Literature scan:
Research and evidence on what works for vulnerable children.

Report

For
Ministry of Social Development

From
Quigley and Watts Ltd

Robert Quigley

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Table of Contents

[1] Grey-shaded areas represent NZ-derived evidence

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1. Executive summary

Quigley and Watts Ltd was contracted by the Ministry of Social Development to identify research and evidence on vulnerable children to feed into the upcoming white paper on vulnerable children. In particular, the literature scan was to answer questions about what interventions, programmes or initiatives worked, how agencies tracked children for understanding outcomes, and what further research was required. Any information on definitions of "vulnerable children" used in research and evidence was also searched for.

A search strategy was developed in conjunction with a University of Otago search-strategy specialist librarian, and articles were retrieved for consideration. Papers were also requested from Government agencies and non-government organisations. A small number of meetings were held to further identify useful literature.

This literature scan of New Zealand review-level evidence has identified many effective interventions. Several of the effective interventions are based on mainstream New Zealand programmes and the data from those, and from Te Ao Māori approaches. The interventions cover many settings and this is a particular strength, as work within the areas of: parent, family or home interventions; school or early childhood education interventions; community or multimodal interventions or multi-setting interventions; or other single-sector-led interventions; will deliver positive outcomes.

Overall there is substantial choice for the policy and decision maker. Many programmes work, in many settings, delivering many positive outcomes. Prevention works, but even if prevention was implemented perfectly there would still be some who require treatment, and treatment works too. The most promising Western Science approaches are those developed and designed for a New Zealand audience, as they are already in New Zealand and are working right now. They have been developed to build on existing strengths and systems, rather than attempting to make radical change. They incorporate Māori cultural values into the programmes to achieve excellent outcomes for Māori and Pakeha. They are far wider than just individual/family approaches, and have a holistic nature to them. Examples include Te Kotahitanga, Project Energize and APPLE project. The most promising Te Ao Māori programmes are the wharekura education settings which have shown excellent outcomes in NCEA pass rates when compared with control schools.

There was little data identified regarding what interventions work for Pacific families and children.

From the international literature (potentially less transferable to New Zealand) it is hard to go past the Abcedarian Project and/or Perry Project, both interventions providing early childhood centre care to high-risk families. The outcomes lasted a lifetime and were intergenerational – improving the outcomes for the children's children. While it is an intensive intervention, the cost benefit analyses carried out show substantial financial return for each dollar invested. However if it also proved to work in a New Zealand setting, the scalability of the approach may be an issue due to the intensive nature of the intervention.

Many of the studies showed that early intervention was more effective than later intervention. Studies also showed that universal, targeted or high-risk programmes worked – again giving policy and decision makers plenty of scope to select appropriate options to further explore. The research does not answer which of universal, targeted or proportionate universal programmes

are best, instead policy makers would need to rely on theory to understand the potential impacts on what groups would benefit most and least across the social and economic continuum.

If a single issue was to be selected, interventions to address self-control would stand out. This non-cognitive behavioural skill is malleable, and is believed to underpin many negative life-long outcomes. Self-control is what Professor Richie Poulton (Gluckman et al., 2011) describes as the "essential ingredient".

It is important to note that the research identified in this review has addressed either specific research questions (such as poor parenting, or behaviour issues, or sex education, for example) or has taken a holistic approach across several issues, sometimes working in several settings and attempting to affect multiple outcomes. Either approach is exactly about "what works for vulnerable children", though the researchers themselves have not used the difficult-to-define term "vulnerable children and families".

The excellent story from this literature scan is that a lot can be achieved. Despite poor parental skills, difficult macro-level and micro-level socio-economic environments, and substantial resource disadvantage, outcomes for vulnerable children can improve markedly with carefully planned and executed interventions.

Sharing of information between agencies is occurring in New Zealand. Multiple programmes are sharing data because multiple agencies are working together. However, publicly available documents have not been identified by this literature scan that shed any light on how that is happening. Further research using a different research approach is warranted in this area. Data tracking of child and family outcomes is at its early stage of use in New Zealand. It is being done, but again information about data tracking is not publicly available.

The definition of "vulnerable children" is complex and means different things to different agencies. It would be worthwhile, if "vulnerable children" is going to be continued to be used as a common phrase in New Zealand policy documents, to have an agreed definition developed between multiple agencies. This may not be an easy task, however, because of the different priorities of different agencies.

Further research could include:

- collating the data on risk, protective and causative factors, and on the size of the problem, for policy areas of interest (once narrowed down to a manageable number) (This will allow policy makers to make a fully informed decision about programmes being proposed.)
- rigorous evaluation of existing New Zealand programmes to provide data on effectiveness
- rigorous implementation and evaluation of any proposed new or altered programmes to ensure that they are implemented appropriately and are effective
- data-sharing and data-tracking (Numerous programmes share data and possibly track data. Understanding how such data is shared and tracked, and sharing that with all of the partner agencies would be very valuable for learning what works in data sharing and tracking, and why. It may also highlight valuable outcome data related to programme effectiveness that is not currently being used, or at least not currently publicly available.)

2. Introduction

Quigley and Watts Ltd was contracted by the Ministry of Social Development to identify research and evidence on vulnerable children to feed into the upcoming white paper on vulnerable children. In particular, the literature scan wanted to answer questions about what interventions, programmes or initiatives worked, how agencies tracked children for understanding outcomes, and what further research was required. Any information on definitions of "vulnerable children" used in research and evidence was also searched for.

The literature scan was not interested in broader questions about what increases the risk of vulnerability for children, or statistics on the numbers of vulnerable children, or how different population groups have higher exposure to the determinants of vulnerability, as these have been covered extensively in other reviews. A small number of the many examples are:

- the Ministry of Social Development has produced a recent report "Vulnerable children: numbers and risk factors" (Ministry of Social Development, July 2011) covering just that
- the May 2011 report "Improving the Transition: Reducing the social psychological morbidity during adolescence" (Gluckman et al., 2011) also reports on risk factors and the size of the problem
- the Ministry of Social Development's 2008 report, "Children and Young People: Indicators of Wellbeing in New Zealand"
- Fletcher and Dwyer's 2008 report, "A Fair Go for All Children: Actions to Address Child Poverty in New Zealand"
- The national youth health and wellbeing survey conducted by the University of Auckland in 2007, resulting in "Youth '07 The Health and Wellbeing of Secondary School Students in New Zealand", etc.
- The Ministry of Justice's 2010 report, "Who is vulnerable or hard-to-reach in the provision of maternity, Well Child and early parenting support services?", which reviews the current data on the number of New Zealand children and families that could be considered to be vulnerable or hard-to-reach
- New Zealand Child, Youth Epidemiology Service's (2009) annual reports to District Health Boards on child health statistics.

Instead, this literature scan was focused on what interventions work. This focus was chosen because the green paper on vulnerable children suggests interventions, and this scan is a rapid attempt to gather some of the research and evidence for any proposed interventions.

It is important to note that the research identified in this review has addressed either specific research questions (such as poor parenting, or behaviour issues, or sex education, for example) or has taken a holistic approach across several issues, sometimes working in several settings and attempting to affect multiple outcomes. Either approach is exactly about "what works for vulnerable children", though the researchers themselves have not used the undefined term vulnerable children and families.

When undertaking a literature scan of what works, one approach is to focus solely on evidence of effectiveness from reviews and studies using a randomised control method. That has been a substantial component of this work. However such an approach typically excludes interventions by/with/on indigenous populations. This is not acceptable within New Zealand and so a component of the literature scan has begun to explore the best available evidence for Māori.

This literature scan was completed in the period 14 October to 11 November, with final editing taking the report through to December 2011. Submissions on the green paper close on 28 February 2012, providing adequate time to inform the research and evidence section of the white paper due August 2012.

Background information

A "Green Paper" is a discussion document that outlines ideas a government wants to test with the public before making decisions. The New Zealand Government is "concerned about the number of children who have childhoods that make it unlikely the children will thrive, belong and achieve". The Green Paper outlines a number of ideas on how to improve leadership for vulnerable children, some policy changes, and some changes to how services are delivered. A copy of the green paper is available at http://www.childrensactionplan.govt.nz/home.

To underpin the final white paper, a strong section on research and evidence is required. To begin that task, the Ministry of Social Development wanted to draw on existing work, but placed particular emphasis on existing reviews (partly due to the demanding time frame), evidence with a rigorous method (to ensure a quality product), evidence about what interventions work, and evidence relevant to Māori.

Interventions included were those:

1. to prevent a negative outcome before occurrence – these could be applied to:
    a. the whole population (universal interventions)
    b. high-risk parts of the population (targeted interventions)
2. to prevent a re-occurrence of negative outcomes and/or additional negative outcomes after an initial negative outcome has already occurred (often described as intensive interventions)
3. to promote positive outcomes as part of an approach that targets the life course (e.g. building resilience).

3. Method

The purpose was to identify research and evidence on vulnerable children to feed into the upcoming white paper on vulnerable children. The objectives of the literature scan were:

1. to identify research and evidence on interventions, programmes or initiatives that work
    a. report on key findings (outcome measures)
    b. report on success factors as to "how come" it worked
2. to identify cross-agency (or single-agency) data matching projects e.g. use of Work and Income, CYF data such as PAFT, Pathways and the youth pipeline with the purpose of tracking outcomes, or to identify vulnerable children.
3. to identify further research
4. to identify how agencies define vulnerable children – what measures, indicators and definitions are used in research and evidence (not at a service level).

Data sources

For the purposes of this literature scan, the definition of vulnerable children is those children unable to access help AND with risk factors / poor outcomes across several sectors/domains (health and disability, social, justice, education, families). The definition extends to factors mediated by their parents (drugs and alcohol, mental health, poor parenting, intellectual disability).

Three major methods were used.

1. Papers and reviews were retrieved from electronic databases.
A robust search strategy was developed in conjunction with the Ministry of Social Development. The Wellington School of Medicine librarians helped with the search strategy, including search terms and appropriate databases to search. The full search strategy is available by emailing office@quigleyandwatts.co.nz.

Search terms
The following search terms were used:

Population:	New Zealand OR Māori
AND	
	"at risk" OR vulnerable OR neglect* OR resilien* OR famil* OR abus*
AND	
	Child* OR adolesce* OR infant* OR toddler* OR preschool*
Intervention:	intervention* OR strateg* OR program* OR initiative* OR effect*

Inclusion criteria
New Zealand, Māori and Pacific evidence reviews only
Age of children, 0 to 18 years.
Publications January 2006 – week 3 October 2011
English language only

Databases The following electronic databases were searched for relevant papers: Cochrane Database of Systematic Reviews (CDSR), Database of Abstracts of Reviews of Effects (DARE), Ovid Medline PsycINFO, Proquest (all 22 databases), Campbell Collaboration, Index New Zealand and Informit (Humanities and Social Sciences Collection; and Health Collection).

2. Partner agencies were contacted for information.
The Ministry of Social Development contacted government research partner agencies[2] to request information to input into this literature scan and information was received from:

- Department of Building and Housing
- Families Commission
- Ministry of Health.

The following staff at the Ministry of Social Development were contacted and met with for suggestions of relevant material:

- Marlene Levine
- Ross MacKay
- Bryan Perry

Other agencies were contacted directly or met with, or responded by email to requests for information:

- Families Commission
- Mental Health Foundation
- National Health Committee
- New Zealand Child & Youth Epidemiology Service
- Office of Children's Commissioner
- Public Health Advisory Committee

[2] The agencies contacted were Department of Building and Housing, Department of Corrections, Department of Internal Affairs, Department of Labour, Families Commission, Housing New Zealand, Ministry of Education, Ministry of Health, Ministry of Justice, Ministry of Pacific Island Affairs, New Zealand Police, and Te Puni Kokiri

4. Findings of the literature scan

This section outlines the evidence for effective interventions with New Zealand evidence shaded grey for ease of viewing. The section is organised under two main headings, with subcomponents:

1. Western Science: effectiveness of interventions on key outcomes, components of intervention and success factors
    a. parent, family or home interventions
    b. school or Early Childhood Education interventions
    c. community or multimodal interventions or multi-setting
    d. other single sector-led interventions
2. Te Ao Māori: effective interventions, components of intervention and success factors

It is important to note that placing interventions under the headings above is inexact, where interventions sometimes display features that could place them in multiple sections. The author has taken the most significant component of the intervention into account when assigning interventions to particular sections. It is also important to note that the outcomes for these interventions cross multiple sectors, and so while an intervention might be delivered within a particular sector, or led by a particular sector, the outcomes affect multiple sectors.

