

MENTAL HEALTH



ACCESS TO MENTAL HEALTH SERVICES: INTRODUCTION, METHODS AND EVIDENCE- BASED REVIEW TABLES

Introduction

The Prevalence of Mental Health Issues in Children and Young People

Evidence suggests that prevention and early intervention programmes in child and youth mental health can result in better outcomes and financial benefits in terms of reduced long term mental health and addiction costs [310,311]. While specialist mental health services data reflect the severe end of the spectrum, there may also be important psychological problems at a subclinical level which would benefit from intervention, and may be precursors to adult disorders [311]. Minimising rates of psychiatric disorders and addressing the risk factors and life pathways that lead to these disorders has also been identified as a vital component of suicide prevention efforts [312].

In New Zealand, the community prevalence of mental health disorders in children is uncertain. The Dunedin Multidisciplinary Health and Development Study suggested that the prevalence of mental health problems increases as children move through adolescence [313]. The Youth '07 survey of 9,107 secondary school students in 2007 found that 11.2% of female students and 7.6% of male students showed indications of an underlying mental health problem and 14.7% of female students and 6.9% of male students reported significant symptoms of depression [314]. A recent review of international community surveys found that anxiety disorders were the most frequent conditions in children, followed by behavioural disorders, mood disorders, and substance use disorders [315]. Those with the most severe disorders tended to receive mental health services, but fewer than half of young people with current mental disorders received mental health specialty treatment. Among younger children, the type of mental health problem also varies by age and gender. For example, there are differential peak periods of specific subtypes of anxiety: separation anxiety and specific phobias in middle childhood; overanxious disorder in late childhood; social phobia in middle adolescence; and panic disorder in late adolescence. ADHD, conduct disorder and oppositional defiant disorder are all more common in boys.

Te Rau Hinengaro, The New Zealand Mental Health Survey, also found that the twelve month prevalence for any mental disorder was highest among the 16–24 year age group (28.6%, 95% CI 25.1–32.3) and declined across the age groups [316]. The lifetime prevalence of any psychiatric disorder was 41.6% (95% CI 37.4–45.9) for 16–24 year olds and half of all those with any psychiatric disorder reported the age of onset as 18 years or younger. Major depressive disorder and anxiety disorders (except obsessive compulsive disorder) were more common in females and alcohol and drug abuse and dependence were more common in males. The 12 month prevalence of any mental disorder was highest for Māori (29.5%, 95% CI 26.6–32.4), followed by Pacific people (24.4%, 95% CI 21.2–27.6) and non-Māori non-Pacific peoples (19.3%; 95% CI 18.0–20.6), although these differences reduced after adjustment for age, sex, education and household income [317]. Pacific peoples and Māori were significantly less likely than non-Māori non-Pacific peoples to have had a visit to any service for a mental health problem, suggesting that, relative to need, Pacific people and Māori are less likely than non-Māori non-Pacific peoples to have contact with services [317].

Risk factors for the development of mental disorders in children can be divided into child characteristics and family characteristics [34,315,318]. Child characteristics include gender, age, ethnicity, sexual orientation, physical health, alcohol, drugs, lifetime history of environmental exposures to toxins (lead), social environment and stressful life events. Family characteristics include parental education, age, social class, employment, psychiatric and medical history, family function and structure, and neighbourhood and



broader contextual influences on the health of children and their families. A parental history of mental disorders is one of the most consistent risk factors for the development of mental disorders in children.

Contents of Access to Mental Health Services Chapters

The following three sections use data from the Project for the Integration of Mental Health Data (PRIMHD) to explore access to mental health outpatient, community and inpatient services for children and young people with specific mental health diagnoses. The diagnoses reviewed have been grouped into three clusters, which are loosely based on the age groups most commonly experiencing these conditions:

1. *Children 0–14 years*: Attention deficit hyperactivity disorder (ADHD), conduct/disruptive behaviour disorders, parent-child relational problems, autism/pervasive developmental disorders, learning disorders and intellectual disabilities.
2. *Children and young people 0–24 years*: Anxiety disorders, stress reaction/adjustment disorders, and eating disorders.
3. *Young people 15–24 years*: Schizophrenia and other psychotic disorders, personality disorders; depression, bipolar disorder and other mood disorders; and substance-related disorders (alcohol, cannabis, and other substances). This section also includes a small subsection which uses the National Minimum Dataset to explore hospital admissions for young people with mental health diagnoses.

In addition the In-Depth Topic commencing on **Page 365** reviews *Mental Health Issues in Children* in more detail, while the *Suicide and Intentional Self-Harm* section commencing on **Page 418** considers suicide and self-harm in young people.

Cautions Relating to the Methodology Used

Because PRIMHD data is configured in a very different way to that contained in the National Minimum Dataset (hospital admissions) the reader is urged to review the methods section below, in order to become familiar with the strengths and limitations of PRIMHD, as well as the methodology used in the sections which follow.

Further, the information presented in this year's report differs from that presented in the NZCYES' 2009 Reports, because of differences in the data collections (PRIMHD vs. the Mental Health Information National Collection (MHINC)) and the coding systems used to code mental health diagnoses (in PRIMHD the data received were coded in DSM-IV, whereas in MHINC diagnoses were coded using ICD-10-AM).

Data Source and Methods

Definition

1. *Number of Children and Young People Accessing Mental Health Services by Mental Health Diagnosis*
2. *Contacts with Mental Health Services for Children and Young People by Mental Health Diagnosis*
3. *Inpatient Bed Nights for Children and Young People by Mental Health Diagnosis*

Data Source

Numerator: Project for the Integration of Mental Health Data (PRIMHD)

Individuals: Number of individuals accessing mental health services who ever received a specified mental health diagnosis. Diagnoses included DSM-IV Alcohol-Related Disorders (305.00, 303.90, 291.89, 291.1, 291.2, 291.5, 291.3, 303.00, 291.0, 291.9, 291.81); Cannabis-Related Disorders (305.20, 304.30); Other Substance-Related Disorders (305.70, 304.40, 292.11, 292.12, 292.81, 292.9, 292.0, 292.89, 305.60, 304.20, 292.84, 305.30, 304.50, 305.90, 292.82, 305.50, 304.00, 304.60, 305.40, 304.10, 292.83, 304.80, 304.90); Schizophrenia (295.20, 295.10, 295.30, 295.60, 295.90); Other Psychotic Disorders (295.40, 295.70, 297.1, 298.8, 297.3, 293.81, 293.82, 298.9); Bipolar Disorders (296.80, 296.56, 296.55, 296.51, 296.52, 296.53, 296.54, 296.50, 296.40, 296.46, 296.45, 296.41, 296.42, 296.43, 296.44, 296.40, 296.66, 296.65, 296.61, 296.62, 296.63, 296.64, 296.60, 296.7, 296.06, 296.05, 296.01, 296.02, 296.03, 296.04, 296.00, 296.89); Depression (296.36, 296.35, 296.31, 296.32, 296.33, 296.34, 296.30, 296.26, 296.25, 296.21, 296.22, 296.23, 296.24, 296.20, 311); Other Mood Disorders (300.4, 301.1, 301.3, 293.83, 296.90); Anxiety Disorders (300.02, 300.21, 300.01, 300.22, 300.29, 300.23, 300.3, 309.81, 308.3, 293.84, 300.00); Adjustment Disorders (309.9, 309.24, 309.0, 309.3, 309.28, 309.4); Eating Disorders (307.1, 307.51, 307.50); Personality Disorders (301.0, 301.20, 301.22, 301.7, 301.83, 301.50, 301.81, 301.82, 301.6, 301.4, 301.9); Mental Retardation (317, 318.0, 318.1, 318.2, 319); Autism/Pervasive Developmental Disorders (299.00, 299.80, 299.10); Attention Deficit Hyperactivity Disorder (314.01, 314.00, 314.9); Conduct/Disruptive Behaviour Disorders (312.81, 312.82, 312.89, 312.81, 312.9); Learning Disorders (315.00, 315.1, 315.2, 315.9); Parent-Child Relational Problem (V612.0).

Contacts: Individual contacts, attendances, groups or day programmes reported to PRIMHD. Examples of contacts include mental health crisis attendances, individual treatment or group program attendances, healthcare coordination contacts, support needs assessment attendances, court liaison attendances, day program attendances, home based care contacts, and contacts with family/Whānau.

Bed Nights: Where a client occupies a bed at midnight in a ward or residential facility. Examples of bed nights include acute, sub-acute and respite mental health inpatient bed nights; mental health maximum, medium and minimum secure inpatient bed nights; community mental health residential bed nights.

Denominator: Statistics NZ Projected Population

Notes on Interpretation

Note 1: PRIMHD is the Ministry of Health's national database covering the provision of publicly funded secondary mental health and alcohol and drug services. Commencing on July 1 2008, it integrates information from the previous Mental Health Information National Collection (MHINC) and the MH-SMART data collection. It includes secondary inpatient, outpatient and community care provided by hospitals and non-Government organisations (although data from NGOs is incomplete). It does not include information on outpatient visits to paediatricians, and in the context where local referral pathways result in children seeing a paediatrician rather than a mental health professional for behavioural or emotional problems, this may significantly underestimate the prevalence of mental health issues (e.g. autism, ADHD, learning disorders) in the community. Referral pathways (i.e. the relative balance between paediatrics vs. mental health services) are likely to vary both by region (depending on the availability of specialist child and youth mental health services) and by age (with the role of the paediatrician decreasing as adolescence approaches). As paediatric outpatient data is currently not coded by diagnosis, the workload of community/developmental paediatricians in this context remains invisible, making it difficult to assess for children in particular, the underlying prevalence of mental health conditions in the community. For adolescents/young adults however, the PRIMHD may provide a better reflection of access to secondary services for mental and behavioural issues.

Note 2: The PRIMHD records principal, secondary and provisional diagnoses for clients at each contact, although in a large number of cases the diagnosis was either missing or deferred. In this section, children/young people have been assigned a diagnosis, if they ever received this diagnosis (principal/secondary/provisional) in the period under review (i.e. numbers = total number of individuals receiving the diagnosis; rates = total number of individuals with the diagnosis divided by the number in the population at the mid-point of this period (i.e. 2010)). Contacts and bed-nights have then been ascribed to individuals with a particular diagnosis, irrespective of the reason the person sought care (e.g. contacts for ADHD = number of contacts for children ever diagnosed with ADHD (including those where the consultation related to another diagnoses), rather than the number of contacts specifically addressing ADHD issues. Where individuals were assigned multiple diagnoses (e.g. ADHD and a conduct disorder), they appear twice in the analysis. As a result, the figures in the tables which follow do not add to 100%, making it difficult to assess the contribution each diagnoses made to the total volume of services accessed during this period.

Note 3: In PRIMHD each diagnosis has a specified start and finish date. A number of children and young people accessing services during 2009–2011 however had a diagnosis with a specified start date which began in 2008, but which continued through the period under review. In addition, it is likely that a number of children and young people accessing services during 2009–2011 had their diagnosis deferred until early 2012, even though their care during 2009–2011 related to this diagnosis. Thus in this analysis, all children and young people have been included if they accessed mental health services during 2009–2011 (with year being determined by the service start date rather than the finish date). However, the diagnoses assigned to these children and young people have been drawn from PRIMHD diagnostic data with diagnosis start dates extending from mid 2008 to mid 2012.

Note 4: Where an individual accessed services on multiple occasions, and was thus recorded as having multiple ages, the mean age (averaged across the 3-year period) has been used, with the age being taken as the age of the patient at the activity start date. All activities for patients where their age at the activity start date was 25+ years have been excluded.

Further detail on the methodology used is available from the NZCYES on request.

Local Policy Documents and Evidence-Based Reviews Relevant to Mental Health Issues in Children and Young People

In New Zealand, there are number of publications which address mental health issues in children and young people. These include publications which focus on specific mental health conditions, as well as those which consider the delivery of mental health services more generally. These are summarised in **Table 90**, along with a range of guidelines and reviews which consider the effectiveness of interventions in the overseas context. While a large number of international reviews have considered the effectiveness of individual drug and psychological therapies, it is beyond the scope of the table below to provide a comprehensive coverage of this literature.



In addition, **Table 115** on **Page 415** provides an overview of the literature on the prevention of drug use in young people, while **Table 47** on **Page 233** addresses alcohol use, and **Table 119** on **Page 424** considers suicide prevention in young people. Finally, the In-Depth Topic **Mental Health Issues in Children** commencing on **Page 365** provides a more detailed review of the literature as it relates to children aged 0–14 years.

