacher Programme)</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>The evidence for the effectiveness of Teacher Behaviour Management Training (TBMT) is far weaker than for PBMT. However, there is growing evidence from controlled trials and single subject studies that TBMT is effective in reducing rates of antisocial behaviours in a classroom setting.</td>
</tr>
<tr>
<td>School wide programmes (e.g. School Wide Behaviour Support)</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>There is growing evidence that School Wide Behaviour Support is effective in both reducing antisocial behaviours in schools and providing treatment for children with conduct problems.</td>
</tr>
<tr>
<td>Multi-modal programmes [e.g. Multi Systemic Therapy (MST); Functional Family Therapy (FFT)]</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>There is substantial evidence that multi-modal programmes such as MST and FFT are effective in addressing the needs of adolescents with conduct problems. However, results for MST have been variable.</td>
</tr>
<tr>
<td>Out of home programmes [e.g. Multi-Dimensional Treatment Foster Care (MTFC); Teaching Family Homes (TFH)]</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>There is growing evidence to suggest programmes such as MTC or TFH are effective in reducing rates of antisocial behaviour in children and young people with significant conduct problems.</td>
</tr>
</tbody>
</table>
Appendix 2: Cost benefits of effective treatments for conduct problems

There is extensive evidence to suggest that the programmes summarised in Table 4.1 are highly cost effective. A summary of a number of illustrations of the cost effectiveness of various approaches is given below.

- **Home visiting**: The Rand Corporation conducted a cost benefit analysis of the Nurse Family Partnership programme. This evaluation concluded that the programme returned US$ 4 for every dollar invested, with 20% of these savings coming from reduced costs of criminal justice for the offspring of families enrolled in the programme [110].

- **Centre-based programme**: In an analysis of the cost benefits of the benefits of the Perry Preschool Programme, Cunha and Heckman estimate that the programme returned over US$ 9 for every dollar spent, with 72% of these savings coming from reduced costs of future crime [111].

- **Community-based programmes**: Cunha and Heckman estimated that the Chicago Child Parent Centres produced a return of US$ 7.77 for every dollar invested with 25% of these savings coming from reduced costs of future crime [111]. A cost-effectiveness study revealed that a ten-year investment of US$ 30 million in prevention programs through the Pennsylvania Commission on Crime and Delinquency (PCCD) returned over a ten-fold benefit with an estimated US$ 315 million gained through reduced corrections costs, welfare and social services burden, drug and mental health treatment, and increased employment and tax revenue [112]. The prevention program investment was assisted in Pennsylvania through the Communities That Care framework.

- **Parent Behavior Management Training**: In a review of the costs of the Incredible Years programme in Wales, Scott [71] concluded that the longer term return from this programme was likely to be 10 times higher than the cost of the programme.

- **Teacher Classroom Management Training**: No cost benefit estimates of teacher classroom management training have been reported. This reflects the limited research evidence in this area.

- **School Wide Behaviour Support**: No evaluation of the cost benefit of SWBS has been found. However, Blonigen et al. provide a detailed account of the costs of SWBS and outline the issues to be addressed in conducting a full cost benefit analysis [88].

- **Multi modal programmes**: The Blueprints for Violence Prevention Group has estimated that there is a US$ 8.38 return from every dollar invested in Multi-Systemic Therapy and a US$ 6.85 return from investments made in Functional Family Therapy [93, 113].

- **Out of home programmes**: The Blueprints for Violence Prevention Group estimate that there is a US$ 14.07 return from every dollar invested in Multidimensional Treatment Foster Care [93, 113].

All of these analyses make it clear that investment in well-validated, well-implemented prevention and treatment programmes for conduct disorder is likely to be highly cost-effective with the returns from these programmes being several times the costs of the interventions. However, in appraising this literature three points need to be borne in mind.
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First, all of the cost benefit analyses reviewed have been conducted outside of New Zealand and there is no guarantee that cost-benefit ratios reported will apply in the New Zealand context.

Second, the cost-benefit estimates reported assume that the programmes described are well implemented and effective. Investments in ineffective or poorly implemented programmes are likely to produce negative returns.

Finally, many of the cost benefit estimates rely on measures of later crime and similar outcomes. This implies that the benefits of such programmes will often occur many years in the future while the costs are incurred in the present. These features highlight the need for a long term investment strategy in which today’s dollars are invested for the future well-being of young New Zealanders. There is a universal consensus in the literature on this topic that such a strategy is likely to be highly cost-effective, providing investment is made in well-founded and well-implemented evidence-based programmes [110, 111, 114-116].