Any studies that presented outcomes broken down by ethnic, social, economic, age or gender groups have been reported.

4.1 Western Science: effectiveness of interventions on key outcomes, components of intervention and success factors

4.1.1 Parent, family or home interventions

Home visiting targeted interventions

Home visiting services have the potential to reach those not accessing centre-based services such as primary care and social welfare agencies. It provides the services in the families' homes, enhancing the ability of the service provider to tailor interventions to the specific home environment, and reducing the need for the client to travel, get childcare or take time off work. There have been many interventions that have been evaluated using randomised control trials (RCTs), and amongst many underwhelming results, as reported by the New Zealand Child, Youth Epidemiology Service (2009), three programmes stand out: Early Start Programme, Nurse Family Program, and Early Head Start. The Early Start Programme and evidence is New Zealand-based while the other two programmes are USA-based. Programmes typically start prior to birth or soon after and last several years. These three show that different positive outcomes are achievable for the children of the parents receiving the programmes:

- Improved use of health services; reduced rates of hospital attendance for injury and poisoning; increased preschool education; increased positive and non-punitive parenting; reduced rates of child problem behaviours at 3 years (Early Start Programme) (Fergusson et al., 2005)
- Fewer instances of verified child abuse and neglect; less frequent restriction and punishment of their children; more appropriate play materials provided; babies seen in the emergency room less frequently; babies seen by physicians less frequently for accidents and poisonings (in first two years). Mothers returned to school more rapidly;

increased number of months employed, had fewer subsequent pregnancies, and postponed the birth of second children an average of 12 months longer (for mothers, 4-year follow-up). Fewer subsequent pregnancies, longer intervals between births, longer relationships with current partners, fewer months using welfare and food stamps (for mothers at 6 years). Higher enrolment in childcare, higher intellectual functioning, higher vocabulary scores, and fewer behavioural problems, higher arithmetic achievement, and less aggression (for children up to 6 years). Fewer instances of running away, fewer arrests, fewer convictions and violations of probation, fewer lifetime sex partners, fewer cigarettes smoked per day, and fewer days having consumed alcohol in the last 6 months (for children at 15 years). Parents of nurse-visited children reported that their children had fewer behavioural problems related to use of alcohol and other drugs (15-year follow up). (Nurse Family Partnership) (Olds et al., 1986; Olds et al., 2004; Olds et al., 1998; Olds et al., 1988)

- Positive impacts on children's cognitive and language development, children have lower levels of aggressive behaviour; higher engagement of their parent in play and sustained attention to object; positive impacts on parental emotional support and on parental support for language and learning; higher parental response to the child's bids for attention, greater encouragement of learning during play, and greater positive regard toward the child; greater proportion of parents reading to their children every day; and less parental spanking of the child. (Early Head Start) (Love et al., 2005)

The key components of these programmes or features of success are:

- Using a social learning model to assess families, build relationships, collaborate on problem solving, provide support to mobilise the families strengths and resources, and work with the family through to 5 years old. Carried out by a family support worker in the home (Early Start Programme – targeted access, ages under 3 years).
- Home visits by specially trained nurses to work with families – from before birth until second birthday, visiting as required (between weekly, fortnightly or monthly). Provided parent education on foetal and infant development, supported health and care of the child; encouraged the involvement of family members and friends in childcare and support of the mother, and the linkage of family members with other health and human services. All using a strengths-based approach (Nurse Family Program – targeted access, ages 0–2 years).
- Child development services delivered through home visits, childcare, case management, parenting education, health care and referrals, and family support. Programmes can be home based, centre based, or a combination of the two (Early Head Start).
- All were carefully implemented with rigorous evaluation

Integrated primary care interventions including home visits.

Primary health care is where a parent or child interacts with the first line of health services (such as a General Practitioner, a Practice Nurse, pharmacy, some local Māori health providers, etc). The interventions that have been subject to randomised control trial (RCT) are listed below, have been universal or targeted and show that different positive outcomes are achievable:

- Less likely to place baby to sleep lying face down, and less likely to feed water to the baby (Healthy Steps for Young Children) (Minkovitz et al., 2001)
- For parents – greater access to parenting services; greater access to substance abuse and mental health services; reduced substance use; reduced use of verbal aggression; improved use of appropriate discipline methods and positive reinforcements for

children's behaviour; increased learning stimulation in the home. For children – reduction in problem behaviours (Starting Early Starting Smart) (Casey Family Programs, 2001)

The key components of these programmes or features of success are:

- All programmes included screening for adult mental health and substance abuse, child developmental screening and facilitated referrals to specialist providers, and the consideration of cultural and linguistic mix of clients.
- Enhanced well-child care with office appointments conducted by a development specialist embedded within the paediatric care, GP care or nurse practitioner care. Also includes six home visits by the development specialist during a three-year period. Also provided development screening via a tool, referrals to specialist services, written resources for parents, parent support and education, community resources, and parent support groups. The specialist and parent were also supported by a telephone support line. Cost per family was $US400 for similar outcomes as the Early Head Start programme (Healthy Steps for Young Children – universal access, ages 0–5 years).
- Case management, patient education, parent support groups, language development, home visitation, reading readiness, domestic violence treatment, mental health services, substance abuse services and other specialist services – all embedded into settings where children and their families access other services and supports (including primary care) (Starting Early Starting Smart – universal access, ages 0–7 years).

Specialist care interventions

These are intensive services for infants, children and parents that have required specialist referral, from a health service, the courts or child protection agencies. The difficulties experienced by these children and families are of a magnitude greater than other situations, and as such the workforces that implement these interventions are typically multidisciplinary and require specific training. The Families Commission (2011a) review on "Safety of Subsequent Children" presents a summary of all of the evidence regarding interventions of child abuse, neglect and maltreatment. Those components in the Families Commission (2011a) review that are based on systematic reviews or controlled trials have already been included in this literature scan. For other lower levels of evidence, readers are directed to the Families Commission 2011a report.

Several interventions subject to RCT show that different positive outcomes are achievable:

- Maintained the IQ of children of depressed mothers at normal levels, particularly verbal IQ (at 3 years); Children maintained rates of secure attachment to depressed mothers at normal levels (at 3 years) (Toddler–Parent Psychotherapy) (Cicchetti et al., 2000; Cicchetti et al., 1999).
- decreased total behaviour problems and decreased traumatic stress disorder symptoms in the child, and mothers showed significantly fewer post traumatic stress disorder avoidance symptoms (Child Parent Psychotherapy) (Lieberman, 2005, 2006).
- significant reduction in children's externalising behaviour problems, reduction of parenting stress and improvement in their parenting practices (Parent–Child Interaction Therapy) (Matos et al., 2006)
- More organised or secure attachment relationship between mother and infant/child, improved child cognitive development and emotion regulation, reduced infant-presentation problems, decreased parent stress, and reduced maternal intrusiveness and mother–infant conflict (Watch, Wait and Wonder) (Cohen et al., 1999).

The key components of these programmes or features of success are:

- Based on attachment theory, weekly meetings over the course of a year with a therapist where the toddler and depressed mother interacted as they normally would. The therapist explored with the depressed mother the natural positive and negative interactions seen and 1) facilitated mother child interaction; 2) addressed maternal representations of child and others; and 3) provided developmental guidance as needed. (Toddler–Parent Psychotherapy – specialised targeted access to depressed mothers, ages 1–3 years).
- Based on attachment theory, weekly meetings over the course of a year with a therapist where the child and mother interacted as they normally would. The therapist targets change in maladaptive behaviours, supports developmentally appropriate interactions, and guides the child and the mother in creating a joint narrative of the traumatic events while working toward their resolution. (Child–Parent Psychotherapy – specialised targeted access to mothers/children after the child experienced marital violence (plus behavioural issues with child or concerns with the mothers parenting).
- Based on attachment theory, weekly coaching sessions for 10–16 weeks to practice skills such as praise, reflection, imitation, description, and enthusiasm, commands and consistent consequences (Parent Child Interaction Therapy – specialised targeted access to families with significant behavioural, emotional and family problems, ages 2–6 years) (Matos et al., 2006; Herschell et al., 2002)
- Based on attachment theory but with a strong additional focus on physical presence of the mother. For half the session the mother gets down on the floor with her infant to observe her infant's self-initiated activity, and interact only at her infant's initiative; the second half is discussing these observations and interactions with the therapist (Watch, Wait and Wonder – specialised targeted access, ages 0–4 years).

Parent behaviour management programmes for conduct problems

Even if prevention programmes were fully implemented, some children would still go on to develop significant conduct problems (Gluckman et al., 2001). There is considerable evidence for programmes that are effective in treating and managing conduct problems. Two detailed reports identifying programmes that are likely to be effective and acceptable within New Zealand have recently been published by the Advisory Group on Conduct Problems (AGCP, 1999; AGCP, 2011). The evidence on effective interventions is strongest in early and middle childhood (3–7 years) (AGCP, 1999). Similar findings have been presented regarding conduct behaviour programmes in another New Zealand review (The Werry Centre, 2010).

Parent Behaviour Management Training (PBMT) involves therapist or facilitator teaching of parents about a range of skills for developing a warm and responsive relationship with their child and the management of behaviour. Skills include limit-setting, modelling pro-social behaviour, monitoring, use of positive reinforcement, avoiding physical punishment, use of time out or loss of privileges and related skills (Gluckman et al., 2011; AGCP, 2009).

In 2009 the Advisory Group on Conduct Problems reviewed the evidence on available programmes for children aged 3–7 years and organised the evidence on effective programmes into the following table. The programmes are classified first by setting and then by intensity of the intervention (universal; targeted to children with significant conduct problems; and intensive, for when targeted programmes have been unsuccessful). The following programmes were identified as likely to be effective in preventing, managing or treating conduct problems in 3–7-year-olds (AGCP, 2009).

Intensity	Parents
Tier 1 – Universal	Triple P (level 1).
Tier 2 – Targeted	Oregon Parent Management Training. Triple P (level 4). Incredible Years (basic).
Tier 3 – Intensive	Triple P (level 5). Incredible Years (advanced). Parent Child Interaction Therapy. Multidimensional treatment foster care (Oregon Type).

In 2011 the Advisory Group on Conduct Problems (AGCP) reviewed the evidence available on parent- and family-based programmes for 8–12 year-olds and categorised programmes into:

1. Recommended: programmes for which there was
    a) evidence from at least two RCT showing efficacy
    b) general agreement in the reviews and meta-analyses that the programmes were effective
    c) Unanimous agreement of the AGCP that these programmes should be included
2. Promising: programmes for which there was a lack of RCT evidence but programmes met the following criteria:
    a) substantial evidence that the programme was effective in either 3–7-year-olds or 12–17-year-olds
    b) indicative evidence that the programme was successful in management of conduct problems in 8–12-year-olds
    c) general agreement in reviews and meta-analyses that the programme was effective
    d) unanimous agreement of the AGCP that these programmes should be included (AGCP, 2011)

Intensity	Programme	Classification
Tier 1 Universal	Triple P (levels 1–3)	Promising
Tier 2 Targeted	Parent Management Training (Oregon)	Recommended
	Triple P (level 4)	Recommended
	Incredible Years Basic	Promising
Tier 3 Intensive	Triple P (level 5)	Recommended
	Incredible Years Advanced	Promising
	Parent Child Interaction Therapy	Promising

There is substantial evidence that theoretically well-founded parent behaviour management programmes such as Oregon Parent Management Training, Incredible Years programmes, Triple P and Parent Child Interaction Therapy, work and may reduce conduct problems by up to 80% (Gluckman et al., 2011; AGCP, 2009; AGCP, 2011). Programmes are most successful with children aged 3–7 years and effectiveness declines with increasing age (Gluckman et al., 2011).