Table 90. Local Policy Documents and Evidence-Based Reviews Relevant to the Prevention or Management of Mental Health Issues in Children and Young People

Ministry of Health Policy Documents
<p>Ministry of Health. 2010. Mental Health and Addiction Action Plan 2010. Wellington: Ministry of Health. http://www.health.govt.nz/publication/mental-health-and-addiction-action-plan-2010</p> <p>This document builds on Te Tāhuhu and Te Kōkiri, the national strategy and action plan for mental health and addictions to 2015, identifying the key priorities for Ministry-led activities. Integrating efforts across government for better mental health outcomes in children is one of four prioritised actions. The aims are for more families and whānau of children with conduct and behavioural problems to have access to effective interventions through child and adolescent mental health services (CAMHS); more vulnerable families and whānau to have access to effective positive parenting advice through a range of primary care settings to reduce children's behavioural, emotional and mental health problems; and provision for Māori to access parenting programmes which have been adapted to reflect Māori cultural concepts and values to reduce their children's behavioural, emotional and mental health problems. Several implementation milestones have been developed.</p>
<p>Ministry of Health. 2007. Te Raukura: Mental health and alcohol and other drugs: Improving outcomes for children and youth. Wellington: Ministry of Health. http://www.health.govt.nz/publication/te-raukura-mental-health-and-alcohol-and-other-drugs-improving-outcomes-children-and-youth</p> <p>This report highlights the issues for child and youth mental health and alcohol and other drug (AOD) services in New Zealand. It identifies the key priorities for action with the aim of increasing the pace of development and improving outcomes for child and youth mental health and reducing inequalities and improving access to services for Māori and Pacific peoples from primary to tertiary care.</p>
<p>Ministry of Health. 2005. Te Tāhuhu: Improving Mental Health 2005–2015: The Second New Zealand Mental Health and Addiction Plan Wellington: Ministry of Health.</p> <p>Ministry of Health. 2006. Te Kōkiri: The Mental Health and Addiction Action Plan 2006–2015. Wellington: Ministry of Health. http://www.health.govt.nz/our-work/mental-health-and-addictions/mental-health/mental-health-strategic-direction</p> <p>The Te Tāhuhu report sets out Government policy and priorities for mental health and addiction for 2005 to 2015. Te Kōkiri sets out the action plan and includes a mixture of high level initiatives and specific operational actions. Building mental health services including increasing services that are funded for children and young people is identified as a key challenge. A number of priority actions are identified including reviewing and updating the framework for child and youth mental health and addiction service provision; improving access; contributing to intersectoral projects; and implementing initiatives to develop child/youth/whānau participation in service development and evaluation.</p>
<p>Ministry of Health. 2008. Te Puāwaiwhero: The Second Māori Mental Health and Addiction National Strategic Framework 2008–2015. Wellington: Ministry of Health. http://www.health.govt.nz/publication/te-puawaiwhero-second-Māori-mental-health-and-addiction-national-strategic-framework-2008-2015</p> <p>Te Puāwaiwhero provides the framework to guide the mental health and addiction sector towards the overall aim of the strategy, which is whānau ora – Māori families supported to reach their maximum health and wellbeing. It can be used to inform those implementing the Te Kōkiri action plan. The report identifies three key principles: prioritise Māori; build on gains; and responsiveness to Māori. Priorities are identified as: promotion and prevention; early intervention and primary health care; and specialist services. Prioritised actions for 2008 to 2015 are described.</p>
Cochrane Systematic Reviews
<p>Merry SN, et al. 2011. Psychological and educational interventions for preventing depression in children and adolescents. Cochrane Database of Systematic Reviews doi:10.1002/14651858.CD003380.pub3 http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD003380/frame.html</p> <p>This review assessed the effectiveness of psychological and/or educational interventions (mostly based on cognitive behavioural therapy) in preventing the onset of depressive disorder in children and adolescents. Fifty-three RCTs (14,406 participants) were included in the analysis, 16 (3,240 participants) of which reported outcomes on depressive diagnosis. Allocation concealment was unclear in most of the studies. There was some evidence supporting targeted and universal depression prevention programmes in preventing the onset of depressive disorders compared with no intervention (risk difference (RD) -0.09; 95% CI -0.14 to -0.05 immediately post-intervention for 15 studies). Differences were sustained at 12 months but less clear on longer term follow-up. Further research is recommended to determine the most effective programmes.</p>

Shepperd S, et al. 2009. **Alternatives to inpatient mental health care for children and young people**. Cochrane Database of Systematic Reviews doi:10.1002/14651858.CD006410.pub2
<http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD006410/frame.html>

This review assessed the effectiveness, acceptability and cost of mental health services that provide an alternative to inpatient care for children and young people, and to identify the range and prevalence of different services that seek to avoid inpatient care. Seven RCTs (799 participants) evaluating four models of care: multisystemic therapy (MST) at home, specialist outpatient service, intensive home treatment and intensive home-based crisis intervention ('Homebuilders' model for crisis intervention) were included. The control groups received care in inpatient or equivalent settings. MST at home was associated with some behavioural improvement, sustained at four month follow up, and fewer days off school and in hospital. Small improvements were identified in the 'Homebuilders' crisis intervention study but no significant differences were found for specialist outpatient services or intensive home treatment. No evidence assessing several service models was identified, including intensive day treatment, and the authors make suggestions on evaluating service models with prospective audits with baseline measurements if RCTs are not feasible.

Larun L, et al. 2009. **Exercise in prevention and treatment of anxiety and depression among children and young people**. Cochrane Database of Systematic Reviews doi:10.1002/14651858.CD004691.pub2
<http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD004691/frame.html>

This review assessed the effectiveness of exercise interventions in reducing or preventing anxiety or depression in children and young people up to 20 years of age. Sixteen studies (1,191 participants) comparing vigorous exercise with no intervention or low-intensity exercise, or exercise with psychosocial interventions were included. While there were small, non-significant effects in favour of exercise compared to no intervention (five trials) in reducing depression and anxiety scores in the general population of children and adolescents, no differences were identified in comparing the intensity of exercise or exercise in comparison to psychosocial interventions. The heterogeneity and small number of studies limited the ability to draw conclusions. The effect of exercise for children in treatment for anxiety and depression is unknown due to the scarce evidence base.

Pratt BM & Woolfenden S. 2009. **Interventions for preventing eating disorders in children and adolescents**. Cochrane Database of Systematic Reviews doi:10.1002/14651858.CD002891
<http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD002891/frame.html>

This review assessed the effectiveness of interventions aimed at preventing eating disorders in children and adolescents by promoting healthy eating attitudes and behaviours; promoting protective psychological factors; promoting satisfactory physical health; having a long-term, sustainable, and positive impact on mental and physical health; and ensuring safety in relation to possible harmful consequences on mental or physical health. Twelve RCTs (3,092 children and adolescents) met inclusion criteria. Only two programmes involving training in media literacy and advocacy skills showed a significant pooled effect. Pooled results of interventions addressing eating attitudes and behaviours, improvement in self-esteem and eating disorder awareness indicated no significant effects. It was not possible to draw firm conclusions about the effect of prevention programmes although none of the pooled comparisons indicated evidence of harm.

Other Systematic Reviews

Farrugia S, et al. 2010. **The Effectiveness of Youth Mentoring Programmes in New Zealand**. Auckland: University of Auckland, Ministry of Youth Development, Health Research Council of New Zealand.
<http://www.myd.govt.nz/documents/policy-and-research/mentoring-syst-rev-final.pdf>.

This systematic review assessing the effectiveness of youth mentoring programmes identified 26 studies. Study methodology varied and quality was mostly poor and susceptible to bias. Few studies included a control group. Only 35% of the 23 schemes active at the time of the review had conducted an evaluation. Overall, 88% of the programmes included in the review showed some level of effectiveness but conclusions were tentative due to the varied quality of the research. Programmes that focused on psychological and interpersonal goals were more effective than programmes focused on educational, behavioural, vocational or cultural goals and a variety of more effective programme features were identified. Half of the 14 programmes with Māori mentees had ignored Māori cultural frameworks.

Kavanagh J, et al. 2009. **Inequalities and the mental health of young people: a systematic review of secondary school-based cognitive behavioural interventions**. London: University of London, Institute of Education, Social Science Research Unit, EPPI-Centre. <http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=2418&>

This systematic review assessed the effectiveness of health promotion interventions, based on cognitive behavioural therapy (CBT) techniques, in secondary schools for preventing and reducing suicidality, depression and anxiety, and reducing inequalities in mental health in young people (aged 11 to 19 years). Seventeen RCTs (n=5,385, range 17 to 1,266) were included in the review. There was a statistically significant reduction in depression symptoms for all time periods up to three months post intervention (SMD -0.21, 95% CI -0.35 to -0.07; 14 RCTs assessed the period up to four weeks). The trend remained positive, but non-significant at six and 12 months. Removal of heterogeneous studies showed reductions in anxiety up to four weeks (SMD -0.23, 95% CI -0.45 to -0.02; five RCTs) and at six months follow-up (SMD -0.18, 95% CI -0.35 to -0.01; three RCTs). None of the included studies reported on suicidality outcomes. Few studies provided data that could be used to examine the impact of interventions on inequalities. The authors conclude that CBT delivered to young people in secondary schools can reduce the symptoms of depression and anxiety but there is no evidence to assess the impact on suicidal thinking or behaviour. It is recommended that providers: consider using adequately trained and supported school staff to provide interventions; consider providing programmes of 10 or more weeks duration; be aware of, and consider monitoring, potential adverse effects are made.

Williams SB, et al. 2009. **Screening for Child and Adolescent Depression in Primary Care Settings: A Systematic Evidence Review for the US Preventive Services Task Force.** Pediatrics, 123(4), e716-e35.

This systematic review assessed the health effects of routine primary care screening for major depressive disorder among children and adolescents aged seven to 18 years. No studies that directly examined the health outcomes of screening children and adolescents for depression were identified, and it is therefore unknown whether the use of systematic screening improves identification, treatment, and outcomes of depression over standard identification methods. Eighteen RCTs assessed the efficacy of SSRIs and or psychotherapy in screen-detected children and adolescents. Pooled analysis of nine SSRI RCTs was undertaken, indicating higher response rates among those treated with SSRIs (absolute risk difference in the response rate between treatment and intervention groups 12%, 95% CI 7 to 16). Nine of the 10 psychotherapy trials found that treated patients had higher short-term response rates or a greater reduction in depression symptoms after interventions compared with a variety of control conditions. SSRI treatment was associated with a small absolute increase in risk of suicidality (suicidal ideation, preparatory acts, or attempts), and the authors advise that this treatment should only be considered when appropriate clinical monitoring is possible.

Evidence-Based Guidelines

Best Practice: Special Edition. 2010. **Depression in young people.** Best Practice Journal. <http://www.bpac.org.nz/magazine/2010/youngdep/youngdep.asp?section=1>.

These evidence-based guidelines focus on the identification and management of depression in children and adolescents in primary care and are based on the New Zealand Guidelines Group 2008 guidelines for the management of depression in primary care. The guidelines include a section on the recognition and assessment of common mental disorders in young people, highlighting the importance of assessment of suicide risk at initial presentation and ongoing monitoring; recognition of severe depression; immediate referral to secondary care for all those with serious suicidal intent, psychotic symptoms or severe self-neglect; assessing psychosocial as well as physical wellbeing at each interaction; and endeavouring to build a supportive and collaborative relationship with the young person and their family/whānau, recognising cultural identity and health care preferences. The HEEADSSS and HEARTS structured clinical assessments are recommended and outlined. It is recommended that mild or moderate depression should typically be managed in primary care; a strength-based approach should be used; involvement of support services such as school guidance counsellors should be considered; those with mild depression can be directed to <http://www.thelowdown.co.nz/>; antidepressant treatment in a young person (less than 18 years) should not be initiated in primary care without consultation with a child and adolescent psychiatrist. Referral should be made if there is no improvement after six to eight weeks of treatment, or at any stage if there is serious suicidal intent, psychotic symptoms or severe self-neglect.

Ministries of Health and Education. 2008. **New Zealand Autism Spectrum Disorder Guideline.** Wellington: Ministry of Health. <http://www.health.govt.nz/publication/new-zealand-autism-spectrum-disorder-guideline>

This guideline provides evidence-based guidance to all those involved in the care of adults and children with autism spectrum disorders (ASD) in New Zealand, including health and education professionals, funders and carers. It covers the identification and diagnosis of ASD, and the ongoing assessment and access to services and interventions for individuals with ASD, with the aim of assisting informed decision-making to improve the health, educational and social outcomes for individuals with ASD.

Ministry of Health. 2001. **New Zealand Guidelines for the Assessment and Treatment of Attention-Deficit/Hyperactivity Disorder.** Wellington: Ministry of Health. <http://www.health.govt.nz/publication/new-zealand-guidelines-assessment-and-treatment-attention-deficit-hyperactivity-disorder>

This evidence-based guideline aims to assist New Zealand health professionals in the assessment and treatment of patients with ADHD. It has not been reviewed since initial publication in 2001. It contains sections on clinical assessment (including assessment and management in schools), and treatment options (medication, psychosocial interventions, support services and other therapies). The guideline highlights the importance of incorporating relevant whānau/cultural aspects, using a multidisciplinary approach, and addressing co-morbidities.

Other Relevant Documents

Ministry of Health. 2012. **Healthy Beginnings: Developing Perinatal and Infant Mental Health Services in New Zealand.** Wellington: Ministry of Health. <http://www.health.govt.nz/publication/healthy-beginnings-developing-perinatal-and-infant-mental-health-services-new-zealand>

This report provides evidence informed guidance on ways to address the mental health and alcohol and other drug (AOD) service needs of mothers and infants and their families, for planners, funders and provider of perinatal and infant mental health and AOD services. The aims are to promote good practice; assist, over time, with the achievement of greater consistency in the quality and delivery of services; and provide guidance on cost-effective models of care. The need for intersectoral collaboration; and a whānau ora approach for Māori, is recognised.

Mental Health Commission. 2011. **A literature review: Prevention and possibilities. A focus on children and youth.** Wellington: Mental Health Commission. <http://www.mhc.govt.nz/>.

This report sought to influence planners and funders in targeting funding at programmes aimed at achieving wellbeing for at risk children and young people, and reducing long-term mental health and addiction costs. The report included a brief literature review on prevention in mental health in New Zealand and internationally, with a focus on cost-effectiveness. Findings included that there were financial benefits to prevention and early intervention; prevention initiatives were underdeveloped; and the determinants of mental distress, such as unemployment, poor housing and poverty, should be considered in prevention activities. The Commission makes a number of recommendations for establishing a 'prevention culture' within District Health Boards including: maternal mental health and addiction services; developing expertise in primary health to ensure early identification; 'wraparound' community-based services which strengthen whānau/family resilience; and collaboration with other agencies to address the determinants of mental distress.

Ministry of Health. 2010. **Let's get real: Implementation plan.** Wellington: Ministry of Health. <http://www.health.govt.nz/publication/lets-get-real-implementation-plan>

Ministry of Health. 2008. **Let's get real: Real Skills for people working in mental health and addiction.** Wellington: Ministry of Health. <http://www.health.govt.nz/publication/lets-get-real-real-skills-people-working-mental-health-and-addiction>

The *Let's Get Real* framework and implementation plan describes the knowledge, skills and attitudes required by those working in mental health and addiction treatment services. *Let's Get Real* aims to strengthen shared understanding; affirm best practice; complement the HPCA Act 2003; improve transferability of knowledge, skills and attitudes; enhance effective workforce development; and increase accountability. The implementation roll out from 2009–2013 is described and a variety of implementation resources are available at <http://www.tepou.co.nz/supporting-workforce/lets-get-real>.

Office of the Prime Minister's Science Advisory Committee. 2011. **Improving the Transition: Reducing Social and Psychological Morbidity During Adolescence. A report from the Prime Minister's Chief Science Advisor.** Auckland: Office of the Prime Minister's Science Advisory Committee. <http://www.pmcasa.org.nz/>.

This report to the Prime Minister, by a multidisciplinary panel of experts, focused on how to improve outcomes for young people in New Zealand in their transition from childhood to adulthood. It consists of a review of relevant peer-reviewed scientific literature on a range of topics, including transitions in the life course, life skills education and depression in young people, and a set of key recommendations. Recommendations include: a primary prevention or 'life-course' approach to reducing the morbidity associated with adolescence, applied early in life; additional capacity in the mental health work force, particularly those specifically trained to work with children and adolescents, to provide both screening and treatment; and a strategic national approach to reducing depression in adolescence. The report found that although the application of the evidence base to policy formation and programme development would lead to better outcomes for young people, many programmes that have been introduced are unlikely to succeed as they were not supported by the evidence-base. The authors identify the appropriate monitoring of effectiveness and cost effectiveness of all programmes within New Zealand, as a key challenge.

Dowell A, et al. 2009. **Evaluation of the Primary Mental Health Initiatives: Summary report 2008.** Wellington: University of Otago and Ministry of Health. <http://www.health.govt.nz/publication/evaluation-primary-mental-health-initiatives-summary-report>

This report describes the evaluation of the Ministry of Health-funded Primary Mental Health Initiatives (PMHIs). The evaluation found that up to 80% of patients benefitted from the PMHIs. Improvement was sustained at six months in initiatives that collected sufficient data. Although the evaluation found that mental health needs arising from mild to moderate common mental health conditions, including those involving social complexity, could be addressed by primary care, the needs of children and young people were not sufficiently met by the PMHIs, as over half did not offer services to this group.

MEDSAFE. 2009. **Selective serotonin re-uptake inhibitors (SSRI) in children and adolescents.** Prescriber Update, 30(1), 1.

Royal Australian and New Zealand College of Psychiatrists. 2005. **Clinical Guidance on the use of Antidepressant Medications in Children and Adolescents.** http://www.ranzcp.org/Files/ranzcp-attachments/Resources/College_Statements/Practice_Guidelines/Clinical_Guidance_on_the_use_of_Antidepressant_med.aspx

Brief MEDSAFE guidance on the use of SSRI medication in children and adolescents was published in 2009 following a review of their use. The guidance highlights that all SSRIs have consistently been associated with an increase in suicidality in meta-analyses of clinical trials of the use of SSRIs to treat major depressive disorder (MDD) in children and adolescents, and that the only antidepressant with overall data indicating efficacy better than placebo in children and adolescents is fluoxetine. Informed consent must be obtained before initiating an SSRI for MDD in children or adolescents. All patients diagnosed with MDD should be monitored closely for suicidality, and antidepressant treatment should only be considered in consultation with specialist services. Particular care should be taken in the period shortly after initiating antidepressant treatment, after a change in dosage, and after discontinuing treatment. The Royal Australian and New Zealand College of Psychiatrists guidance provides a general summary of the use of antidepressants in children and adolescents, which endorsed MEDSAFE advice.

Ministries of Education, Health, Justice and Social Development. 2007. **Inter-agency Plan for Conduct Disorder/Severe Antisocial Behaviour 2007-2012**. Wellington: Ministry of Social Development.

<http://www.msd.govt.nz/about-msd-and-our-work/work-programmes/policy-development/anti-social-behaviour/index.html>

This inter-agency plan was developed to establish a more comprehensive and effective cross-government approach to conduct disorder/severe antisocial behaviour in children (behaviours which are defined as severe, persistent across contexts and over time, and which involve repeated violations of societal and age-appropriate norms). The report identifies key challenges facing services, including inconsistent mechanisms for identifying and determining eligibility for services, gaps in the availability of specialist services, and lack of alignment with the evidence base in some programmes. It sets out the four key proposals for 2007 to 2012: establishing leadership, co-ordination, monitoring and evaluation; transitioning existing service provision to evidence-based, best-practice interventions; establishing an intensive, comprehensive behavioural service for three to seven year-olds; and building a shared infrastructure for the delivery of specialist behavioural services.

Ministry of Health. 1999. **Better Times: Contributing to the mental health of children and young people**. Wellington:

Ministry of Health. <http://www.health.govt.nz/publication/better-times-contributing-mental-health-children-and-young-people>

This document was developed as part of the Strengthening Families strategy - an intersectoral initiative led by the Ministries of Health and Education and the Department of Social Welfare in consultation with other key government and community agencies, aimed at achieving better outcomes for children and improving the wellbeing of families. The report aims to assist all those working with children and young people to recognise and support children with mild and moderate mental health problems and make appropriate referrals to specialists when necessary.

Note: The publications listed were identified using the search methodology outlined in **Appendix 1**

ACCESS TO MENTAL HEALTH SERVICES IN CHILDREN AGED 0–14 YEARS

Introduction

The following section use data from the Project for the Integration of Mental Health Data (PRIMHD) to explore access to mental health outpatient, community and inpatient services for children aged 0–14 years with the following mental health diagnoses:

- Attention deficit hyperactivity disorder (ADHD)
- Conduct/ disruptive behaviour disorders
- Parent-child relational problems
- Autism/pervasive developmental disorders
- Learning disorders and intellectual disabilities

These diagnoses were selected as they were the most commonly assigned to children who were recorded as accessing mental health services in the PRIMHD. In addition, the In-depth Topic commencing on **Page 365** reviews mental health issues for children aged 0–14 years in more detail.

Data Source and Methods

Information on the Project for the Integration of Mental Health Data (PRIMHD) and the DSM-IV codes used in this analysis is provided in the *Access to Mental Health Services: Introduction* section on **Page 347**.

Note 1: Because PRIMHD data is configured in a very different way to that contained in the National Minimum Dataset (hospital admissions) the reader is urged to review the methods section on **Page 347**, in order to become familiar with the strengths and limitations of PRIMHD.

Note 2: The information presented in this year's report differs from that presented in the NZCYES' 2009 Reports, because of differences in the data collections (PRIMHD vs. the Mental Health Information National Collection (MHINC)) and the coding systems used to code mental health diagnoses (in PRIMHD the data received were coded in DSM-IV, whereas in MHINC diagnoses were coded using ICD-10-AM).

New Zealand Distribution

Numbers Accessing Services

In New Zealand during 2009–2011, attention deficit hyperactivity disorder (ADHD) was the most frequent diagnosis assigned to children accessing mental health services, followed by conduct/disruptive behaviour disorders and parent-child relational problems. In interpreting these figures it must be remembered that many children with these diagnoses access paediatric outpatient services, and that this workload is not captured by PRIMHD. Thus the rates given in **Table 94** are likely to underestimate the prevalence of these conditions in the community.

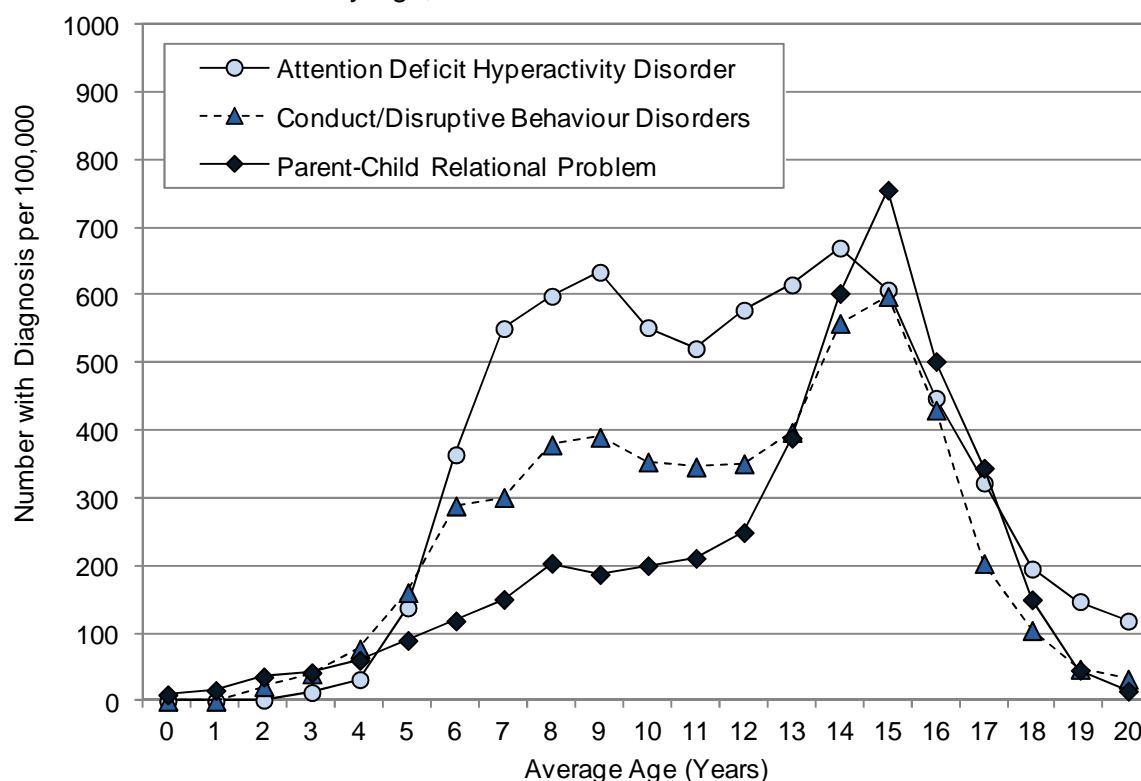
Numbers Accessing Services by Diagnosis and Age

Attention Deficit Hyperactivity Disorder: In New Zealand during 2009–2011, the number of children accessing mental health services with a diagnosis of ADHD increased rapidly during early to mid childhood (four to eight years), reached a peak at nine years of age and then declined briefly, before increasing again to reach a second peak at 14 years. Numbers then tapered off rapidly during the mid to late teens (**Figure 129**).

Conduct/Disruptive Behaviour Disorders and Parent-Child Relational Problems: During 2009–2011, the number of children accessing mental health services with a conduct/disruptive behaviour disorder increased rapidly between three and nine years of age and then remained relatively static until 12 years. Numbers then rose relatively rapidly to reach a peak at 15 years, before tapering off again during the late teenage years. Similar patterns were seen for those with parent-child relational problems (**Figure 129**).