The interventions subject to randomised controlled trial show that different positive outcomes are achievable including:

- When parents change problematic parenting practices and the way they interact with their children, children experience fewer problems (disruptive behaviour), are more cooperative, get on better with other children and are better behaved at school and at home (Triple P – Positive Parenting Program: Sanders et al., 2002; Parent–Child Interaction Therapy: Schuhmann et al., 1998).
- Parents have greater confidence in their parenting ability, have more positive attitudes toward their children, are less reliant on potentially abusive parenting practices and are less depressed and stressed by their parenting role (Triple P – Positive Parenting Program: Sanders et al., 2002; Parent–Child Interaction Therapy: Schuhmann et al., 1998).
- Fewer children and young people engage in violent behaviour or display serious conduct problems based on parents' reports, teachers' reports and independent observations (The Incredible Years: RAND Corporation, 2011).
- Trials of the Oregon Parent Management Training consistently showed a decrease in aversive behaviour with varying effect sizes. Long-term effects have been shown with control group participants being 2.2 times more likely to have associated with antisocial peers, 1.8 and 1.5 times more likely to have engaged in alcohol or marijuana misuse and 2.4 times more likely to have been arrested (AGCP, 2009).

The key components of these programmes, or features of success

All of these programmes share common key characteristics:

- They are based on theory, predominantly on Social Learning Theory.
- They have been subject to RCT evaluation and shown to be effective.
- They have been implemented in a range of settings and countries.
- They have substantial history of development (from the 1970s onwards)
- They offer a tiered approach of implementation.

For example

- parenting intervention based on strong theoretical base including social learning principles (Triple P – Positive Parenting Program, Sanders, 1999).
- multilevel programme of parenting support based on a continuum of increasing intensity (Triple P – Positive Parenting Program, Sanders, 1999; The Incredible Years, RAND Corporation, 2011).
- includes a universal-level population approach seeking to create a broader social environment that supports and acknowledges the importance of parenting and normalises learning to parent (Triple P – Positive Parenting Program, Sanders et al., 2002).
- creating supportive environments for parents to learn new skills, easily accessible learning environments (Triple P – Positive Parenting Program, Sanders, 1999)
- use of real scenarios discussed in a facilitated format where parents problem-solve and come up with solutions (The Incredible Years, RAND Corporation, 2011).

4.1.2 School or Early Childhood Education interventions

Early childhood education

Participation in high-quality early childhood education makes a difference, but not participation in just any early childhood education. A New Zealand review of all research for early childhood education (Mitchell et al., 2008) by the New Zealand Council of Educational Research included 157 studies, of which several were New Zealand studies, and it described the positive outcomes achievable as:

- generally associated with positive outcomes for children in mathematics, reading, and general cognitive or school performance, positive dispositions and social-emotional wellbeing (Effects are usually more marked in the short term.)
- generally associated with positive outcomes for parenting and parent life course outcomes (studying for a qualification, making social connections, increasing confidence, and reducing stress), and for maternal employment (Effects were only studied in the short term.)

The review concluded, "The quality of early childhood education is central to any contribution to positive outcomes for children. What seems to matter most for positive outcomes for children are:

- the quality of staff–child interaction;
- the learning resources available;
- programmes that engage children; and
- a supportive environment for children to work together" (Mitchell et al., 2008).

Centre-based early childhood programmes for conduct disorder

Centre-based early childhood programmes for conduct disorder replace home-based programmes, where children at high risk of conduct disorder attend specialist pre-school education centres (not equivalent to normal pre-school centres). The centres have systematic programmes, with features to mitigate childhood disadvantages that have been shown to reduce behavioural difficulties and improve non-cognitive behavioural skills, including self-control. Despite being centre-based, those that demonstrate long-term effects on crime and anti social behaviour tend to be those that combine with family support services (Gluckman et al., 2011).

The interventions subject to RCT show that different positive outcomes are achievable:

- Lower levels of being held back in school, lower placement in special education, reduced high school drop-out, higher attendance of attending college at age 21, increased maternal earnings, decreased child schooling costs, increased lifetime earnings for the adult child, decreased costs related to smoking in the adult child (Abecedarian Project; Barnett et al., 2007)
- Higher level of schooling completed, higher intellectual and language test scores, higher school achievement tests, better literacy, better attitudes towards school, better attitudes to their own children's schooling, higher employment, higher median salaries, more stable dwelling arrangements, higher proportion of car ownership, higher proportion with savings accounts, lower receipt of social services, reduced overall arrests, lower arrests for violent, drug and property crimes, less jail time, more raised their own children, got along better with their families and less drug use (followed up at ages 3–11 (annually), 14, 15, 19, 27 and 40 years) (Perry Preschool Study; Schweinhart, 2005).
- Attendance in high-quality elementary schools, lower school mobility, higher literacy, avoidance of being held back in school, higher parent involvement in school, avoidance

of child maltreatment, lower rates of juvenile arrest, more years of education, higher rate of high school completion, higher rate of college attendance (Chicago Child–Parent Center Preschool; Ou, 2006; Reynolds et al., 2004).

The key components, or features of success, of these specialist centre-based early childhood programmes are:

- High-quality preschool programme with child:teacher ratio of 1:3 for infants and 1:6 for toddlers. Centre operation was 7.30am–5.30pm, five days a week, 50 weeks per year. Curricula-based programme at the centre addressed all developmental areas (targeted programme, to children at risk of lowered intellectual or social development 0–4 years, Abecedarian Project).
- High-quality preschool education programme, running 2.5 hours a day for five days a week. Child:teacher ratio of 1:5–6. Teachers had bachelor degrees and certification in education. Use of the High/Scope educational model in the preschool. Weekly home visits to acknowledge and support parents as partners in education (not required, but partnership is strongly encouraged) (targeted intervention to 3–4 year olds from low-income families, Perry Preschool Study).
- Programme is neighbourhood-based, school-attached preschool to up to 9 years. The intervention includes free breakfasts, lunches and health checks, coordinated adult supervision, emphasis on reading readiness, and teacher training. Attendance must be at least 0.5 days per week. The preschool component is 3–5 years, half-day structured centre programmes, but not curricular, five days a week for 9-month school-calendar year. Parents attend at least 0.5 day per week (targeted intervention to 3–9 year olds from low-income minority families, Chicago Child–Parent Center Preschool)

Teacher- and school-based conduct programmes

As noted previously, even if prevention programmes were fully implemented, some children would still go on to develop significant conduct problems (Gluckman et al., 2001). Two detailed reports reviewed the evidence on preventing, managing or treating conduct problems in 3–7-year-olds and summarised this into the following table (AGCP, 2009):

Intensity	Teachers/schools
Tier 1 – Universal	School-wide Positive Behaviour Support
	Incredible Years teacher classroom management
Tier 2 – Targeted	First Steps to Success
Tier 3 – Intensive	RECESS

As described previously, in 2011 the Advisory Group on Conduct Problems (AGCP) reviewed the evidence available on teacher, class and school programmes for 8–12-year-olds and categorised programmes into recommended and promising. Their findings were:

Intensity	Programme	Classification
Tier 1 Universal	Good Behaviour Game	Recommended
	School-Wide Positive Behaviour Support	Recommended
	Teacher Behaviour Management Training	Promising
Tier 2 Targeted	Advanced Teacher Behaviour Management Training	Promising
	Check, Connect and Expect	Promising
	CLASS	Promising
Tier 3 Intensive	Check and Connect	Promising
	RECESS	Promising

Teacher behaviour management training

As with Parent Behaviour Management Training (PBMT), Teacher Behaviour Management Training (TBMT) targets conduct disorder using principles of behaviour theory. The programmes aim to provide teachers with knowledge and skills to better manage disruptive and antisocial behaviour at school and to encourage pro-social skill adoption (AGCP, 2009; AGCP, 2011). There are a number of well validated programmes including: the First Step to Success Programme; Reprogramming Environmental Contingencies for Effective Social Skills (RECESS); Contingencies for Learning Academic and Social Skills (CLASS); Check, Connect and Expect; and Incredible Years Teacher Classroom Management.

The interventions subject to RCT show that different positive outcomes are achievable including:

- RCT studies of the First Step to Success programme showed the programme taught relationships between choice and consequences, developed social, behavioural and academic competencies that allowed effective coping and reduced the long-term probability that at-risk children would adopt delinquent behaviours in adolescence (Walker et al., 2001).
- The RECCESS programme reduced the level of playground aggression from a mean of 64 acts an hour to a mean of four per hour over a three-month period. The effect size on reduction in playground aggression was 0.97 (AGCP, 2011).
- In a large two-year 18-school RCT of Check, Connect and Expect, 60% of students had moved from the at-risk range to the normal range (AGCP, 2011).
- The PASS programme resulted in improvements in task engagement for children identified as the lowest performing children in the class to the normal range (AGCP, 2009).
- The two RCTs of CLASS resulted in improvements in classroom behaviour of approximately 11% with effect sizes of 0.5 – 1.0 (AGCP, 2009).

The key components of these programmes, or features of success

All of these programmes share common key characteristics:

- They are based on theory.
- They have been subject to RCT evaluation and shown to be effective.
- They have been implemented in a range of settings and countries.

- They have substantial history of development (from the 1970s onwards).
- They offer a tiered approach of implementation (AGCP, 2009; AGCP, 2011).

For example:

At tiers two and three, programmes focus on managing specific conduct problems. The programme skills include differential reinforcement of improving vs. non-improving behaviour. These programmes often include the use of a "para-professional" or coach who is not the teacher (for example, Check, Connect and Expect) or involve external modelling of the programme (for example, the First Steps to Success, CLASS programme, and RECESS programme) (AGCP, 2009; AGCP, 2011).

School environment conduct behaviour programme

School environments play a substantial role in the prevention and management of conduct behaviour problems (Gluckman et al., 2011). One intervention, the School-Wide Positive Behaviour Support Programme is a decision-making framework that helps the principal and senior staff to select, integrate and implement evidence-based academic and behavioural practices at the school. It targets all students, and the decision-making framework has four areas:

- data for decision making
- measurable outcomes supported and evaluated by data
- evidence-based practices that show outcomes are achievable
- systems to support implementation.

At the tier one or universal level, programmes are based on classroom management strategies that reward children for not engaging in aggressive or disruptive behaviours (for example, the Good Behaviour Game). Programmes operating at a whole-school level (for example, the School-Wide Positive Behaviour Support Programme) use a broad range of systemic and individualised strategies that promote social and learning goals and minimise problem behaviours for all students (AGCP, 2009; AGCP, 2011).

The interventions subject to RCT show that different positive outcomes are achievable including:

- After implementing an early version of the School-Wide Positive Behaviour Support Programme, disciplinary referrals reduced by 50% in the trial school and increased by 12% in the control school (AGCP, 2011).
- Following implementation of the SWPBS, the behaviour of children classified with conduct problems using Walker and Serson's (1992) SSBD screening system improved to scores similar to the control children (AGCP, 2011).
- In an RCT of the Good Behaviour Game, with implementation for one year in grade 1 and follow-up six years later with no subsequent intervention, students were much less likely to have conduct disorder (4% vs. 10%) and less likely to have been suspended during the previous school year (22% vs. 34 % (AGCP, 2009).

The key components of these programmes or features of success are:

- Redesign the school environment to reduce problem behaviour, establishing a school-wide or class-wide system.
- Provide teachers with new skills to address problem behaviour, ensuring teacher buy-in.
- Consistently reward appropriate behaviour while withholding rewards for problem behaviour.

- Put in place active and ongoing data collection systems that can be used to guide future change (AGCP, 2009; AGCP, 2011).

School reform in New Zealand primary schools

School reform that focuses on "a process of collective inquiry using evidence of learning, teaching and achievement patterns" has been shown to be effective (Gluckman et al., 2011). New Zealand models of school reform have occurred at the primary and secondary school levels. The positive outcomes from New Zealand research in primary schools has been summarised by McNaughton et al. (2009) and are:

- substantial acceleration of reading comprehension in decile one schools (on average one year additional gain over nationally expected progress over three years) (for both mainstream and bilingual Samoan classes)

The features of success identified by McNaughton et al. (2009) are:

- more effective teaching is achieved by teachers being seen and treated as professional experts, teaching being an expertise. In this, teachers are technically adept, and innovative and adaptable.
- use is made of local context and "evidence" about individual students to personalise instruction, and developing local patterns of teaching.
- school professional learning communities (teachers, leaders, other school professionals, researchers, district managers, Ministry of Education) are used to implement effective teaching practice.
- partnerships are needed by the actors above to collectively focus on how to improve teaching and learning, and to solve problems.
- leadership is taken for establishing goals and expectations of the setting and students, aligning resources to priority teaching goals, planning and evaluating teaching and the curriculum, supporting teacher learning and development, and creating a supportive environment.
- effective programmes in schools are built by fine-tuning existing practices.