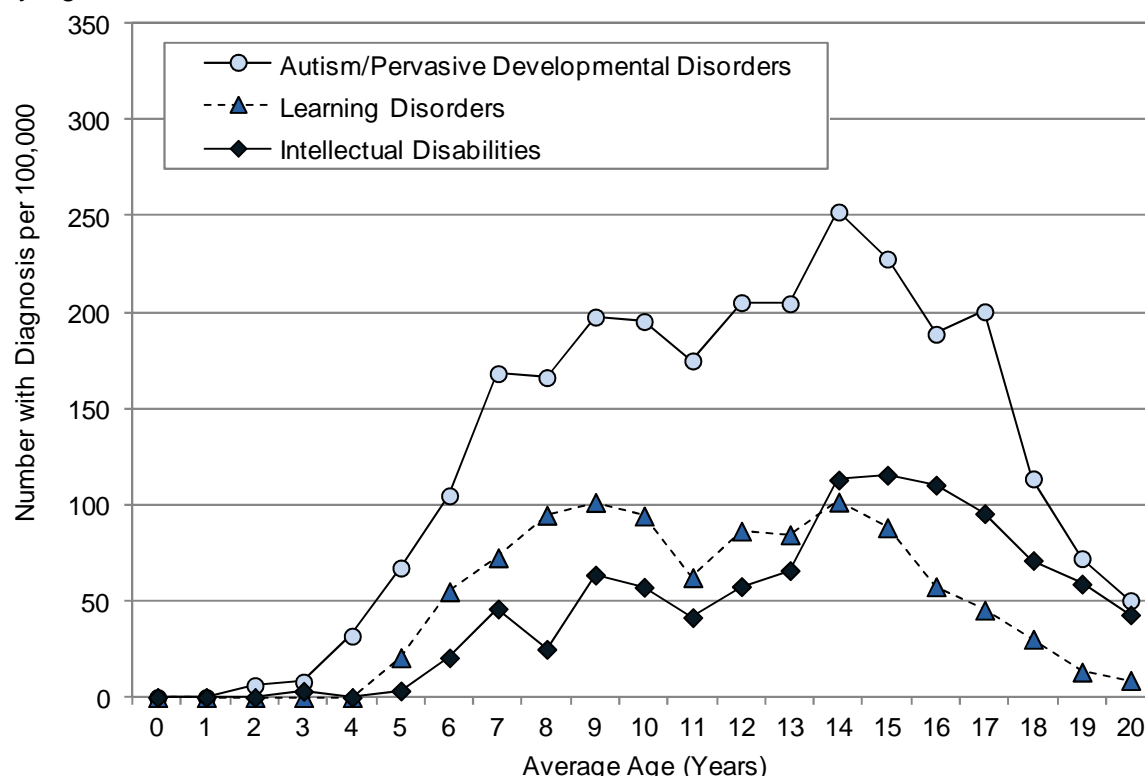


Figure 129. Children and Young People Accessing Mental Health Services with Attention Deficit Hyperactivity Disorder, Conductive/Disruptive Behaviour Disorders, or a Parent-Child Relational Problem by Age, New Zealand 2009–2011



Source: Numerator: PRIMHD (individuals attending Mental Health Services who had ever been assigned these diagnoses); Denominator: Statistics NZ Projected Population (2010 = mid-point of 2009–2011)

Figure 130. Children and Young People Accessing Mental Health Services with Autism/Pervasive Developmental Disorders, Learning Disorders, or Intellectual Disabilities by Age, New Zealand 2009–2011



Source: Numerator: PRIMHD (individuals attending Mental Health Services who had ever been assigned these diagnoses); Denominator: Statistics NZ Projected Population (2010 = mid-point of 2009–2011)

Autism/Pervasive Developmental Disorders: During 2009–2011, the number of children accessing mental health services with autism/pervasive developmental disorders increased rapidly between three and nine years of age. Rates then remained relatively static during late childhood, but increased to a second peak at 14 years of age, before declining again during the mid to late teens (**Figure 130**).

Learning Disorders and Intellectual Disabilities: During 2009–2011, the number of children accessing mental health services with learning disorders or intellectual disabilities increased during mid to late childhood, with rates for those with learning disabilities being relatively static between nine and fourteen years, and then declining during the mid to late teens. The number accessing services with intellectual disabilities however gradually increased until fourteen years of age, before declining again (**Figure 130**).

Numbers Accessing Services by Diagnosis, Ethnicity and Gender

Attention Deficit Hyperactivity Disorder: In New Zealand during 2009–2011, the number of children accessing mental health services with a diagnosis of ADHD was *significantly* higher for males and for European/Other > Māori > Pacific children. While similar patterns were seen for mental health service contacts and inpatient bed nights, no Pacific children were admitted overnight with ADHD during this period (**Table 91**).

Conduct/Disruptive Behaviour Disorders: During 2009–2011, a *significantly* higher number of males accessed mental health services with conduct/disruptive behaviour disorders. While rates were similar for European/Other and Māori children accessing services, rates were *significantly* lower for Pacific children. While a similar pattern was seen for inpatient bed nights, Māori children had a *significantly* higher number of mental health service contacts than European/Other or Pacific children (**Table 91**).

Autism/Pervasive Developmental Disorders: During 2009–2011, the number of children accessing mental health services with autism/pervasive developmental disorders was *significantly* higher for males and for European/Other > Māori > Pacific children. While a similar pattern was seen for mental health service contacts and inpatient bed nights, less than three Pacific children were admitted overnight with autism/pervasive developmental disorders during this period (**Table 92**).

Intellectual Disabilities: During 2009–2011, a *significantly* higher number of males accessed mental health services with intellectual disabilities. While rates were similar for European/Other and Māori children accessing services, rates were *significantly* lower for Pacific children. In contrast, the number of mental health service contacts was *significantly* higher for Māori > European/Other > Pacific children. While a similar pattern was seen for inpatient bed nights, less than three Pacific children were admitted overnight with intellectual disabilities during this period (**Table 92**).

Learning Disorders: During 2009–2011, the number of children accessing mental health services with learning disorders was *significantly* higher for males and for European/Other > Māori > Pacific children. While a similar pattern was seen for mental health service contacts and inpatient bed nights, no Pacific children were admitted overnight with learning disorders during this period (**Table 93**).

Parent-Child Relational Problems: During 2009–2011, the number of children accessing mental health services with parent-child relational problems was *significantly* (albeit only marginally) higher for males and for European/Other children, than for Māori or Pacific children. Similar patterns were seen for mental health service contacts and inpatient bed nights (**Table 93**).



Table 91. Children Aged 0–14 Years Accessing Mental Health Services with Attention Deficit Hyperactivity Disorder or Conduct/Disruptive Behaviour Disorders by Ethnicity and Gender, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Attention Deficit Hyperactivity Disorder												
Ethnicity												
European/Other	2,306	400.2	1.00		27,622	4,793.6	1.00		1,215	210.9	1.00	
Māori	691	299.9	0.75	0.69–0.82	9,267	4,021.8	0.84	0.82–0.86	92	39.8	0.19	0.15–0.23
Pacific	81	88.0	0.22	0.18–0.27	802	871.8	0.18	0.17–0.20	0	0.0	–	–
Gender												
Female	561	128.1	1.00		6,941	1,584.9	1.00		197	44.9	1.00	
Male	2,517	546.3	4.26	3.89–4.67	30,750	6,674.4	4.21	4.10–4.32	1,110	241.0	5.37	4.61–6.25
Conduct/Disruptive Behaviour Disorders												
Ethnicity												
European/Other	1,482	257.2	1.00		19,415	3,369.3	1.00		567	98.4	1.00	
Māori	571	247.8	0.96	0.87–1.06	8,205	3,560.7	1.06	1.03–1.08	218	94.6	0.96	0.82–1.12
Pacific	95	103.2	0.40	0.33–0.49	936	1,016.7	0.30	0.28–0.32	37	40.6	0.41	0.30–0.57
Gender												
Female	484	110.5	1.00		7,724	1,763.7	1.00		419	95.8	1.00	
Male	1,664	361.2	3.27	2.95–3.62	20,831	4,521.4	2.56	2.50–2.63	403	87.5	0.91	0.80–1.05

Source: PRIMHD; Note: *Individuals*: Total = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 children 0–14 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Average = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 children 0–14 years; *Inpatient Bed Nights*: Annual Average = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 children 0–14 years

Table 92. Children Aged 0–14 Years Accessing Mental Health Services with Autism/Pervasive Developmental Disorders or Intellectual Disabilities by Ethnicity and Gender, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Autism/Pervasive Developmental Disorders												
Ethnicity												
European/Other	896	155.5	1.00		11,152	1,935.3	1.00		580	100.6	1.00	
Māori	126	54.7	0.35	0.29–0.42	1,501	651.3	0.34	0.32–0.36	67	29.2	0.29	0.23–0.37
Pacific	22	23.9	0.15	0.10–0.23	269	291.9	0.15	0.13–0.17	<3	s	s	s
Gender												
Female	167	38.1	1.00		2,168	495.0	1.00		43	9.9	1.00	
Male	877	190.4	4.99	4.23–5.89	10,753	2,334.0	4.72	4.50–4.94	605	131.4	13.28	9.76–18.07
Intellectual Disabilities												
Ethnicity												
European/Other	201	34.9	1.00		1,944	337.4	1.00		44	7.6	1.00	
Māori	76	33.0	0.95	0.73–1.23	1,041	451.9	1.34	1.24–1.44	40	17.2	2.27	1.48–3.49
Pacific	16	17.4	0.50	0.30–0.83	159	172.8	0.51	0.44–0.60	<3	s	s	s
Gender												
Female	79	18.0	1.00		937	213.9	1.00		14	3.3	1.00	
Male	214	46.4	2.58	1.99–3.33	2,208	479.2	2.24	2.08–2.42	71	15.3	4.69	2.66–8.27

Source: PRIMHD; Note: *Individuals*: Total = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 children 0–14 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Average = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 children 0–14 years; *Inpatient Bed Nights*: Annual Average = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 children 0–14 years; s: rate suppressed due to small sample size

Table 93. Children Aged 0–14 Years Accessing Mental Health Services with Learning Disorders or Parent-Child Relational Problems by Ethnicity and Gender, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Learning Disorders												
Ethnicity												
European/Other	351	60.91	1.00		3,476	603.2	1.00		145	25.16	1.00	
Māori	86	37.32	0.61	0.48–0.78	706	306.3	0.51	0.47–0.55	9	3.91	0.16	0.08–0.30
Pacific	15	16.30	0.27	0.16–0.45	227	247.0	0.41	0.36–0.47	0	0.00	–	–
Gender												
Female	99	22.61	1.00		908	207.2	1.00		43	9.74	1.00	
Male	353	76.62	3.39	2.71–4.24	3,501	759.9	3.67	3.41–3.94	111	24.17	2.48	1.74–3.53
Parent-Child Relational Problem												
Ethnicity												
European/Other	1,046	181.52	1.00		14,134	2,452.8	1.00		707	122.69	1.00	
Māori	340	147.56	0.81	0.72–0.92	4,431	1,923.0	0.78	0.76–0.81	44	18.95	0.15	0.11–0.21
Pacific	130	141.26	0.78	0.65–0.93	1,086	1,180.4	0.48	0.45–0.51	21	23.18	0.19	0.12–0.29
Gender												
Female	696	158.92	1.00		9,369	2,139.3	1.00		288	65.84	1.00	
Male	820	177.98	1.12	1.01–1.24	10,282	2,231.7	1.04	1.01–1.07	484	104.98	1.59	1.38–1.84

Source: PRIMHD; Note: *Individuals*: Total = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 children 0–14 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Average = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 children 0–14 years; *Inpatient Bed Nights*: Annual Average = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 children 0–14 years

South Island Distribution

Children Accessing Mental Health Services by Diagnosis

In the South Island DHBs during 2009–2011, ADHD, conduct/disruptive behaviour disorders, parent-child relational problems and autism/pervasive developmental disorders were the most frequent diagnoses assigned to children accessing mental health services. While rates for a number of conditions differed *significantly* from the New Zealand rate, it must be remembered that many children with these diagnoses access paediatric outpatient services, and that this workload is not captured by PRIMHD. Thus the rates given in **Table 94** to **Table 96** are likely to underestimate the prevalence of these conditions in the community. Further, regional differences in the proportion of cases managed by mental health services vs. paediatric outpatients are also likely to account for some of the differences seen.

Local Policy Documents and Evidence-Based Reviews Relevant to Mental Health Issues in Children

Local policy documents and evidence-based reviews relevant to the management of mental health issues in children and young people are reviewed in the **Access to Mental Health Services: Introduction** section commencing on **Page 347**. In addition, **Table 115** on **Page 415** provides an overview of the literature on the prevention of drug use in young people, while **Table 119** on **Page 424** considers suicide prevention in young people. Finally, the In-Depth Topic **Mental Health Issues in Children** commencing on **Page 365** provides a more detailed review of the literature as it relates to children aged 0–14 years.



Table 94. Children Aged 0–14 Years Accessing Mental Health Services with Selected Diagnoses, Nelson Marlborough and South Canterbury vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Children 0–14 Years						
Nelson Marlborough						
Attention Deficit Hyperactivity Disorder	115	440.02	1.28	1.07–1.55	9.7	0.07
Conduct/Disruptive Behaviour Disorders	49	187.49	0.78	0.59–1.04	15.3	2.27
Parent Child Relational Problem	13	49.74	0.29	0.17–0.51	28.7	11.62
Autism/Pervasive Developmental Disorders	38	145.40	1.25	0.91–1.73	7.3	0.18
Learning Disorders	20	76.53	1.52	0.97–2.38	9.7	0.17
Intellectual Disability	19	72.70	2.23	1.40–3.55	8.2	0.19
South Canterbury						
Attention Deficit Hyperactivity Disorder	95	925.48	2.70	2.21–3.31	11.6	0.56
Conduct/Disruptive Behaviour Disorders	85	828.06	3.46	2.79–4.30	12.1	0.65
Parent Child Relational Problem	7	68.19	0.40	0.19–0.85	10.9	0.00
Autism/Pervasive Developmental Disorders	21	204.58	1.76	1.14–2.71	12.5	0.08
Learning Disorders	21	204.58	4.07	2.63–6.30	16.0	2.62
Intellectual Disability	19	185.10	5.68	3.57–9.03	11.2	0.09
New Zealand						
Attention Deficit Hyperactivity Disorder	3,078	342.50	1.00		12.2	0.42
Conduct/Disruptive Behaviour Disorders	2,148	239.02	1.00		13.3	0.38
Parent Child Relational Problem	1,516	168.69	1.00		13.0	0.51
Autism/Pervasive Developmental Disorders	1,044	116.17	1.00		12.4	0.62
Learning Disorders	452	50.30	1.00		9.8	0.34
Intellectual Disability	293	32.60	1.00		10.7	0.29

Source: PRIMHD; Note: *Total* = total number of individuals with diagnosis accessing services during 2009–2011; *Annual Contacts per Individual* = number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; *Annual Bed Nights per Individual* = number of bed nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%; Table does not include all children with mental health diagnoses accessing services, but rather provides an overview of the most common diagnoses only.

Table 95. Children Aged 0–14 Years Accessing Mental Health Services with Selected Diagnoses, Canterbury and the West Coast vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Children 0–14 Years						
Canterbury						
Attention Deficit Hyperactivity Disorder	522	536.32	1.57	1.43–1.72	7.5	0.70
Conduct/Disruptive Behaviour Disorders	318	326.72	1.37	1.22–1.54	9.4	0.79
Parent Child Relational Problem	192	197.27	1.17	1.01–1.36	8.4	0.97
Autism/Pervasive Developmental Disorders	122	125.35	1.08	0.89–1.30	5.3	2.11
Learning Disorders	145	148.98	2.96	2.46–3.57	6.0	0.23
Intellectual Disability	59	60.62	1.86	1.41–2.46	5.1	0.00
West Coast						
Attention Deficit Hyperactivity Disorder	58	929.49	2.71	2.10–3.51	21.1	0.10
Conduct/Disruptive Behaviour Disorders	38	608.97	2.55	1.85–3.51	23.9	0.15
Parent Child Relational Problem	34	544.87	3.23	2.30–4.53	18.1	0.15
Autism/Pervasive Developmental Disorders	16	256.41	2.21	1.35–3.61	21.4	0.00
Learning Disorders	8	128.21	2.55	1.27–5.13	20.0	0.00
Intellectual Disability	4	64.10	1.97	0.73–5.27	20.7	1.17
New Zealand						
Attention Deficit Hyperactivity Disorder	3,078	342.50	1.00		12.2	0.42
Conduct/Disruptive Behaviour Disorders	2,148	239.02	1.00		13.3	0.38
Parent Child Relational Problem	1,516	168.69	1.00		13.0	0.51
Autism/Pervasive Developmental Disorders	1,044	116.17	1.00		12.4	0.62
Learning Disorders	452	50.30	1.00		9.8	0.34
Intellectual Disability	293	32.60	1.00		10.7	0.29

Source: PRIMHD; Note: *Total* = total number of individuals with diagnosis accessing services during 2009–2011; *Annual Contacts per Individual* = number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; *Annual Bed Nights per Individual* = number of bed nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%; Table does not include all children with mental health diagnoses accessing services, but rather provides an overview of the most common diagnoses only.

Table 96. Children Aged 0–14 Years Accessing Mental Health Services with Selected Diagnoses, Otago and Southland vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Children 0–14 Years						
Otago						
Attention Deficit Hyperactivity Disorder	286	902.21	2.63	2.33–2.97	11.7	0.05
Conduct/Disruptive Behaviour Disorders	103	324.92	1.36	1.12–1.66	14.4	0.40
Parent Child Relational Problem	14	44.16	0.26	0.15–0.44	16.8	1.36
Autism/Pervasive Developmental Disorders	55	173.50	1.49	1.14–1.96	13.4	0.00
Learning Disorders	21	66.25	1.32	0.85–2.04	16.1	1.29
Intellectual Disability	20	63.09	1.94	1.23–3.04	14.8	0.00
Southland						
Attention Deficit Hyperactivity Disorder	125	565.48	1.65	1.38–1.97	15.5	0.17
Conduct/Disruptive Behaviour Disorders	123	556.44	2.33	1.94–2.79	18.0	0.43
Parent Child Relational Problem	73	330.24	1.96	1.55–2.47	16.0	0.99
Autism/Pervasive Developmental Disorders	29	131.19	1.13	0.78–1.63	9.5	0.00
Learning Disorders	27	122.14	2.43	1.65–3.58	12.8	0.00
Intellectual Disability	21	95.00	2.91	1.87–4.54	7.3	0.00
New Zealand						
Attention Deficit Hyperactivity Disorder	3,078	342.50	1.00		12.2	0.42
Conduct/Disruptive Behaviour Disorders	2,148	239.02	1.00		13.3	0.38
Parent Child Relational Problem	1,516	168.69	1.00		13.0	0.51
Autism/Pervasive Developmental Disorders	1,044	116.17	1.00		12.4	0.62
Learning Disorders	452	50.30	1.00		9.8	0.34
Intellectual Disability	293	32.60	1.00		10.7	0.29

Source: PRIMHD; Note: *Total* = total number of individuals with diagnosis accessing services during 2009–2011; *Annual Contacts per Individual* = number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; *Annual Bed Nights per Individual* = number of bed nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%; Table does not include all children with mental health diagnoses accessing services, but rather provides an overview of the most common diagnoses only.

IN-DEPTH TOPIC: MENTAL HEALTH ISSUES IN CHILDREN

Introduction

Good mental health is essential to overall good health and wellbeing for people of all ages. Mental illness is a major contributor to the burden of ill health in New Zealand and in other developed countries [319,320]. In the widely cited 2004 World Health Organization report: *The Global Burden of Disease: 2004 Update*, unipolar depression was listed as the leading cause of lost years of healthy life in high income countries [320]. A 2007 review of the evidence from epidemiological surveys found that about half of all lifetime mental disorders begin by the mid-teens and three-quarters by the mid-20s [321].

The 2011 report from the Prime Minister's Chief Science Advisor, *Improving the Transition: Reducing Social and Psychological Morbidity During Adolescence*, noted that early childhood is a critical period for the development of executive functions and self-control and that evidence from longitudinal studies, including the Christchurch Health and Development Study and the Dunedin Multidisciplinary Health and Development Study, indicates that young children who exhibit antisocial, defiant, dishonest, disruptive or aggressive behaviour are at risk of poor outcomes in adult life including criminality, substance abuse, mental, physical and dental health problems, teen parenthood, poor parenting practices and domestic violence [322]. The Royal College of Psychiatrists has stated that improving mental health early in life would improve physical health, reduce health-risk behaviour and inequalities, and increase life expectancy, economic productivity, social functioning and quality of life [323].

With these issues in mind, this in-depth topic explores mental health issues for children aged 0–14 years. It begins with a brief overview of the history of child psychiatry and concepts of child mental disorder. It then reviews the provision of child mental health services in New Zealand and considers some of the mental health and other issues associated with children in out of home care. The following sections cover the epidemiology and the evidence base for the management of some of the most common paediatric mental health diagnoses: attention deficit hyperactivity disorder (ADHD) and oppositional defiant disorder/conduct disorder. The final section offers an overview of the developing field of infant mental health.

Historical Background to Child Mental Health

Child Psychiatry has been a recognised specialty since the mid-20th century [324]. Child psychiatry, like general psychiatry, has its intellectual and scientific foundations in several disciplines: psychology, paediatrics, education and social work [325]. The debate about the relative importance of biological determinism (nature) and environment (nurture) for child mental health has continued from the beginnings of the profession to the present.

The scientific study of normal child development was pioneered in the United States by G. Stanley Hall [326]. Once normal child development was well described and there was an understanding of the normal capabilities of children at different stages, it became possible to more accurately recognise and describe deviations from normal childhood emotions and behaviour.

Bowlby's work on the effects of maternal deprivation led to an awareness of the importance of children developing selective attachments in early life and the ways in which these provide the foundation for all kinds of later social relationships [327,328,329]. The classic longitudinal study *Deviant Children Grown Up*, a 30-year follow up of 536 youngsters seen in a child guidance clinic in St Louis in the 1920s, plus a control group of 100 chosen from school records of the same period, demonstrated the links between conduct problems in childhood and antisocial personality disorder in adulthood [330]. Later longitudinal studies including two New Zealand studies in Dunedin [331] and Christchurch



[34] have made further contributions to the understanding of the operation of risk and protective factors for child and adult mental disorders.

The development of classification systems, including the American Psychiatric Association's DSM-III (published in 1980) and the World Health Organization's ICD-9 (published in 1978) have improved clinicians' abilities to make diagnostic distinctions, [324] but there is continuing debate about the validity of some diagnostic criteria and the many diagnostic sub-categories in the current DSM-IV and ICD-10 classifications (which result in a significant proportion of patients seeming to have multiple disorders) [332].

Since the 1970s there has been an increasing recognition of the relationship between brain development and mental disorders. Both schizophrenia [333] and autism [334] are now considered to be neurodevelopmental disorders. Much research has been done on the genetics of mental disorders. A large number of twin, adoptee and family studies have shown that genetic influences operate in almost all forms of mental disorder albeit to varying degrees [335]. The development of technology to identify individual susceptibility genes has made it possible to study gene-environment interactions [336,337] and there are increasing numbers of studies finding evidence of gene-environment interactions in psychiatry and in other branches of medicine.

An example of gene-environment interaction is provided by the Dunedin longitudinal study which found that a functional polymorphism in the promoter region of the gene encoding the neurotransmitter metabolising enzyme monoamine oxidase A (MAOA) moderated the effect of child maltreatment on the chances of the child becoming a violent adult. Maltreated children whose genotype conferred low levels of MAOA expression developed conduct disorder and anti-social personality more often and were more likely to commit violent crimes as adults than children who were maltreated but had a high-activity MAOA genotype [337,338].

Bronfenbrenner's ecological theory of human development has led to the appreciation that there are influences beyond the family which have effects on child development and psychopathology [339]. This has led to new directions in research and findings about the elements in larger social structures and societies that are vital for children to fulfil their developmental potential.

In the last few decades there have been innovations in psychotherapy [340], cognitive behavioural therapy [341], parenting programmes [342,343] and family therapies [344]. The beneficial effects of pharmacological treatment for ADHD, first reported in 1937 [345], have been confirmed by numerous studies (including many randomised controlled trials) since methylphenidate was released for commercial use in 1957 [337,346].

The advances in the understanding of the causes and treatments of childhood mental disorders have come from research in many different fields, including psychology, sociology, genetics and other non-psychiatric disciplines [324]. It is hoped that as the general public becomes more aware of these advances there will be less stigmatisation of those with mental disorders and so a major barrier to mental health service access and utilisation will be removed [347].

Child Mental Health Services in New Zealand

Background

In New Zealand, in the later decades of the 20th century, child and youth mental health services (CAMHS) were not seen as a high priority and service development occurred in an ad hoc fashion throughout the country. Two key reports commissioned by the Ministry of Health in 1995, the *McGeorge Report* [348] and the *Stocktake of Services* [349] noted a significant shortage of child and youth mental health services and considerable variability in regard to how services were provided and who received them [350].

The Mental Health Commission's 1999 review of child and youth mental health services found a shortage of staff with experience in child and youth mental health across all professional disciplines and noted that there was no coordinated national plan to address



this [350]. The review stated that there was, at that time, no good evidence to indicate what range and mix of services led to the best outcomes for young people with serious mental health problems.

The first *Blueprint for Mental Health Services in New Zealand* [351], published by the Mental Health Commission in 1998, noted that the Government's National Mental Health Strategy required that mental health services be delivered to the 3% of the population who, at any one time, were most severely affected by mental illness. Ministry of Health benchmarks for access to specialist mental health services for different age groups were set at 1% for 0–9 year olds, 3.9% for 10–14 year olds and 5.5% for 15–19 year olds [352].

In 2005, *Te Tāhuhu – Improving Mental Health 2005–2015: The Second New Zealand Mental Health and Addiction Plan* noted that while the number of specialist services for children and young people had increased, there were still gaps in access, and that the provision of services for children still lagged well behind services for adults [353].