School reform in New Zealand secondary schools

A review of Te Kotahitanga, a culturally responsive model introduced to 33 New Zealand secondary schools to enhance Māori student achievement, has been undertaken for the Ministry of Education (Meyer et al., 2010), and it has shown these positive outcomes:

- Māori student enrolment in year 11 increased on average by 250% from 2005 to 2008.
- Māori students at Te Kotahitanga schools increased performance in maths, science and physics.
- improved classroom teaching was evidenced by more teachers scoring moderate or high on the Effective Teaching Profile.
- students reported "enhanced valuing of their identity as Māori learners and increased culturally responsive practices".

Critical factors for success were summarised by the Ministry of Education Review (Meyer et al., 2010):

- a lead facilitator to coordinate and lead Te Kotahitanga in the school
- professional development for all staff
- mastery by teachers of the Effective Teaching Profile
- willingness from leaders to change systems and structures.

Learning by vulnerable learners in the education sector

There is a wealth of evidence regarding what works for children facing one or more aspects of disadvantage. It was identified too late in the development of this review for inclusion, but is available for consideration at http://www.minedu.govt.nz/theMinistry/PolicyAndStrategy/KaHikitia/KeyEvidence/KeyReferences.aspx.

School-based nutrition education programmes

There is a substantial amount of good-quality evidence that school-based programmes are effective at improving nutritional intakes and other outcomes for several years at least (Gluckman et al., 2011). There are many well validated interventions, two of which are from New Zealand (APPLE and Project Energize) and the positive outcomes achievable are:

- reduced BMI and reduced likelihood of being overweight (follow-up two years after the intervention ceased) (APPLE project; Taylor et al., 2008)
- reduced rate of rise in systolic blood pressure; reduced rate of accumulation of body fat (RCT follow up at two years); time to run 550m was 13% faster for all children and 8% faster for Māori children; reduced waist circumference (6–8 years, 9–11 years); fewer children overweight or obese (6–8 years, 9–11 years and Māori); improved knowledge and attitudes about healthy eating and activity, improved fitness, higher numbers played organised or team sports; schools have made health changes to in-school nutrition and activity policies and practices (at three years based on evaluation against national and local comparison groups) (Project Energize) (Rush et al., 2011; Project Energize et al., 2011)
- reduced prevalence of obesity, greater remission of obesity, reduced television hours, increased fruit and vegetable consumption (Planet Health) (Gortmaker et al., 1999)
- reduced total energy from fat and saturated fat, increased fruit and vegetable intake, vitamin C intake and fibre intake (Eat Well and Keep Moving) (Gortmaker et al., 1991)
- fewer children overweight during the two-year study, fewer children overweight at the end of the two-year study (School Nutrition Policy Initiative) (Foster et al., 2008)
- improved total, LDL and HDL cholesterol; improved body mass index and skinfold measures; lower increase in total fat, saturated fat and energy intakes; increased leisure time physical activity and fitness (all at end of 6 year intervention) (Health and Nutrition Education Programme) (Manios et al., 2001)
- less television watching time (Dobbins et al., 2009)
- reduced blood cholesterol and other biomarkers associated with later risks of diabetes and heart disease (Dobbins et al., 2009; Skinner et al., 2010; Manios et al., 2002)
- increased physical activity, improved body composition, increased aerobic capacity/fitness and improved blood lipids (After School Programmes) (Beets et al., 2009).

The key components of these programmes or features of success are:

- a community-based lifestyle and exercise programme was delivered to primary school children by activity coordinators (0.5FTE/school). The main components were activity programmes involving parents and community volunteers (non-curricula involvement at recess, lunch and after school); increased availability of sports equipment; encouragement of “free play”. Nutrition education was provided on sugary drinks in science lessons; a community-based healthy eating resource, an interactive card game;

provision of free fruit for six months; free water coolers in each school (primary schools and their community; APPLE Project).

- staff (Energizers) had between six and eight schools each to act as agents of change rather than additional teaching staff. Components included: modelled classes on movement skills, huff and puff fitness, and modified games, all designed to keep the children moving as much as possible; promoted active transport, lunchtime games, bike days and leadership training for students; canteen makeovers; healthy fundraising; curricula-based resources for sugary drinks, breakfast, healthy lunches and snacks on a budget; nutrition ideas in each weekly school newsletter; three parent-education sessions; integrated nutrition lessons; fridge magnets and laminated cards; gala open days and edible gardens. Each school had a memorandum of understanding to participate and an individualised action plan (primary schools and their community, Project Energize).
- theory-based, two-year school-based interdisciplinary intervention, health curricula sessions in four subject areas and physical education, focussed on decreasing television watching, decreasing consumption of high fat foods, increasing consumption of fruit and vegetables and increasing moderate intensity activity (Planet Health).
- theory-based, two-year school-based interdisciplinary intervention, 50-minute curricula sessions building health into 13 lessons per year across maths, science, English, and social studies. Behavioural changes of focus were decreased consumption of high-fat foods, increased consumption of fruit and vegetables, reduced television viewing to fewer than two hours per day, and increased moderate and vigorous physical exercise (Eat Well and Keep Moving).
- school-based policy intervention consisting of: a school self-assessment of their environment; staff training; 50 hours of food and nutrition education per student per school year (integrated into the curricula); nutrition policy setting out what foods could be sold and served, and vending machine policy; social marketing regarding meal participation, consumption of healthy snacks and beverages; family outreach via school meetings, report card nights, parent education meetings and weekly nutrition workshops (School Nutrition Policy Initiative).
- a health, nutrition and exercise programme to foster healthy dietary and general lifestyle habits in children in primary schools, a six year programme (Health and Nutrition Education Programme).
- changes to the school curricula supported by printed educational materials are the minimum required – additional features include fostering positive attitudes towards physical activity, role-modelling by school staff, parental involvement, involvement of public health staff to draw in resources for physical activity from the community (Dobbins et al., 2009).
- after-school programmes gave information related to physical activity levels and dietary information, with involvement in activities, and choosing/making foods (After School Programmes).

Peters et al. (2009) carried out a systematic review of the effectiveness of school health promotion programmes, particularly interested in the elements of effectiveness. The five main elements identified were:

- use of theory
- addressing social influences especially social norms
- addressing cognitive behavioural skills
- training of facilitators
- multiple components.

Prevention of depression in schools

The Resourceful Adolescent Programme (RAP) Kiwi programme delivered in schools is built on an earlier international trial showing effectiveness, though a subsequent real-world trial (not in New Zealand) has not been effective. RAP Kiwi is currently being investigated further in New Zealand by the Health Research Council.

To confirm that prevention of depression is worthwhile pursuing in the school environment, Gluckman et al. state, "A recent review of all the evidence shows for the first time that depression prevention programmes probably do reduce depressive disorder and refining and enhancing the most effective of interventions should be considered" (Gluckman et al., 2011).

School-based bullying prevention and treatment interventions

Bullying is repeated aggressive behaviour (physical, verbal, or psychological) to intimidate, harass or harm a victim. While bullying occurs at all ages and across all sectors of society, a large number of interventions have either been set within schools or involved students. A recent meta-analysis showed that, overall, school-based anti-bullying programmes are effective in reducing bullying and victimisation (being bullied). On average, bullying decreased by 20% – 23% and victimisation decreased by 17% – 20% (Farrington and Ttofi, 2009). After additional analyses the most important elements of the programme that were related to a decrease in bullying and victimisation were:

- parent training/meetings
- disciplinary methods
- the duration of the programme for children and teachers and
- the intensity of the programme for children and teachers.

The programmes worked better with older children (Farrington and Ttofi, 2009).

Kia kaha is a whole-school anti-bullying programme developed and promoted by the Youth Education Service of the New Zealand Police. The evaluations undertaken are promising, but they lack internationally recognised levels of rigour (Gluckman et al., 2011).

Secondary-school-based smoking prevention and interventions

School-based programmes are effective in preventing smoking (Gluckman et al., 2011). Prevention success requires interventions to:

- address adolescent intentions
- address beliefs and attitudes regarding smoking
- take place over multiple sessions
- be interactive in delivery
- teach refusal and social skills related to smoking.
- have a parent focus on smoking prevention.

Gluckman et al. (2011) also note the importance of wider, evidence-based smoking prevention approaches for the whole population, such as expanding smoking treatment, telephone quitlines, nicotine replacement, internet-based treatments, legislation for smoke-free areas, advertising bans, health warnings, health education and tobacco pricing.

Secondary-school-based drug (including cannabis) and alcohol programmes
There is substantial evidence on the multitude of worldwide alcohol and drug education programmes that they increase young people's knowledge but do not change behaviour (Gluckman et al., 2011). One exception to this is the USA multicultural school-based "Keepin it REAL" programme aimed at students 12–14 years old.

The positive outcomes achievable are:

- smaller increase in alcohol, cigarette and marijuana use in the intervention group; altered personal and descriptive norms regarding drugs; increased use of resistance strategies (Hecht et al., 2003).

The key components of this programme were:

- It was curriculum-based.
- It consisted of 10 lessons of 45 minutes each, taught by trained teachers.
- Booster sessions were delivered the following year.
- Three possible session types were available for use depending on the ethnicity of the class – Black/white; Mexican American; multicultural.

4.1.3 Community or multimodal interventions or multi-setting interventions

Self-control
Self-control has been described as "the essential ingredient" amongst all other non-cognitive skills. Self-control is a non-cognitive skill allowing a person to "scan the horizon so as to be prepared for what might happen to you, for envisaging your own future possibilities, for planning ahead to get to where you want to go, for controlling your temper when life frustrates you, for getting along with other people and attracting their help and support, and for waiting for the good things that are worth waiting for, instead of opting for short-term enticements" (Gluckman et al., 2011).

A recent meta-analysis of 34 randomised clinical trials aimed at increasing children's self-control showed positive effects for 40 of the 45 data sources included (Piquero et al., 2009). Because it was a meta-analysis, all programme types were included, making it difficult to determine what features are most important. However, key features reported were:

- a range of programmes were effective.
- programmes emphasised skill acquisition using behavioural/cognitive-behavioural techniques (largely derived from social learning techniques).
- approaches included behavioural reward schemes, cognitive coping training, and role-playing with video tapes.
- programmes that worked best were smaller, tightly focused and of shorter duration; compared with larger, more diffuse, long-term programmes.
- the participants in the studies included high-risk and general population.

The interventions reviewed by Piquero et al. (2010) showed that the main outcomes were improved self-control and reduced delinquency.

Gluckman et al. (2011) caution that "Although the data summarised by Piquero et al are promising, the definitive answer about what works best is not in yet, and more programmes should be designed and evaluated rigorously". Drawing on the findings from the Dunedin Multidisciplinary Health and Development Study, Gluckman et al. (2011) suggest that:

- "high intensity intervention during early childhood such as the Perry Preschool Program may be more effective than interventions that occur later in development"
- there is a gradient of self-control. Self-control interventions work to improve those at the bottom, middle and top of the gradient. For example, those beginning with low self-control improve, as do those beginning with high self-control. There is universal benefit for the programme, avoiding stigmatisation.

Multimodal conduct behaviour programmes

Multimodal programmes address entrenched problems in adolescents (Gluckman et al, 2011). These programmes are described as multimodal because they work with the family, the school, teachers and peers.

As described previously, in 2011 the Advisory Group on Conduct Problems (AGCP) reviewed the evidence available on multimodal conduct behaviour programmes for 8–12-year-olds and categorised programmes into recommended and promising. Thier findings were:

Intensity	Programme	Classification
Universal	Linking Interests of Families and Teachers (LIFT)	Promising
Targeted	Coping Power	Promising
	Stop Now and Plan	Promising
Intensive	Multi-dimensional Treatment Foster Care	Recommended
	Teaching Family Homes	Recommended
	PSST + PMT (Kazdin Method	Promising
	Multi-systemic Therapy Triple P (level 5)	Promising

At tier one or universal level, programmes such as Linking Interests of Families and Teachers (LIFT) are designed to promote positive behaviour across school and home settings (AGCP, 2011).