Te Raukura – Mental health and alcohol and other drugs: Improving outcomes for children and youth [354] reported that, overall, access to child and youth mental health services was still below expectations, with access rates in 2005/06 being 0.69% for 0–9 year olds, 2.45% for 10–14 year olds and 3.44% for 15–19 year olds. Key access issues identified in *Te Raukura* were barriers to access for Māori and Pacific children and youth, lack of culturally appropriate services, waiting times, inconsistency in how the severity criterion for access to CAMHS was applied, and workforce shortages and vacancy rates. Gaps in child and youth service provision were highlighted: youth forensic services, severe behaviour services, alcohol and drug services, and services for low prevalence disorders (including autism spectrum disorders and eating disorders), children of parents with a mental illness, and maternal and infant mental health. Other nationally identified problem areas were stated to be: implementation of evidence-based best practice, inter-sectoral collaboration, workforce, and increasing the role of primary care in mental health service provision.

The *Mental Health and Addiction Action Plan 2010* [355] signalled the Government's intention to move resources to primary care (to improve access to mental health and addiction services) and to integrate efforts across sectors (Health, Special Education, Child, Youth and Family and other providers) to divert children from negative pathways that impact on their life chances. The Plan sets out a number of actions to improve access to parenting programmes intended to reduce children's behavioural, emotional and mental health problems. Primary care practitioners are being trained to deliver the Triple P – Positive Parenting Programme, some new CAMHS clinicians are being employed and CAMHS staff are being trained to deliver the Incredible Years programme to families/whānau of children with behavioural or conduct problems, and it is intended that parenting programmes which reflect Māori cultural values will be developed and provided.

In response to increasing recognition of the importance of early mother-infant relationships for emotional and social development, in 2011 the Ministry of Health published *Healthy Beginnings: Developing perinatal and infant mental health services in New Zealand* [356] to provide guidance for DHBs and other service providers on ways to address the mental health and alcohol and drug service needs of mothers and infants.

The Mental Health Commission has recently published *Blueprint II* highlighting the need to broaden the focus of mental health services and take a life course approach to mental health. *Blueprint II* promotes a stepped care model of mental health care in which services are delivered to people with less severe mental health conditions in primary care and community settings as well to “the 3%”.

The Provision of Specialist Child and Youth Mental Health Services

Community Specialist Child and Adolescent Mental Health Services

Community Child and Adolescent Mental Health Services (CAMHS) provide the majority of specialist mental health services to children. All 20 DHBs provide CAMHS and alcohol and drug (AoD) services. Regional child and adolescent inpatient services are provided in Auckland, Capital and Coast (Wellington) and Canterbury (Christchurch). In areas without



child and adolescent mental health inpatient services some DHBs have child and adolescent beds allocated in adult units. Some DHBs have separate services for younger children and youth while others have services which cover the whole 0–19 year age range. Services are staffed by a range of professionals including mental health nurses, psychologists, social workers, psychiatrists, occupational therapists and alcohol and drug workers [357]. Not all staff who work in CAMHS are members of health or social service professional bodies.

In addition to DHB-provided services, there are over 80 NGOs providing DHB-funded CAMHS and AoD services. Many of these NGOs also receive funding from a range of other sources including the Ministry of Social Development, the Accident Compensation Corporation and Youth Justice [357].

In recent years funding for CAMHS and AoD services has increased (up 16% from 2007 to 2010) and there has been development of new services, in line with the Government's priorities set out in *Te Raukura* [354], *Te Tāhuhu* [353] and *Te Kōkiri* [357]. Auckland and Counties Manukau DHBs now have dedicated maternal and infant mental health services and MidCentral DHB CAMHS has collaborated with Group Special Education in the provision of a Conduct Disorder Service. There have been increases in services for children of parents with a mental illness, youth forensic services, eating disorder services, and services for Māori and Pacific peoples and migrants and refugees [357].

Ministry of Health service specifications state that Community CAMHS services include, but are not limited to:

- Specialist assessment and diagnosis
- Provision of medication and psychotherapies
- On-going monitoring of symptoms and periodic reviews of progress and treatments
- Attention to mental health prevention and promotion matters including early intervention, health maintenance and relapse prevention
- Provision of consultation and liaison services to primary care providers and other relevant agencies (including health, education and welfare agencies)

They are required to make provision for specialist mental health assessments for particular sub-groups including those with attention deficit hyperactivity disorders, eating disorders, autism, those with mental illness in association with drug and alcohol use, intellectual disability or brain injury, and refugees. CAMHS for these groups are required to provide specialist advice and information to primary care providers, to respond to acute mental health problems and to collaborate with other health, education and welfare agencies that have responsibilities for providing services to children and adolescents. In the provision of services to these groups it is expected that CAMHS will focus on addressing specific mental health problems that require specialist intervention [358].

The Ministry of Health expects that, where funding for specialist mental health and addiction services does not support coverage for all target populations, DHBs will prioritise the provision of services to people with the greatest level of need [359]. The Mental Health Commission has stated that: "An unfortunate effect of this policy is that mental health service providers have tended to practice diagnostic rationing and prioritise acute and emergency services over early intervention services which could potentially prevent the need for crisis intervention" [360].

Access criteria for specialist Child and Adolescent Mental Health Services

The moderate to severe mental health issues that CAMHS clients may have include [361]:

- behavioural and developmental disorders including attention deficit hyperactivity disorder and autism spectrum disorders
- anxiety, depression and post-traumatic stress disorders
- eating disorders

- psychotic disorders including first episode psychosis, schizophrenia and bipolar disorders
- alcohol and other drug disorders including abuse and dependence
- Tourette syndrome.

DHB provided/funded CAMHS are not contracted to provide services to children with conduct disorder as a sole presenting problem as other providers, among them the Youth Horizons Trust [362], are contracted to provide these. Disability services are funded directly by the Ministry of Health, not DHBs. For this reason, children with behavioural problems secondary to intellectual disability are normally excluded from DHB funded/provided CAMHS (unless they also have another diagnosis). These children can access Ministry of Health funded Behaviour Support Services via a referral from a Needs Assessment and Service Coordination (NASC) agency [363].

Access rates and service use for DHB mental health services

Over the years from 2004 to 2009 there was a steady increase in access rates to mental health services for the 0–19 years age group, from 1.15% in 2004 to 1.49% in 2009 [357].

Provisional data from the Ministry of Health's Programme for the Integration of Mental Health Data (PRIMHD), indicated that in 2009/10, DHB mental health service access rates were 0.136% in the 0–4 years age group, 1.38% in the 5–9 years age group, and 2.52% in the 10–14 years age group [364]. Access rates for boys were over twice those of girls in the 5–9 years age group, but access rates for girls climbed steeply from age 14 and were similar to rates for boys in the 15–19 years age group.

When broken down by ethnicity, access rates were slightly higher for European children aged 0–9 years than for Māori children, but Māori access rates were higher from 14 years [364]. The vast majority of 0–9 year olds who accessed DHB services in 2009/10 were seen by child, adolescent and family teams. For older children (10–14 years) child, adolescent and family teams were the most common team type seen, but significant number of older children were also seen by youth specialty teams and community teams. The next most frequently seen teams were, in decreasing order of frequency, Kaupapa Māori teams, Kaupapa Māori tamariki and rangatahi mental health services, needs assessment and coordination teams and Pacific Island teams[364].

2007/08 data from the Mental Health Information National Collection indicated that most referrals to child and youth teams came from general practitioners. Referrals also came from the education sector, self/relative referral, other hospital services (non-psychiatric and psychiatric inpatient), social welfare services, and paediatric services [365].

The 2011 Mental Health Commission report, *Child and youth mental health and addiction* [366], aimed to assess the need for mental health services among children and youth, and how well this need was being met. Mental Health Commission (MHC) staff visited DHB services and also undertook qualitative research involving youth. Some of the issues identified by the MHC were: difficulties accessing services due to not being considered to have a serious disorder (although a person might have multiple moderate issues), lack of local child/youth inpatient beds, a need for prevention and early intervention services, a need for intersectoral collaboration (between health, education, justice and social welfare), the importance of schools as a first point of contact for children with mental illness, a need for addiction services, and difficulties with recruitment and retention of staff. The MHC did, however, identify some positive developments including the establishment of services in schools (such as health clinics and GP services) and youth one-stop shops which lessen the stigma associated with seeking care for mental health issues.

The Provision of Child Mental Health Services in Primary Care

There are a number of good reasons to provide child mental health services in primary care: psychological and/or behavioural problems in children are relatively common, secondary services are under-resourced and may have long waiting lists, and there is resistance to attending specialist “mental health services” due to perceived social stigma [367,368]. Primary care providers usually see other members of a child's family and thus



gain an appreciation of the wider family issues that may be relevant to a child's mental health difficulties, and they have often built up a rapport with the child and his or her family through previous consultations for other health concerns.

The Government has recognised that the traditional fee-for-service model of primary care provision is not suited to the provision of mental health services in primary care by multi-disciplinary teams. Through the Primary Mental Health Initiatives (PMHIs) DHBs are funded to purchase primary mental health services including primary mental health coordinators, extended GP consultations, and packages of care such as brief interventions and talking therapies [355]. The 2009 report of the evaluation of the first 26 PMHIs stated that the 25 initiatives which supplied data for the evaluation did not sufficiently address the needs of children and young people. Very few children under the age of 14 accessed services funded through the PMHIs [369].

There are beginning to be some child mental health services provided in primary care. The Triple P Positive Parenting Programme, for families/whānau with children aged 3–7 years with mild to moderate behaviour concerns (older siblings up to 12 years can be included), is being offered free in one-to-one and small group sessions in the Bay of Plenty [370], Counties Manukau, Waitemata and MidCentral DHB regions [371].

Child Mental Health Services in the Education Sector

Resources Teachers of Learning and Behaviour

Resources Teachers of Learning and Behaviour (RTLBs) work as itinerant teachers serving clusters of schools. They provide specialist support to Years 1 to 10 students and their teachers to improve the educational outcomes of students with moderate learning and/or behaviour difficulties [372]. They have a particular focus on Māori and Pasifika students and children and young people moving into Child, Youth and Family care [373]. RTLBs often work in conjunction with other agencies, particularly Special Education Behaviour Support teams, mental health agencies, other health agencies, and Child, Youth and Family [374].

Positive Behaviour for Learning

The Ministry of Education's 2011 Positive Behaviour for Learning Action Plan [375] includes a number of initiatives for parents, teachers and schools aimed at reducing problem behaviour in children and young people and encouraging pro-social behaviour. The Incredible Years – Parent Programme is being delivered to around 15,000 parents/caregivers over five years using reprioritized funding from the Ministry of Education (\$45 million) and \$15 million of new funding announced in the 2009 Budget. The Incredible Years – Teacher programme is being delivered to 7,240 primary and early childhood education teachers. Positive Behaviour for Learning School-wide involves Ministry of Education staff providing training to schools' leadership teams to assist them to implement School-wide, an approach that focuses on preventing problem behaviour, developing students' social skills, reinforcing desired behaviour, consistency when addressing inappropriate behaviour, and using data-based assessment and problem solving to deal with behaviour concerns.

Special Education

Students with more severe behaviour difficulties, including pre-schoolers, may be referred to Special Education which employs a range of professionals including psychologists, special education advisors and early intervention teachers to provide the Severe Behaviour Service [376]. A few students aged eight to twelve years who have especially severe and complex behaviour support needs, sometimes in association with intellectual disability, may be referred to the Intensive Behaviour Service [377]. They may then attend a special residential school or receive "wraparound services" in their local school. Following the Minister of Education's recent decision to close Salisbury School in Nelson and McKenzie Residential School in Christchurch, from 2013 there will be two remaining special residential schools, Westbridge Residential School in Auckland and Halswell Residential School in Christchurch, which will together cater for 100 students [378].



Social Workers in Schools

In 2011 the Government announced additional funding to extend the Social Workers in Schools (SWiS) Service to all decile 1–3 primary schools [379,380]. The SWiS service is aimed at children who are poorly engaged with school and/or frequently absent, children who are experiencing grief and loss, children with behavioural and/or social problems, families who are struggling financially and/or in other ways, and children and families known to CYFS [381]. The social workers are employed by various NGO social service providers, including a number of Iwi social service providers, Presbyterian Support and Barnados, under contract to the Ministry of Education, and they work in partnership with school staff as part of the school community [382]. They provide help to children and their families in situations where social or family circumstances are leading to a child having difficulties in education, health or social development. Referrals to SWiS may be made by children and families (self-referral), the school, the community or Government agencies such as CYFS and can only be made with the family's consent. There are three key components to the work of SWiS: individual casework with children and their families, group programmes, and service coordination and community liaison [381,383].

Conduct Disorders Services Funded by the Ministry of Social Development

The Ministry of Social Development contracts various providers to deliver Multi-Systemic Therapy (MST), Functional Family Therapy (FFT), Multidimensional Treatment Foster Care (MTFC), and Residential Care to Young People from 10–16 years of age who have been diagnosed as having a severe conduct disorder, and to other Young People who have been assessed as having significant conduct problems [384]. Referrals to these services are made by Child, Youth and Family Social Workers.

Multi-Systemic Therapy [385] is an intensive home- and community-based family/whānau treatment method which uses an ecological approach to supporting and up-skilling the Young Person and their family/whānau in order to reduce violence, criminal offending and drug and alcohol abuse, and reduce the need for out-of-home placements. It can include structural family/whānau therapy, strategic family/whānau therapy, behavioural parent training, and cognitive behaviour therapies. Treatment typically lasts about four months. A team of three clinicians providing MST would see up to 30 Young People and their family/whānau per year [384].

Functional Family Therapy is manualised intervention that has been used in a number of countries. The intervention focuses on strengthening relationships within families/whānau through improving communication, reducing negativity and blame, improving parenting skills and identifying community resources the family might access. FTT typically involves 8 to 12 one-hour family/whānau therapy sessions for mild cases, and up to 30 hours for more complex/severe cases, delivered over around three months [384].

Multidimensional Treatment Foster Care (MTFC) involves placing the Young Person with specialised foster parents who provide a highly-structured and supervised environment where positive and negative behaviours are translated into points (gained or lost) which can be traded for privileges. A MTFC Family Therapist works with the family to reduce conflict and increase parenting skills to create a favourable environment for the Young person after they leave MTFC. A MTFC home has one placement at any one time [384]. Residential care is for Young People who have extreme behaviours which mean that they cannot be contained in a less restrictive placement. A Residential care home has four to five high needs Young People in it [384].

Other Child and Family Services Funded by the Ministry of Social Development

Family and Community Services manages and/or funds over 600 organisations to provide a range of programmes and services to support families and communities. These include, among others, Te Punanga Haumarū which provides funding for community action that encourages positive social behaviour and reduces bullying of children and young people [386], Family Start (a home visiting programme for at-risk parents and children) [387],



HIPPY (Home Interaction Programme for Parents & Youngsters) which is a home-based programme that supports parents in becoming actively involved in their four- and five-year-old children's learning to promote school readiness [388], services for teen parents and their children, and Parents as First Teachers.

Behaviour Support Services for Children and Young People with an Intellectual Disability

The Ministry of Health plans and funds long term disability services for children and adults with physical, intellectual and/or sensory disabilities. Behaviour support services (BSS) for people with intellectual disabilities (including those with autism spectrum disorders associated with intellectual disabilities) are included in these services and the Ministry contracts a range of organisations to provide BSS. The main activity of BSS is to deal with clients' challenging behaviours by developing, implementing, monitoring and reviewing plans to minimise the impact of the challenging behaviours [389]. Challenging behaviour is considered to be behaviour that is "of such an intensity, frequency or duration as to threaten the quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion" [390].

The 2011 report of a project undertaken by Split Ridge Associates Ltd on the provision and funding of specialist behaviour support services highlighted several issues relevant to the provision of these services to children [389]. Data from the needs assessment and service coordination (NASC) organisations indicated that there were 2,917 NASC clients ages 0–17 years with a primary diagnosis of intellectual disability. The report authors state that there is no New Zealand data on the proportion of children or adults with intellectual disabilities who have behaviour that would warrant referral to BSS.

To access BSS a referral from a NASC is required. The report authors stated that children with disabilities should be able to access behavioural support through Child Development Services. The report noted that relationships between BSS and DHB Child Development Services or Child Mental Health Services were variable and, if they existed at all, were informal. The report also noted that there was significant and unacceptable variation in waiting times for access to BSS, ranging from nil to 18 months, and that children and young people and people in rural areas tended to experience longer waiting times.

Children in Care: Mental Health, Legal Issues and Service Provision

The mental health of children in care

Children who have suffered abuse and neglect, and those who have suffered inadequate and disrupted attachment to their primary caregiver are at risk of developing mental health problems. It is recognised both internationally and in New Zealand that children in care have higher rates of mental health problems than the general child population [391,392]. Up to 65% of children and young people entering Child, Youth and Family's care have behavioural or mental health problems and around 40% have a mental health disorder of sufficient severity to warrant a referral to specialist CAMHS [392].

Child, Youth and Family established a mental health database in 1999. Analysis of the 1999 data base indicated that, of the mental health diagnoses recorded in the database (which mostly applied to children 10 years and over), 30% were alcohol and drug disorders, 11% conduct disorder or oppositional defiant disorder, 10% ADHD, and 8.6% severe behavioural disorders. Suicidal behaviour and depression accounted for 7% and post-traumatic stress disorder for 6% [393].

Legal Issues relating to the mental health of children in care

Children may come into Child, Youth and Family care under section 14 of the Children, Young Persons, and Their Families Act 1989 (CYP&F Act) in need of care and protection for a number of reasons: because of abuse and neglect (Section 14 (1) (a) and (b)), because their behaviour is likely to be harmful to themselves or others and their parents and caregivers are either unwilling or unable to control them (Section 14 (1)(d)), or because their parents are unable or unwilling to care for them, which may be because of mental health or disability issues (Section 14 (1)(f)) [394].

Children or young people with severe mental health problems who, in the judgement of a psychiatrist, require specialist compulsory treatment come under the provisions of the Mental Health (Compulsory Assessment and Treatment) Act 1992 [395].

Young people (10–16 years) may also come in contact with Child, Youth and Family through the youth justice provisions of the CYP&F Act because they have committed an offence [394]. Conduct Disorder and alcohol and drug problems are common in youth offenders [396].

Under the CYP&F Act, if a child or young person is involved in any proceedings and the Court believes that a medical, psychological or psychiatric report is required, then the Court may order that the child or young person undergo a medical, psychological or psychiatric examination (at which the child or young person is entitled to have one adult present with them). Such a psychiatric examination must be done by a specialist psychiatrist [394].

Mental health services provided by Child, Youth and Family for children in care

As announced in the 2011 Budget, the Government has increased funding for Gateway Assessments of education, health and care and protection needs for children entering Child, Youth and Family care (c. 2,200 per year) [397]. Assessments are also available to children already in care who have significant behavioural and health needs (c. 500 per year), and those considered to be at high risk when they present at a Family Group Conference (c. 1,500 p.a.). Gateway assessments are overseen by Gateway Assessment Coordinators employed by DHBs. The health assessment is usually undertaken by a paediatrician and the child's teachers provide a profile of the child's education engagement and achievement, which includes a Strengths and Difficulties Questionnaire (a screening tool for emotional and behavioural difficulties). The Gateway Assessment Coordinator gathers together information from the health assessor, other healthcare providers, teachers, the social worker and the family to seek agreement on the Interagency Services Agreement, which sets out what part each agency will play in meeting the needs of the child or young person [398]. Gateway Assessments done between July 2011 and March 2012 indicated that 49% of children in care had emotional, behavioural or mental health needs [399].

The 2011 budget also included \$14.5 million over 4 years to provide more mental health services for children in care and \$2.4 million for specialized parenting support interventions for families struggling with behaviour and other social problems [400]. The Ministry of Social Development has contracted The Parenting Place (the new name for Parents Inc.) to provide their Toolbox parenting programme to foster parents, whānau caregivers, Home for Life carers, grandparents raising grandchildren and adoptive parents [401].

The new mental health services, for children whose mental health needs have been identified through Gateway Assessment, include primary mental health services for mild to moderate mental health needs, serving around 1,600 children per year at an average cost of \$1,550 per child, and intensive clinical support services for children and young people with high and complex mental health/behaviour needs, serving 175 young people per year at an average cost of \$14,300 [399].

The primary mental health services will include Watch, Wait and Wonder™ for caregivers of 0–4 year olds, and, for children older than 3 years and/or their caregivers, Parent and Child Interaction Therapy, trauma and abuse focused Cognitive Behavioural Therapy, and the Triple P and Incredible Years parenting programmes. The intensive mental health services for 10–17 year olds are Functional Family Therapy and Multi-systemic Therapy [399].



Common Mental Health Disorders in Children 0–14 Years

The following sections consider the features, epidemiology and treatment of three of the most commonly seen disorders in CAMHS: Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder and Conduct Disorder. They also provide an overview of infant mental health, an area receiving increasing attention as a result of research highlighting the importance of the mother-infant relationship for the development of social and emotional wellbeing and the prevention of behaviour disorders that may lead to school failure followed by unemployment, mental illness, chronic health problems and criminality in adult life.

Attention Deficit Hyperactivity Disorder (ADHD)

Features

The core symptoms of Attention deficit Hyperactivity disorder (ADHD) are hyperactivity, inattention and impulsivity. The DSM-IV criteria for a diagnosis of ADHD are grouped into these three categories and three subtypes of ADHD are defined [402]:

1. *Combined Type*: having at least 6 inattentiveness items plus at least 6 hyperactivity/impulsivity items
2. *Inattentive Type*: at least 6 inattentiveness items
3. *Hyperactive/Impulsive Type*: at least 6 hyperactivity/impulsivity items

Symptoms must have been present for at least six months and be causing significant Impairment in social, academic or occupational functioning and be present in two or more settings and inappropriate to the child's developmental level and not better accounted for by another mental disorder. At least some symptoms causing impairment must have been present before the age of seven years.

The DSM-IV criteria are:

Inattention:

- Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
- Often has trouble sustaining attention on tasks or play activities
- Often does not seem to listen when spoken to directly
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions).
- Often has trouble organizing activities
- Often avoids, dislikes, or does not want to do things require sustained mental effort for a long period of time (such as schoolwork or homework)
- Often loses things needed for tasks or activities (such as toys, school assignments, pencils, books, or tools)
- Is often easily distracted by extraneous stimuli
- Is often forgetful in daily activities.

Hyperactivity:

- Often fidgets with hands or feet or squirms in seat
- Often gets up from seat when remaining in seat is expected, in the classroom or other situations
- Often runs about or climbs when and where it is not appropriate (adolescents or adults may feel very restless)
- Often has trouble playing or enjoying leisure activities quietly
- Is often "on the go" or often acts as if "driven by a motor"
- Often talks excessively

Impulsiveness:

- Often blurts out answers before questions have been finished
- Often has trouble waiting his/her turn
- Often interrupts or intrudes on others (example: butts into conversations or game)

Other children often perceive children with ADHD to be irritating or immature and often avoid them or tease them because of their socially inappropriate behaviour, low frustration tolerance, difficulty following rules, bossiness and intrusiveness [403].

Epidemiology

The 2009 review by Merikangas et al. reported on the prevalence rates of ADHD (according to DSM-IV criteria) in recent community surveys in the U.K. and the U.S. [315]. More recent studies have found that the point prevalence of ADHD in 5–15 year olds was 2.23% [404] and that 12-month prevalence for 4–17 year olds ranged from 2% to 8.7% [405,406,407]. Population surveys have consistently found a higher prevalence of ADHD in boys than girls as follows: 11.8% in boys and 5.4% in girls [406], 3.62% in boys and 0.85% in girls [404], 2.0% for boys and 0.5% for girls [407], and 1.5% for boys and 0.3% for girls [408]. There is conflicting evidence on whether or not ADHD is linked with socio-economic status [404,405,406,407].

Comorbidity

Comorbidity (having more than one disorder) is common in children with ADHD. Between 25% and 50% of children diagnosed with ADHD also meet the criteria for Oppositional Defiant Disorder or Conduct Disorder, 25% have an anxiety disorder, 20% a mood disorder, and 20% a specific developmental disorder (such as a specific learning disorder, language-based difficulties or motor coordination problems). Academic and school failure is common. Many children with Tourette's syndrome also meet the criteria for ADHD [409].

Treatment

There is a vast literature on the treatment of ADHD and numerous published guidelines, including a New Zealand one published in 2001 [410]. The National Guideline Clearinghouse in the U.S. offers a brief synthesis [411] of the recent guidelines from the American Academy of Child and Adolescent Psychiatry (AACAP) [412], and the Scottish Intercollegiate Guidelines Network (SIGN) [409].

Pharmacological Treatment

The primary treatment for the core symptoms of ADHD is medication and most children with ADHD respond positively to one or more drugs. SIGN, and, according to the AACAP, the American Academy of Pediatrics, an international consensus statement and the Texas Children's Medication Project, all recommend psychostimulants as the first line treatment for ADHD. These agents include methylphenidate (RubifenTM and RitalinTM) and dexamphetamine (DexedrineTM). These agents have been the subjects of numerous RCTs and their efficacy and safety is well established [413].

SIGN does not recommend medication for pre-schoolers but the AACAP states that stimulants are widely prescribed in this age group despite the limited number of published controlled trials and it cites research suggesting that dosages should be more conservative in pre-schoolers than school age children. Both SIGN and AACAP agree that amoxetine (a noradrenergic reuptake inhibitor) is superior to placebo, but inferior to psychostimulants, for the treatment of core symptoms of ADHD. SIGN suggests amoxetine for children in whom psychostimulants are not tolerated, ineffective or inappropriate, and AACAP suggests that amoxetine may be considered as a primary medication in individuals with substance abuse problems, comorbid anxiety or who experience severe side effects from psychostimulants (such as mood lability or tics). Both guidelines agree that patients taking amoxetine should be monitored for suicidal ideation, worsening mood or unusual behaviour changes.