Tier two programmes have interventions involving both children and parents and use Cognitive Behavioural Theory. Programmes identified as promising are Coping Power and Stop Now and Act (SNAP) (AGCP, 2011).

Tier three programmes include Multidimensional Treatment Foster Care (MTFC), an out-of-home programme based on Social Learning Theory, and Teaching Family Homes, a programme where children are placed with specially trained foster parents who act as therapists and teach children a range of behavioural skills.

Another tier three multimodal programme, known as the Kazdin Method, combines problem-solving strategies for children based on Cognitive Behavioural Training in conjunction with Parent Management Training. Multi-systemic Therapy (MST) targets children's social networks that are contributing to their antisocial behaviour (AGCP, 2011).

There are several well validated programmes and the positive outcomes achievable are:

- The LIFT programme RCT showed children in the intervention group were less aggressive in the playground and perceived more positively by their teachers and parents and at the end of the programme were no more aggressive than normally developing peers (AGCP, 2011).
- Children who were part of the SNAP intervention showed lower delinquency and aggression scores immediately post-intervention and at one-year follow-up (AGCP, 2011).
- RCT of the Kazdin Method showed fewer child behaviour problems as rated by parents and teachers immediately post-treatment and at one-year follow-up (AGCP, 2011).
- Effectiveness studies for the Coping Power Program have shown lower rates of substance abuse and positive effects in measures of social competence, self-regulation and parenting practices at one-year follow-up (Lochman & Wells, 2003).
- Multiple RCT of Multi-systemic Therapy (MST) have show reduced arrest rates up to five years post-treatment and decreased rates of recidivism. MST has been trialled in New Zealand with similar observed results as in the US RCTs (AGCP, 2011).
- RCT results from Teaching Family Home Model show greater gains both socially and academically while in the programme but no significant differences in offending one-year post-treatment (Kirigin et al., 1982;AGCP, 2011).
- RCTs of Multidimensional Treatment Foster Care (MTFC) have shown an increase in successful reunification with family, increase in adoption success, decreased behavioural problems and for adolescents decreased offending and arrests post-treatment (AGCP, 2009).

The key components of these programmes or features of success are:

- All programmes use non-punitive problem-solving approaches.
- All programmes are based on clear theoretical frameworks that include Social Learning Theory and Cognitive Behavioural Psychology.
- All programmes are manualised and therefore transferable to new contexts.
- RCT evaluation has been undertaken (AGCP, 2009; AGCP, 2011).

Youth social marketing campaigns

A recent review by Thornley et al. (2010), funded by Health Research Council and Ministry of Youth Development, asked the question, "What works in Social Marketing to young people?". There was evidence, especially for tobacco control, nutrition, physical activity and sexual health campaigns, showing youth-focused social marketing can change behaviour and can be applied to other topic areas as well. Four of the 15 studies included in the review were from New Zealand. Thornley et al. (2010) summarised the positive behavioural change outcomes (not attitudinal or intentions) from these campaigns:

- reduced youth smoking prevalence across all students, reduced smoking initiation, reduced number of cigarettes smoked by smokers, increased prevalence of smoke-free youth;
- reduced marijuana smoking by at-risk youth
- reduced tobacco, alcohol and marijuana use
- increased free-time physical activity
- increased rate of condom use in sexually active youth.

The features of effective interventions as summarised by Thornley et al. (2010) were:

- a youth-centred approach with strong youth involvement using methods and channels that appeal to youth, including use of technology and new media

- appropriate campaign messages that empower youth by using strong, emotional, positive messages that are strategically designed and integrated
- application of commercial marketing success factors including branding, high exposure to the marketing intervention, and use of "counter-marketing" to challenge competitors and promote positive alternatives
- ethnic and age-specific approaches, such as Māori and Pacific campaigns or targeting to younger adolescents or "tweens"
- applying theory to the design of social marketing programmes and undertaking extensive formative research and robust evaluation
- a comprehensive approach that is multi-faceted and long term, informs policy and is well resourced and funded (Both national and local linkages are important, as are collaboration and partnerships with key organisations.)

A 2008 Ministry of Social Development review to inform the campaign for action on family violence drew largely on risk-factor research and some non-controlled interventions to inform what might work. Suggestions for the prevention of child maltreatment at a population level were:

- Establish a positive view of children.
- Change attitudes and beliefs about physical punishment.
- Reduce adult partner violence and education about the impact of adult partner violence on children.
- Address adult alcohol and substance abuse.
- Create accessible and responsive support systems that parents can easily engage with.
- Provide parent education and skills to all parents.

One-stop shops / community youth health centres

Youth One Stop Shops provide access to a range of services in youth-friendly settings, including health, social, education and/or employment services with the ability to refer to secondary or tertiary services as required. Some Youth One Stop Shops offer outreach, mobile and satellite services and/or evening clinics to increase access opportunities for young people. The most common health services provided include general health / primary care, sexual and reproductive health, family planning and mental health services. A formative evaluation carried out for the Ministry of Health on youth one stop shops did not collect pre- and post- figures, nor did it use any control groups. Robust outcome data was therefore not available and there is no evidence for or against altered outcomes (Communio, 2009).

Primary prevention programmes about sex education in the classroom, family planning, and community programmes

Gluckman et al. (2011) describe a number of reviews that provide evidence regarding the effectiveness of sex education. Only one of those reviews was systematic and used RCTs as the sole source of evidence (Di Censo, 2002). After reviewing 26 interventions delivered in the classroom, family planning clinics and community programmes, it found these interventions had no effect on outcomes, either positively or negatively. The interventions did not delay the initiation of sexual intercourse, improve use of birth control among young men or women, or reduce the number of pregnancies in young women. More general reviews cited in Gluckman et al. (2011) provide more positive outcomes, however bias and confounding may explain the findings and so are not repeated here.

Alcohol
There is a substantial evidence base about what works for the prevention, treatment and management of alcohol-related problems. Gluckman et al. (2011) note 42 different effective strategies and summarises them into these six areas:

1. Increase alcohol taxation, additional taxes on youth-targeted beverages, differential prices for high-alcohol-content beverages – to reduce total and heavy drinking, drinking by younger drinkers and alcohol-related harm.
2. Regulate the availability of alcohol to reduce total drinking and alcohol-related harm. This includes restrictions on the hours or days of sale; rationing; Government monopoly of retail sales; reduced density of alcohol outlets/establishments; different availability by alcohol strength; and increased age of purchase and enforcement.
3. Regulate drink driving to reduce rates of drink driving, including lowering breath/blood alcohol limits for adults and youth; visible enforcement (check points, random breath testing) and strong penalties (licence suspension); and graduated youth licensing.
4. Restrict alcohol advertising and marketing to reduce drinking in young people. Voluntary self-regulation by industry is ineffective.
5. Regulate and enforce age of supply and levels of intoxication for drinking in alcohol outlets/establishments, staff training, server liability – to reduce alcohol consumption and alcohol harm.
6. Provide effective treatment services such as brief interventions, cognitive behavioural therapy, motivational enhancement therapy and related therapies, pharmacological therapies, mutual aid treatments. Best practice guidance exists for adolescent populations.

4.1.4 Other single-sector-led interventions

Residential conduct behaviour interventions
When children or adolescents need to be removed from their home due to conduct problems or because of care and protection issues, programmes have been shown to be effective (Gluckman et al., 2011):

The key components of the programme or features of success are:

- placement with specially trained foster parents, who are supported by a team of therapists
- placements lasting between 6–9 months (Multidimensional Treatment Foster Care) (Hahn et al., 2004)
- structured behaviour management system for the child, family therapy and support for the child's birth family (Multidimensional Treatment Foster Care)
- up to six children placed in one family (Teaching Family Homes) (Kirigin et al., 1982)
- foster parents teach social skills, problem-solving, emotional control and related behavioural skills (Teaching Family Homes).

Health services treatment of depression
Cognitive behavioural therapy and interpersonal therapy are effective treatments of depression in children and adolescents, particularly interpersonal psychotherapy for adolescents, and cognitive behavioural therapy (The Werry Centre, 2010). Features of effective interventions include:

- delivery via individual therapy or group therapy

- courses of 8–12 sessions.

Further information is available from the guidelines for treatment of child and adolescent depression (National Institute for Clinical Excellence, 2011; Birmaher, et al, 2007).

Use of computer-based cognitive behavioural therapy has shown promising results in a pilot RCT in New Zealand (The Journey) (Gluckman et al., 2011). Use of anti-depressants in conjunction with a child and adolescent psychiatrist, delivered with support from the Child and Adolescent Mental Health Services "is effective in reducing symptoms of depression, though actual cure rates are modest" (Gluckman et al., 2011), and "shows improvements" (The Werry Centre 2010).

Health services treatment of attention deficit hyperactivity disorder

The stimulants Methylphenidate and Dexamphetamine are the best supported treatment (The Werry Centre, 2010). For the child they are effective for control of hyperactivity and aggression, and effective for reducing comorbid conduct disorder. For the adolescent they are effective for treatment of hyperactivity and aggression, and effective for reducing comorbid conduct disorder. Behaviour therapy and Parent therapy were the best supported psycho-social treatments, but was less effective than stimulants, but may mean a lower dose is possible (The Werry Centre, 2010)

Treatment of substance abuse

Structural-Strategic Family Therapy has been shown to be "effective in improving parent–adolescent relationships and in turn reducing adolescent drug use" (The Werry Centre, 2010).

Treatment of childhood autism

Applying behavioural interventions in home and school settings is effective. Significant and persistent gains in IQ, daily living skills, communication and the ability to socialise, as well as a reduction in behaviour problems are seen (The Werry Centre, 2010)

Antenatal care

The Families Commission (2011) reviewed antenatal care in their review of effective programmes for complex families (Families Commission, 2011). The major study cited (Banta et al., 2003) has been superseded by a supplementary paper (Di Mario et al., 2005) which identifies many components of effective antenatal care and the outcomes delivered from those effective interventions. Many antenatal interventions are universal and have many low-risk women within them and therefore are not repeated here. The full list of 17 interventions is available in the paper by Di Mario et al. (2005).

Primary care screening of depression

A screening instrument in use in New Zealand (PHQ-A, as recommended by the New Zealand guidelines for the detection of common mental illnesses and management of depression) was one of the tools included in a systematic review of effectiveness. It is suitable for use in primary care, and correctly identifies adolescents with depressive disorder (Williams et al., 2009). Of those children and adolescents correctly screened, the review summarised that selective serotonin reuptake inhibitors, psychotherapy, and combined treatment are effective in reducing depressive symptoms.

Prevention of suicide by social service providers

Gluckman et al. (2011) states "The Towards Wellbeing Programme of Child Youth and Family is a good example of a project for which evidence of effectiveness in reducing both suicide and attempted suicide has been provided". This service is delivered by Clinical Advisory Services Aotearoa to support social workers who have to manage a child and/or young person with suicide ideation or an attempted suicide. Support is provided by clinical psychologists with expertise in the field of prevention of youth suicide. This covers:

- a help desk
- help to assess the degree of risk based on risk factors
- services required from Child Advisory Services Aotearoa and/or Mental Health to minimise risk
- the development of a risk management plan
- ongoing support and advice for managing the risk plan
- advice around case closure to ensure the risk of suicide has been addressed
- advice for social workers to manage a client if the risk is deemed to be low and will not be picked up by Child Advisory Services Aotearoa.
- maintaining a monitoring and case audit system for young people identified to be of risk of suicide
- providing specialist advice and monitoring to support Child Youth and Family social workers and their supervisors to enhance service provision and decrease risk
- providing advice about the targeting of welfare and mental health service to those at risk of suicidal behaviour
- providing Child Youth and Family with up-to-date suicide prevention information about best practice, training, research, tools and statistics (Clinical Advisory Services Aotearoa, 2011).

Housing interventions

The Centre for Housing Research, Aotearoa New Zealand report (James et al., 2010) noted seven key areas for intervention to improve housing, however the amount of controlled trials to draw on was limited to two, regarding insulation and home heating. The positive benefits to the interventions included:

- 0.5℃ increase in winter bedroom temperatures and a 2.3% decrease in relative humidity (despite energy consumption in insulated houses being 81% of that in uninsulated houses); less hours per day in bedrooms below 10℃; reduced proportion of participants self-rating their health as poor or fair; fewer self-reports of wheezing in the past three months; fewer self-reports of children taking a day off school; fewer self-reports of adults taking a day off work; fewer visits to general practitioners (Housing, Insulation and Health Study) (Howden-Chapman et al., 2007)
- "the average daily temperature increased between one and two degrees Celsius and people felt warmer; Condensation was reduced; less mould and mouldy smells; Levels of nitrogen dioxide were halved; Nitrogen dioxide was associated with coughing in children with asthma; Children with asthma reported less coughing and wheezing; Children reported fewer episodes of cold and 'flu'; Children had on average one day less off school during the winter; Children had on average fewer visits to the GP" (Howden-Chapman, 2007), "fewer visits to a doctor for asthma, fewer visits to a pharmacist for asthma, fewer reports of poor health, less sleep disturbed by wheezing, less dry cough at night, and reduced scores for lower respiratory tract symptoms" (Howden-Chapman et al., 2008) (The Housing, Heating and Health Study).

The components of these effective interventions were:

- "ceiling insulation, draught stopping around windows and doors, and fitting sisalated paper beneath floor joists and a polythene moisture barrier on the ground beneath the house. The insulation, which was free to householders, was to government specifications (resistance value 2.4) and was installed by trained community teams" (Housing, Insulation and Health Study).
- new heaters, chosen by the householder, either a heat pump, wood pellet burner or a flued gas heater were installed into previously insulated homes (Housing, Heating and Health Study).

Parents as First Teachers (PAFT)

Parents as First Teachers, is a New Zealand home-based early childhood education programme that has been run in New Zealand since 1991, aimed at supporting parents and families with young children. PAFT provides free, practical support and guidelines to encourage and support parents as their child's first and most important teacher. An RCT undertaken very soon after rollout of the programme, prior to implementation issues being ironed out, showed no evidence of effectiveness. Another evaluation undertaken by the Ministry of Social Development is near completion and has used propensity sampling to create a matched control group. The findings of this evaluation will be available in 2012.

What works to reduce offending behaviour in children and young people

There is a substantial amount of good-quality research in this area but it was beyond the year-scope of this literature scan. Interested readers are directed to these four general reviews:

- McLaren, K. (2000). Tough is not enough: Getting smart about youth crime. Wellington: Ministry of Youth Affairs.
- Maxwell, G., Kingi, V., Robertson, J. et al. (2004). Achieving effective outcomes in youth justice. Wellington: Ministry of Social Development
- McLaren, K. (2002). Youth development literature review. Wellington: Ministry of Youth Affairs.
- McLaren, K. (2010). Alternative actions that work: A review of the research on police warnings and alternative action. Wellington: New Zealand Police.

4.2 Te Ao Māori: Effective interventions, components of intervention and success factors

When undertaking a literature scan of what works, one approach is to focus solely on evidence of effectiveness from reviews drawing on randomised control studies. That has been a substantial component of this work. However such an approach typically excludes interventions by/with/on indigenous populations. This is not acceptable within New Zealand and so this section of the literature scan begins to explore the best available evidence for Māori. Such an approach is supported by Gluckman et al. (2011) who state:

> "…*while it is possible to incorporate issues relating to cultural appropriateness into programmes developed and evaluated within a Western Science framework, the development of culturally responsive programmes fundamentally requires the adoption of Māori concepts, values and world view into the process of programme development implementation, and evaluation.*"

The approach proposed by Gluckman et al. (2011) to reconcile Western Science and Kaupapa Māori perspectives is to acknowledge the legitimacy, strengths and distinctiveness of each. They are not the same and that's OK. Each can inform the development of the other and add richness to each. Finally, effectiveness is determined by consensus based on knowledge from both perspectives. This approach is known as the He Awa Whiria (Braided Rivers) model (MacFarlane et al., in press).

> "*In New Zealand an effective policy, programme or intervention is one that leads to a positive change for individuals and collectives, who must also feel that their cultural and other needs have been valued.*" (Gluckman et al., 2011)

Gluckman et al. (2011) further note that there are two main approaches used for intervention or development:

1. mainstream approaches that have "specific inclusion of Māori philosophies, responsive policies and practices" (Examples include central government policies such as closing the gaps and reducing inequalities, and education sector programmes such as Te Kotahitanga.)
2. approaches based on Te Ao Māori with a "high degree of Māori control, culturally based and acknowledging the historical impacts of colonisation, urbanisation and institutional bias" (Examples includes Kohanga Reo, Kura Kaupapa Māori, Māori health providers.)

For those wanting additional insight into this joint research approach and the Te Ao Māori research approach, the Gluckman et al. (2011) and Families Commission (2011) reports are recommended.

Education success

The positive outcomes for Māori academic success within mainstream school are presented in the previous section of this literature scan. The positive outcomes for the immersion education wharekura model, as described in the Families Commission report (2011), are promising:

- NCEA pass rates of students from Māori immersion education (9 wharekura) were compared with Ministry of Education rates for Māori from mainstream schools. The pass rates in the wharekura were 97% for level one (72% national average); 94% for level two (76% national average) and 93% for level three (70% national average) (Selby, 2010).

Māori completing PhDs at University has expanded rapidly in the last decade. The Families Commission report (2011) described Māori as having one of the highest levels of PhD completion of any indigenous population in the world. Data presented from the Ministry of Education showed 350 Māori enrolled in PhD study in 2010. Such outcomes are the result of dedicated programmes launched by Māori academics, iwi and communities.

A case study report of five kura (Tākau et al, 2010) reports the key attributes of successful kura are:

- an unwavering commitment to the values and principles of Te Aho Matua, giving effect to that in their kura every day, in every way
- collective, evolutionary, responsive, and reflective leadership shared between a strong tumuaki and a supportive whānau, grounded in Te Aho Matua and forged by shared experience and common goals
- an educational approach that ultimately acknowledges and "respects the dignity and the divinity of the child", expressed as an absolute focus on nurturing the potential of the child, on developing all that the child can be and is meant to be

- a fervent and ongoing commitment to the revitalisation of the Māori language, best demonstrated by the steadfast adherence to strict language policies
- affirmation through dedicated curriculum and daily practice, that identity for the child, as a member of whānau, hapū and iwi is critical for the development of the child's self-image and esteem
- learning environments that make evident the value of a Te Aho Matua worldview to the child
- teaching and learning practice underpinned by Māori principles e.g. manaakitanga and seeding those principles in the kura through daily practice, thus embedding them into the social fabric of the kura
- explicit aspirational goals for all graduates of these kura, to become "high achievers who exemplify the hopes and aspirations of their people" (This is accomplished by kura defining, strategising for and measuring achievement in terms of Te Aho Matua.)

An Education Review Office (2008) review identified kura whose students were proud of and confident in their identity, and were focused on their learning and achieving well. The 16 kura (21%) demonstrated high-performing characteristics:

- high expectations and a strong commitment to excellence
- whānau engagement with the kaupapa
- informed and capable governance
- effective professional leaders
- a learner-centred teaching approach
- school-wide embedding of te reo and tikanga
- comprehensive planning based on identified student needs.

Business success

Māori rates of entrepreneurship are some of the highest in the world, with one in three Māori aged 35–44 years being business entrepreneurs. Māori were more likely than the general population to expect to start up a new business, to claim to use the very latest technology, and have a belief they will create greater than 20 jobs in the next five years.

Individual success

What are the features of these effective interventions by/with Māori? The Families Commission (2011) sums up it as being by Māori, for Māori, about Māori and in Māori – Māori developed, designed and delivered. Additionally, the Families Commission report interviewed highly successful Māori women who identified six key themes that have underpinned their lives:

1. Wairua – spirituality. How spirituality is integral to their lives, a key driver. It drives their destiny, work – "their everything".
2. Whakapapa – the "golden thread". Links to wairua and connects the women to generations past and future and to their calling.
3. Ngā Wāhine Māori. The work, courage, capability and capacity of these Māori women to do what is needed. They are/have: "strength, kaupapa driven, clarity of purpose, politically astute, each a leader in her own right, each a specialist in her own field of work, intelligent, beautiful, Western qualified, kaupapa Māori qualified, wisdom wakas and a sense of humour"
4. Ngā Tāne Māori. Who bring the other half of the whakapapa, working together on the whānau development kaupapa.

5. Whanaungatanga. The ancestral, historical, traditional and spiritual ties that bond kinship groups together. The women's understanding of whānau was not the same as family.
6. Mana motuhake. The "mana of the individual, mana of the whānau, mana of the hapū, mana of the iwi, te mana o Papatuanuku". A barrier expressed strongly in this theme was personally mediated racism and institutional racism.

Community success

Another case study presented in the Families Commission report (2011) is what the community of Waitaha did for Waitaha, with the funding support of government agencies. They undertook a strategic planning exercise to set their goals, and then launched a project to meet those, the Taku Maara, Toku Ora mara kai (gardening) project. The purpose was to improve nutrition and increase activity and it achieved this by "helping to establish individual gardens for households and whānau groups, a gardening mentoring programme, visiting other sites, and involving whānau members in networking".

Success factors were being able to work with large or very small tracts of land, funding from Te Puni Kokiri and the District Health Board, leadership provided early in the project, varied activities that involved all of the whānau, linking to the national Māori Vegetable Growers Collective, field trips and face-to-face meetings to promote the project.

And many more…

Many other case studies could have been included in this literature scan, such as: Project Mauriora, a whānau restoration programme; Tipu Ora, working with young parents; Te Akatea Iwi Tauawhai Trust, in Rotorua working with whānau therapy to resolve conflict; Ngāti Kahungunu's strategy to be a violence-free iwi; or the Amokura Family Violence Prevention Strategy led by the chief executives of Te Aupōuri, Te Rarawa, Ngāti Kahu, Whaingaroa, Ngāpuhi, Ngāti Whātua and Ngāti Wai.

What all of the previously described programmes have in common is a Te Ao Māori approach – by Māori, for Māori, about Māori, in Māori. Their evidence in a Western Science paradigm (based on rigorous methods to test effectiveness) is yet to be generated (if that is desired by Māori), and their evidence in a Te Ao Māori paradigm (based on a culturally responsive and strengths-based approach, and privilege of the participant) is strong. The reverse is true of the first section in this literature scan (presenting the Western Science evidence).

4.3 Data sharing and data tracking

This literature scan was asked to identify data tracking, but it became clear during the course of the project that both data sharing and data tracking exist, and are mentioned interchangeably. From the context of "what works", the major thrust of this report, data tracking has been the focus. However, any information on data sharing that has been identified has also been included, though it is acknowledged this may be incomplete because of the methods used, and the lack of focus on this.

Data tracking for the purposes of this literature scan entails tracking the outcomes of individual children, particularly those at risk, as they move through a service and the outcomes experienced by that child or family. It does not refer to population monitoring of child outcomes,

such as the New Zealand Child and Youth Epidemiology Service's (2007) set of indicators to track region-level data on child health (of all children, not just vulnerable children).

Data sharing for the purposes of this literature scan entails the sharing of data about a child or family, particularly those at risk, as they move within an agency (to other services) or between agencies (to other services).

The purpose of the data tracking question, from a research perspective, is to attempt to understand who moves in and out of services, what services are used and what outcomes are achieved (Is it effective?). Such research would require rigorous data collection methods, joint definitions, clear outcome endpoints etc., within and between agencies. It was generally agreed by the small number of people interviewed that such agreement has not been reached within or between agencies.

Further, the question was asked "Who was the information about data sharing and data tracking being collected for?" – referring to whether the information was being collected for use by the social service providers (to share information to provide a better service), or for central government agencies (to inform government policy making). Data sharing and tracking certainly does occur within and between agencies (for example, between Ministry of Social Development and Ministry of Health), but data tracking information is "early in its development and use", and there is little publicly available information. Data sharing to help clients move between multiple agencies must be occurring in a widespread manner. Most agencies are involved in at least one if not more multi-agency-delivered service, and presumably for these to operate efficiently data is being shared between agencies, unless they are operating as a referral-only service. Little publicly available information about this was identified in this literature scan. Other research methods would be more successful in identifying such information.

Referral pathways

"Referral pathways" appear to be a good place to start to identify what data is collected, how data is used and how the data is shared within and between agencies. For example, the Families Commission (2011a) literature review on "Safety of subsequent children" has a section (pp 36–42) on referral pathways for child protection cases. They note that pathways are both formal (between and within agencies) and informal (friends and whānau networks). The report also concludes that referral between agencies (say from a GP to Child, Youth and Family) may not occur for fear that the family may also withdraw from the small number of support services they are currently receiving. Whether data is shared at the same time as a referral is unclear.

Interagency protocols do exist in New Zealand, and they "encourage agencies to work together to identify abuse and refer families, but they do not penalise inaction" (Families Commission, 2011a). For example, CYF and Police have a protocol in situations of serious child abuse to "clarify the roles and responsibilities of each organisation, and the process to be followed for working collaboratively at the local level, and to ensure a prompt and effective response to cases of serious child abuse". It is a formally agreed, national-level document.

A report worth further reading is Lips et al. (2009) who investigated information-sharing practices between agencies in New Zealand. Several of their findings point to a lack of data sharing, and subsequently to the likelihood that complex families will not be getting the complex mix of services they require. They recommend 14 ways to improve data sharing between agencies, such as:

- development of a Code of Practice for Welfare (under the current privacy legislation) that outlines the legal support for information sharing;

- using information-sharing protocols to commit to shared outcomes and build trust and relationships across agencies;
- regular evaluations of protocols; inclusion of NGOs in protocols; and
- providing training and education on the "do's and don'ts" of information sharing under privacy legislation, across the public sector and NGOs.

Other data sharing and tracking opportunities

Being a literature scan, this work did not lend itself to answering the question about what data sharing exists. That presented above is a mix of literature, and comments from a very small number of interviewees talked to as part of accessing literature for this literature scan. A more appropriate method to answer a question about data sharing and tracking would likely be in-depth interviews with targeted agencies and programmes. During this literature scan many programmes were identified as likely to be of interest to any future research regarding data sharing or tracking:

- Youth Pipeline (mentioned in the Ministry of Social Development's 2011–2014 Statement of Intent, but no other publically available information)
- Youth Transition Services to support young people into education, training and work (Ministry of Social Development)
- Strengthening Families, for any whānau/ family in New Zealand when more than one community support organisation or government service is or could be required
- Parents as First Teachers, a home-based early childhood education programme
- other early intervention services from Ministry of Social Development, including Early Years service hubs, family service centres, Family Start, Home Interaction Programme for parents and youngsters, and services for teenage parents and their children
- Pathways to Partnership (a Ministry of Social Development multi-year strategy aimed at strengthening community-based family-, child- and youth-focused services
- Positive parenting initiatives such as SAGES, SKIP, Whānau Toko I Te ora
- Te Rito Collaborative Networks, community-based family violence networks that strengthen a community's ability to effectively prevent and respond to family violence by enhancing existing systems, increasing community ownership and the service response wrapped around families and whānau
- youth interventions such as BreakThru, Action on Youth Gangs Programme of Work, Break-away school holiday programme
- Whānau ora, a government policy initiative, an inclusive approach to providing services and opportunities to whānau (It empowers families as a whole, rather than focusing separately on individual family members and their problems. It requires multiple Government agencies to work together with families rather than separately with individual family members.)
- Well Child Tamariki Ora schedule of services, including the B4 School Check (It covers screening, education and support services offered free to all New Zealand children from birth to five years, and their families/whānau. Well Child services include health education and promotion, health protection and clinical assessment, and family/whānau support. The services also ensure that parents are linked to other early childhood services such as Early Childhood Education and social support services, if required.)
- the Violence Intervention Programme, funding family violence intervention coordinator positions in all District Health Boards.
- youth health services delivered in schools and community centres.

4.4 Defining vulnerable children

Defining "vulnerable children" is complex. The Shorter Oxford English Dictionary (Oxford University Press, 2011) defines vulnerable as "Able to be wounded; able to be physically or emotionally hurt; liable to damage or harm especially from aggression or attack; assailable".

Such a definition from the dictionary puts "vulnerable" firmly into concepts of purposeful harm being caused by a person, on the child. At one level every child is potentially vulnerable (as is every person). Of course some children are more vulnerable than others. It is this difference in vulnerability that is of interest, a difference in risk. From a research point of view, intervention studies have focussed on:

1. all children (universal interventions)
2. children with substantial exposure to risk (targeted interventions)
3. children for whom targeted interventions have failed and now require more intensive intervention (intensive interventions).

Mechanic & Tanner's (2007) journal article on vulnerable people describes several useful constructs:

- "Vulnerability involves several interrelated dimensions: individual capacities and actions; the availability or lack of intimate and instrumental support; and neighbourhood and community resources that may facilitate or hinder personal coping and interpersonal relationships."
- "Vulnerability is cumulative over the life course. Early-life difficulties and their adverse effects interact with later events in ways that increase the likelihood of poor adult outcomes."
- "Vulnerabilities may be temporary, stressing individuals and groups during particular life crises such as acute illness, family breakup, unemployment, community disasters, or other severe losses. In contrast, other people and communities face persistent and permanent vulnerabilities because of a longterm pattern of severe and persistent illness and disability, persistent poverty (even from one family generation to the next), and chronic unemployment."

The Ministry of Social Development's "Vulnerable Children: Numbers and Risk Factors" report (MSD, 2011) identifies the number of children "at the most disadvantaged end of the spectrum" – 3%; the "slightly larger 5%" of children who are at "significant risk", and the 15% (not descriptively described regarding their risk level) for whom interventions could be targeted.

For the purposes of this literature scan, "vulnerable children" was described by the Ministry of Social Development as: those children unable to access help AND with risk factors / poor outcomes across several sectors/domains (health and disability, social, justice, education, families). The definition extended to factors mediated by their parents (drugs and alcohol, mental health, poor parenting, intellectual disability).

There are multiple competing definitions that are similar. For example, a Ministry of Social Development (2006) review discusses the difficulties in defining "child maltreatment", and the sub-components of that definition: child neglect (physical, educational, emotional) and child abuse (physical, sexual and emotional). The definition of vulnerable children for this literature scan, by contrast, is broader again, and takes in the health domain as well. For example, 38% of New Zealand children had low serum zinc concentrations at baseline (Morgan et al., 2010), and it could be argued that such a finding is not due to child abuse or neglect. Instead it is likely a function of complex social, economic, cultural and environmental influences. To capture such

diversity, a definition of vulnerable children would need to encompass the health domain as well.

The Ministry of Justice (2010) defines vulnerable as "Families and children who are most at risk of adverse outcomes, such as poor health, low educational attainment, unemployment, economic disadvantage, or being a perpetrator or victim of crime".

To further complicate matters, much research into "what works" for children and youth includes populations that may or may not be considered vulnerable (from attack, as described by the Oxford English Dictionary), but who may be at risk. For example, a child or youth who smokes – are they vulnerable or at risk? What about a child or youth who is sexually active, but not using a condom regularly? What about a Māori child in mainstream education and their risk of not performing to their potential? Many would argue that such children are not vulnerable, but they are at increased risk. This is further reflected in the types of interventions applied in these situations, which are universal interventions targeting the whole population, with differing risk across that population, rather than targeted to specific groups of "vulnerable children".

The United Nations Convention on the Rights of the Child (UNROC) defines a child as a person aged less than 18 years or at the age of majority if the legal age of majority is younger than 18 years. In New Zealand there is no particular age at which a person is deemed to be a child, young person or adult. For example, at 16 years a person may leave school and have sexual intercourse, but they cannot marry without parental consent. At 17 years people under state guardianship are no longer deemed wards of the state. At 18 years or older people are able to vote and to purchase alcohol. People are still deemed dependent on parental financial support up until the age of 25 years.

There is a wide range of age-based statistical data and definitions, and no particular age category represents children.

4.5 Further research

The breadth of this literature scan was extremely wide, covering social services, health, education, housing, justice, etc. At the beginning of a policy process this is appropriate, but once additional clarity regarding likely policy direction has been indicated, delving deeper could be particularly enlightening. This literature scan is a high-level scan of what works, and there is an incredibly large body of material that sits one level down on the effectiveness scale, that is, activity that is "promising" or has "been recommended as best practice by expert groups" etc. A full understanding of the risk factors, causes and size of the problem has been reported elsewhere, but perhaps not presented/cut in a manner to suit the policy and decision makers. Such information is critical to a full understanding to inform a policy response.

For the Western Science approach there is a substantial number of controlled trials that have been undertaken in New Zealand on this broad topic, and they provide New Zealand evidence of what works. Certainly New Zealand "boxes above its weight" compared to other countries when it comes to such rigorous work. These have all been undertaken in "mainstream" services, albeit many with a Māori or Pacific cultural component to them. Such New Zealand work must be strongly encouraged as it provides a high degree of faith in its suitability for the mainstream setting, because it is developed and designed for that area already, and it is methodologically rigorous. Having said that, the number of programmes/services available in New Zealand that are currently operating is substantial, and only a very small number of these have been

rigorously evaluated for the effectiveness. Any inroads in addressing this lack of data would be welcome.

Undertaking rigorous implementation and evaluation would greatly strengthen both the Western Science approach and the Te Ao Māori approach. For example, rigorous studies from overseas (within the Western Science approach) present complexity for the policy and decision maker. While such studies have been shown to "work", one of the features of the effective intervention is that it will have been designed for individuals, families and communities with very different lives, values and beliefs to New Zealanders; and designed to be run within jurisdiction's institutions, organisations and networks, which are undoubtedly different from New Zealand. Imagine taking an effective intervention designed for Mexican Americans and attempting to deliver it in Auckland. The transferability of evidence from international studies to New Zealand still means that the policy and decision maker will be unsure if it will work in New Zealand, presenting a fundamental weakness. Rigorous implementation and evaluation is therefore required.

Within the Te Ao Māori approach the transferability of the work to Māori communities is ready-built into the approach for delivery into Maori communities, giving the policy and decision maker substantial comfort regarding what might otherwise be a challenging issue for some. The evaluation of the wharekura intervention provides both rigorous and transferable evidence, and an excellent example of the braided rivers research approach. However, in general, the rigour of evaluation methods within the Te Ao Māori section is weak, and therefore it is less clear what outcomes are being achieved and whether bias is skewing any reported results. Rigorous implementation and evaluation is therefore required.

The data sharing and tracking section (above) lists numerous programmes for which data is likely shared and possibly tracked. Understanding how such data is shared and tracked, and sharing that with all of the partner agencies, would be very valuable for learning lessons on what works in data sharing/tracking, and why. It may also highlight valuable outcome data related to programme effectiveness that is not currently being used, or at least not currently publicly available.

The Mental Health Foundation commented that a potential gap in research was the excessive "medicalisation" of children's psychological problems, with pharmaceutical responses becoming the default response. The Foundation believed it was an issue in the USA, but had seen no research to suggest it was an issue in New Zealand yet.

4.6 Limitations of this literature scan

When undertaking or reading a literature scan of evidence from effective interventions it become very clear very quickly that rigorous studies have not been undertaken on the breadth of interventions that are needed. For example, within housing, the Centre for Housing Research, Aotearoa New Zealand has produced an excellent summary of the issues and potential solutions to housing for children in New Zealand (James et al. 2010). Within that it describes the need for seven major responses to the housing needs of children and families:

1. improving the affordability of home ownership and rental housing for families with children
2. decent housing – improving dwelling condition and performance and eliminating crowding
3. tackling child poverty
4. tackling homelessness

5. fostering thriving neighbourhoods
6. focus on vulnerable groups
7. integrated approaches to strategies, planning and service delivery.

From the evidence of effective interventions compiled by this literature scan, the only interventions studied using a randomised control trial method were for home insulation and heating (Howden-Chapman et al., 2007). It showed good child outcomes for days off school and GP visits. Clearly however, there are gaps from rigorous studies about what works. For example, what works to improve affordability? to eliminate overcrowding? to tackle child poverty? etc. Nationally and internationally there are many examples of interventions to address these issues (James et al., 2010), but they are not subject to rigorous assessment of effectiveness (which is true of most policies, programmes and projects).

This literature scan focuses on what works. While this literature scan might identify that a particular programme might work, it is important not to assume a similar programme will also work. There are, of course, many programmes and projects that did not work. This literature scan describes three home visitation programmes that worked (Early Start Programme; Nurse Family Partnership; and Early Head Start), but does not describe those home visitation programmes that have not worked (Healthy Start Program) (MacMillan et al., 2009), or studies without adequate pre-/post- data, controls or randomisation (Family Start, Family Help Trust) (Families Commission, 2011).

5. Conclusions

This literature scan of New Zealand review-level evidence has identified many effective interventions. Several of the effective interventions are based on mainstream New Zealand programmes and the data from those, and from Te Ao Māori approaches. The interventions cover many settings and this is a particular strength, as work within: parent, family or home interventions; school or early childhood education interventions; community or multimodal interventions or multi-setting interventions; or other single-sector-led interventions; will deliver positive outcomes.

Overall there is substantial choice for the policy and decision maker. Many programmes work, in many settings, delivering many positive outcomes. Prevention works, but even if prevention was implemented perfectly there would still be some who require treatment, and treatment works too. The most promising Western Science approaches are those developed and designed for a New Zealand audience, as they are already in New Zealand and are working right now. They have been developed to build on existing strengths and systems, rather than attempting to make radical change. They incorporate *Māori* cultural values into the programmes to achieve excellent outcomes for Māori and Pakeha. They are far wider than just individual/family approaches, and have a holistic nature to them. Examples include Te Kotahitanga, Project Energize and APPLE project. The most promising Te Ao Māori programme is the evidence provided for the wharekura education setting, showing excellent outcomes in NCEA pass rates when compared against control schools.

There was little data identified regarding what interventions work for Pacific families and children.

From the international literature (potentially less transferable to New Zealand) it is hard to go past the Abcedarian Project and/or Perry Project, both interventions providing early childhood

centre care to high-risk families. The outcomes lasted a lifetime and were intergenerational – improving the outcomes for the children's children. While it is an intensive intervention, the cost benefit analyses carried out show substantial financial return for each dollar invested. However, if it also proved to work in a New Zealand setting, the scalability of the approach may be an issue due to the intensive nature of the intervention.

Many of the studies showed that early intervention was more effective than later intervention. Studies also showed that universal, targeted and high-risk programmes worked – again giving policy and decision makers plenty of scope to select appropriate options to further explore.

If a single issue was to be selected, interventions to address self-control would stand out. This non-cognitive behavioural skill is malleable, and is believed to underpin many negative life-long outcomes. Self-control is what Professor Richie Poulton (Gluckman et al., 2011) describes as the "essential ingredient".

The excellent story from this literature scan is that a lot can be achieved. Despite poor parental skills, difficult macro- and micro- socio-economic environments, and substantial resource disadvantage, outcomes for vulnerable children can improve markedly with carefully planned and executed interventions.

Sharing of information between agencies is occurring in New Zealand. Multiple programmes are sharing data because multiple agencies are working together. However, publicly available documents have not been identified by this literature scan that shed any light on how that is happening. Further research using a different research approach is warranted in this area. Data tracking of child and family outcomes is at its early stage of use in New Zealand. It is being done, but again information about data tracking is not publicly available.

The definition of "vulnerable children" is complex and means different things to different agencies. It would be worthwhile, if "vulnerable children" is going to be continued to be used as a common phrase in New Zealand policy documents, to have an agreed definition developed between multiple agencies. This may not be an easy task, however, because of the different priorities of different agencies.

Further research could include:

- collating the risk, protective and causative factors, and size-of-the-problem data for policy areas of interest, once narrowed down to a manageable number (This will allow policy makers to make a fully informed decision about programmes being proposed.)
- rigorous evaluation of existing New Zealand programmes to provide data on effectiveness
- rigorous implementation and evaluation of any proposed new or altered programmes to ensure that they are implemented appropriately and are effective
- studying data sharing and data tracking (Numerous programmes share data and possibly track data. Understanding how such data is shared and tracked, and sharing that with all of the partner agencies would be very valuable for learning lessons on what works in data sharing/tracking, and why. It may also highlight valuable outcome data related to programme effectiveness that is not currently being used, or at least not currently publicly available.)

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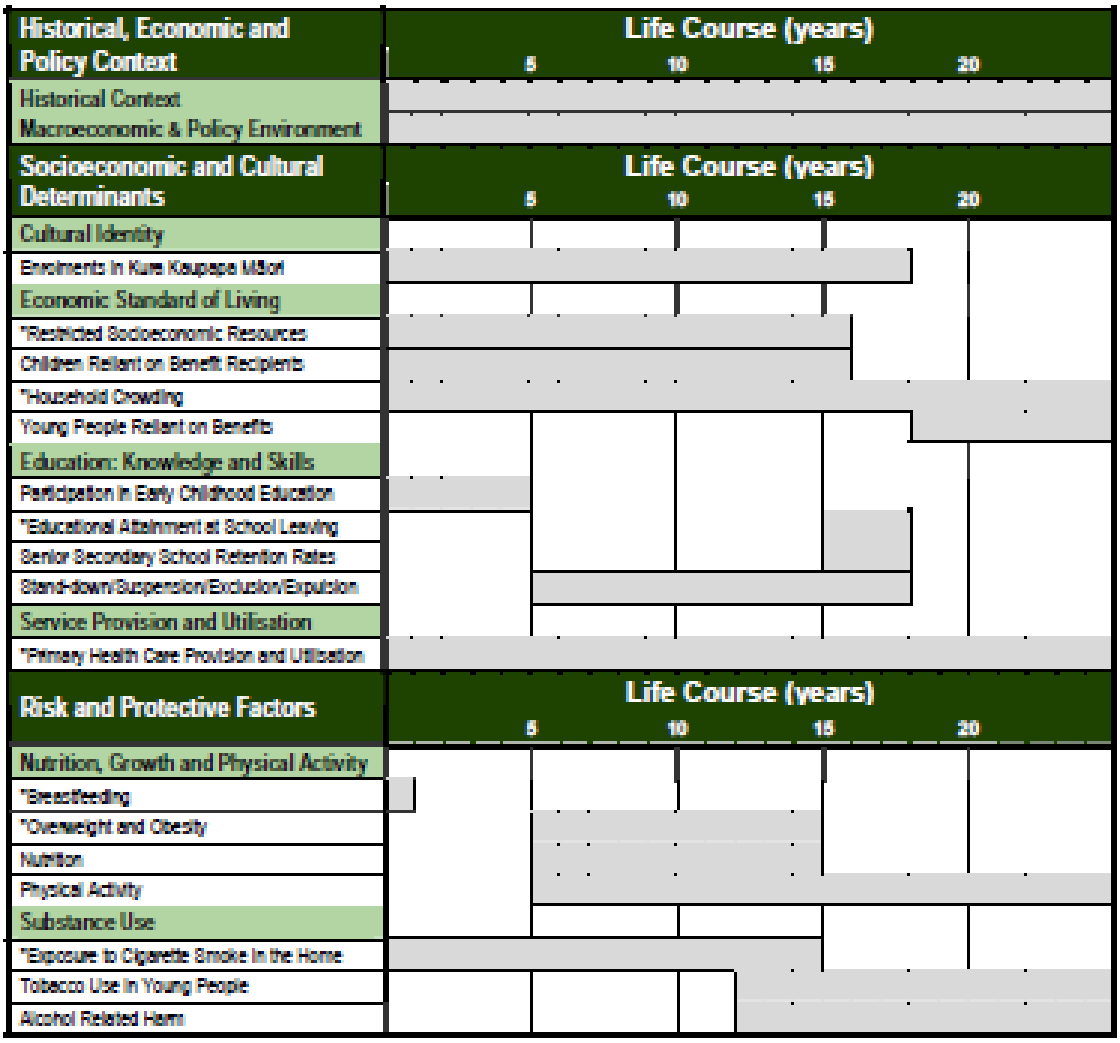
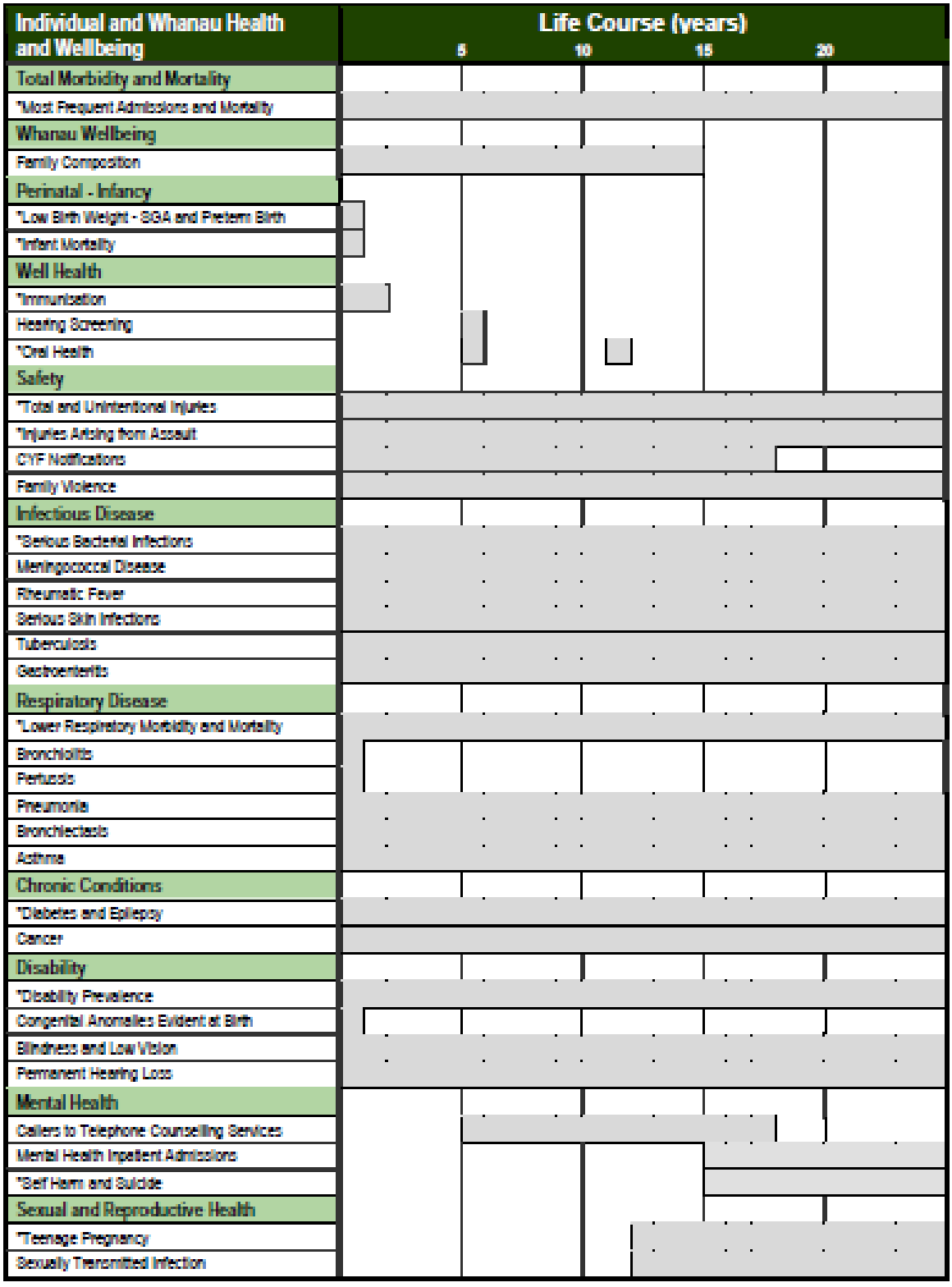
Appendix 1

Figure 1. The New Zealand Child and Youth Health Monitoring Framework





Note: *Indicators included in the Top 20