Both guidelines cover the use of unlicensed medications for ADHD, including clonidine and guanfacine (alpha agonists) and tricyclic antidepressants, all of which may be appropriate in certain circumstances, and bupropion (for which there is little evidence of effectiveness). SIGN found insufficient evidence on which to base a recommendation for either reboxetine or selegiline.

Behavioural Interventions

While medication is generally more effective than psychological treatments for ADHD, both SIGN and AACAP agree that behaviour therapy alone is appropriate in some circumstances, including mild ADHD, diagnostic uncertainty and parental rejection of medication. SIGN recommends behavioural parent training alone for parents of pre-schoolers.



A 2005 Cochrane review on whether or not family therapy without medication can reduce the core symptoms of ADHD identified only two high quality RCTS addressing this issue [414]. One found that family therapy was slightly superior to placebo medication and the other found no difference between the efficacy of family therapy and that of treatment as usual.

AACAP states that psychosocial treatment is a helpful adjunct to pharmacological treatment if a patient with ADHD has a sub-optimal response to medication, a comorbid disorder such as Oppositional Defiant Disorder or Conduct Disorder, or stressors in family life. Both SIGN and AACAP recommend parent behaviour management training for comorbid problems in conjunction with medication to treat the core symptoms of ADHD. A 2011 Cochrane review of parent training studies found that while there have been many studies (the reviewers evaluated over 100) only five RCTs met Cochrane review quality criteria by including only specialist-diagnosed children with ADHD (meeting DSM-III/DSM-IV or ICD-10 criteria and over five years old), and comparing parent training with no treatment, a waiting list or treatment as usual (adjunctive or otherwise) [415]. The review authors concluded that parent training may improve the behaviour of children with ADHD, reduce parental stress and enhance parental confidence but there were risks of bias in the studies' results and a lack of data on many important outcomes including school achievement and adverse effects.

There have been a number of studies investigating social skills training for children with ADHD. Such training typically focuses on teaching children how to pick up the nuances of social communication in order to be able to wait for their turn to speak, know when to shift topics during a conversation, be able to recognise the emotional expressions of others, and conform to social 'rules', and the expectations of others. A 2011 Cochrane review found even the RCTs among these studies had methodological flaws leading to high risks of bias which limited the reliability of their conclusions and that, at present, it is not possible to either recommend or discourage social skills training for children with ADHD [416].

Alternative Treatments

A number of alternative treatments have been the subject of Cochrane reviews which have not found any evidence for their efficacy: acupuncture [417], homeopathy [418], meditation [419], and polyunsaturated fatty acids (PUFA) [420].

Oppositional Defiant Disorder and Conduct Disorder

Features

Oppositional behaviour and conduct problems are very common reasons for referral to CAMHS [421,422]. The essential features of Oppositional Defiant Disorder (ODD) are a persistent pattern of defiant, negativistic and hostile behaviour, and disobedience to authority figures. The DSM-IV criteria are set out in the text box below.

To qualify for a diagnosis of ODD according to DSM-IV the behaviour must have been present for at least six months, be causing impairment in social, academic or occupational functioning, and include at least four of the following eight:

- often loses temper
- often argues with adults
- often actively defies or refuses to comply with adults' requests or rules
- often deliberately annoys people
- often blames others for his or her mistakes or behaviour
- is often touchy or easily annoyed by others
- is often angry and resentful
- is often spiteful or vindictive

The behaviours must occur more often and/or be of greater severity than is usual for individuals of the child's age and developmental level and not occur as part of a psychotic or mood disorder. If the diagnostic criteria for Conduct Disorder are also met, then that diagnosis takes precedence [402].

Conduct Disorder (CD) is characterised by more serious aggressive and anti-social behaviour. The DSM-IV criteria are listed in the text box below.

A diagnosis of conduct disorder according to DSM-IV requires the presence of at least three of the following in the previous year and at least one in the previous six months:

- often lies to obtain goods or favours or to avoid obligations (i.e. “cons” others)
- often bullies, threatens, or intimidates others
- often initiates physical fights
- has broken into someone else’s house, building, or car
- has stolen items of nontrivial value without confronting a victim (e.g., shoplifting, but without breaking and entering; forgery)
- has used a weapon that can cause serious physical harm to others (e.g. a bat, broken bottle, knife, gun)
- has been physically cruel to people
- has been physically cruel to animals
- has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery)
- has forced someone into sexual activity
- has deliberately engaged in fire setting with the intention of causing serious damage
- has deliberately destroyed others’ property (other than by fire setting)
- often stays out at night despite parental prohibitions, beginning before age 13 years
- has run away from home overnight at least twice while living in a parental or parental surrogate home (or once without returning for a lengthy period)
- is often truant from school, beginning before age of 13 years

The same provisos regarding frequency, severity and developmental age apply as they do to ODD and, if a young person is over 18, they must not meet the criteria for Anti-social personality disorder.

Conduct disorders can be divided into two sub-types, based on age of onset: A childhood-onset type (if at least one criterion characteristic of Conduct Disorder was present prior to age 10 years) and an adolescent-onset Type (absence of any criteria characteristic of Conduct Disorder prior to age 10 years) [402].

The prognosis for early-onset conduct disorders is generally poor, with outcomes in adulthood including alcoholism, drug abuse, criminality, domestic abuse and psychiatric disorders (including anti-social personality disorder) [423,424].

Epidemiology

There have now been a number of community surveys of mental disorders in children and youth in the U.K. and the U.S. which may be considered methodologically rigorous because they applied DSM-IV criteria and included both direct structured interviews with children and reports about children’s symptoms and functioning from parents or primary caregivers. A recent review of these studies found a median 12-month prevalence of disruptive behaviour disorders (i.e. ODD or CD) of 6% with a range from 5 to 14 % [315]. Conduct disorder has consistently been found to be much more prevalent in boys with many studies finding prevalence 3–4 times higher in boys than in girls. Some, but not all, studies have found a higher prevalence of ODD in boys.

In New Zealand, the Christchurch longitudinal study (of children born in 1977) reported the prevalence of Conduct Disorder at 14–15 years as being 14.1% for Māori and 3.5% for non-Māori while the Dunedin longitudinal study (of children born between April 1972 and March 1973) reported the prevalence of conduct disorder at 17–18 years as being 13.6% for Māori and 7.7% for non-Māori [425].

Earlier onset of disruptive behaviour disorders is associated with more aggressive behaviours and worse outcomes. Youths with CD commonly also have ADHD and boys who have a diagnosis of ADHD are more likely to have early onset behaviour disorders. There is also a strong association between mood and anxiety disorders and disruptive behaviour disorders [315].

Treatment

Poor quality parenting is an important precursor of childhood-onset conduct problems. It is characterised by low levels of parental involvement and supervision, and inconsistent and punitive discipline, and it interacts with parental risk factors such as mental illness, substance abuse, disrupted family life, unemployment and low socio-economic status and with risk factors in children including difficult temperament, low verbal intelligence, impulsivity and deficits in processing social information. Despite the cumulative effects of



multiple risk factors, there is increasing evidence that improving parenting skills can result in improvements in children's behaviour and parental mental health [426].

In general, treatment programmes are more effective for children under the age of 12 and parent management training programmes for 3–7 year olds are the interventions most likely to produce substantial reductions in rates of child conduct problems [427].

Parenting programmes

There is now a very considerable literature relating to parenting programmes for the prevention and treatment of conduct disorders. As an entry point into this literature, readers who require more detailed information than is provided here might like to use the *Conduct Problems Best Practice Report* by the Advisory Group on Conduct problems for the Ministry of Social Development [427].

There are two main varieties of parenting programmes: behavioural and relationship, although many combine elements of both. The aim of relationship programmes is to assist parents to understand both their own and their child's emotions and behaviour, and to improve parent-child communication. Behavioural programmes aim to teach parents the skills to address the causes of problem behaviour and strategies such as ignoring bad behaviour and praising co-operative behaviour, building a relationship with their child through child-led play, and setting boundaries with 'time out' for infringements [428].

A 2009 systematic review by Dretzke et al. reviewed 57 randomised controlled trials of parenting programmes for the treatment of children with conduct problems [424]. Most interventions included in the trials were focussed on the parents alone and were delivered over 10 or fewer sessions. Only four trials were considered to be of good quality. The review authors performed a meta-analysis of 24 trials which found that parenting programmes significantly reduced parent-reported intensity and frequency of behaviour problems (intensity SMD -0.67, 95% CI -0.91 to -0.42; frequency SMD -0.62, 95% CI -0.85 to -0.40) and they concluded that parenting programmes are an effective treatment for children with conduct problems. However, they reported that there was insufficient evidence to determine which types of programme were most likely to be effective, mainly because the studies that compared programmes tended to compare programmes that were different in several key characteristics making it impossible to determine which particular programme features might be associated with better outcomes.

A 2012 Cochrane review assessed the effectiveness and cost-effectiveness of behavioural and cognitive-behavioural group-based parenting interventions for improving child conduct problems (in children aged 3–12 years), parenting skills and parental mental health [426]. Noting that previous reviews had combined results from both group-based and individual-based programmes and included programmes that were delivered to children with comorbidities (other disorders in addition to conduct problems) as well as to children with conduct disorders alone, the authors of this review elected to use more stringent criteria in determining which studies to include in their review. Thirteen trials (10 RCTs and 3 quasi-randomised trials) were included together with two economic evaluations based on two of the trials. The review authors concluded that behavioural and cognitive-behavioural group-based parenting interventions were both effective and cost effective in the short term for improving child conduct problems, parenting skills and parental mental health but that further research is needed on long term outcomes.

Nine of the thirteen studies in the 2012 Cochrane review evaluated the Incredible Years Intervention which is being widely used in New Zealand in programmes delivered by Group Special Education, CAMHS and contracted NGOs [429].

A preliminary evaluation of the efficacy and cultural acceptability of these programmes in the New Zealand context has been carried out by Fergusson et al., using data provided by the Ministry of Education [430]. This study used data gathered from 214 parents (of children aged from 2½ to 8 years) who had attended an Incredible Years Basic Parent Programme for at least nine sessions and it compared pre- and post-test scores on the Eyberg Child Behaviour Inventory (ECBI) Problem and Intensity Scales [431] and the Social Competence Scale [432] and also assessed parent satisfaction with the



programme using a questionnaire. Significant improvements were measured on all three scales ($p < 0.001$) and the size of the effects, as indicated by values of Cohen's d values in the range 0.56 to 0.7 [433], were moderate to large. Parents' satisfaction was high. Effects and parent satisfaction were similar for Māori and non-Māori parents.

Issues relating to the delivery of parenting programmes

Concerns have been expressed that parenting programmes may not be reaching those who need them most [434]. A recent Ministry of Justice report reviewed the available New Zealand data on hard-to-reach or vulnerable children and families in the provision of maternity, Well Child and early parenting support services and concluded that there was little data available on the extent to which vulnerable and hard-to-reach families engage in maternity, Well Child and family support services [144]. The report noted that it is important to consider the barriers that lead to non-engagement with services and how they can be addressed. Barriers can occur either at the service or structural level or at the level of individual children, parents and their situation. A useful review of this issue is the Victorian Government Department of Human Services publication *Breaking Cycles, Building Futures. Promoting Inclusion of vulnerable families in antenatal and universal early childhood services* [435].

The Families Commission review of parenting programmes in New Zealand pointed out that "A culture where it is the norm to seek help with parenting may lead to greater engagement in parent education programmes and services". It also noted that parenting programmes need to be part of a broader social development strategy since parents who are struggling to meet basic needs for food and accommodation may find it hard to focus on supporting their children's learning and development [436].

Drug therapy

There are no pharmacological treatments for conduct disorders (ODD or CD) specifically but drugs may be used to treat conditions that are common comorbidities with ODD and CD, particularly ADHD. In recent years in the U.S., the U.K. and Canada, there has been a marked increase in the use of second-generation antipsychotics (including risperidone, quetiapine and olanzapine), in children and adolescents with a number of mental health disorders including disruptive behaviour disorders such as ODD, CD and ADHD as well as autism [437].

A 2012 Cochrane review assessed the effect and safety of atypical antipsychotics for treating disruptive behaviour disorders in children and youths [438]. The review included eight RCTs, seven of which assessed risperidone and one quetiapine. The review authors concluded that there was some limited evidence for the efficacy of risperidone in reducing aggression and conduct problems in children with disruptive behaviours in the short term (4–10 weeks). Weight gain was the most significant adverse outcome reported on. Meta-analysis of data from two trials indicated that the trial participants gained, on average, over 2.3 kg in weight over treatment periods of 6–10 weeks. A nine-month RCT of risperidone in 5–17 year olds with disruptive behaviour disorders reported a mean weight gain of 5.3kg, 3.2 kg in the first 12 weeks and 2.1 kg in the following six months [439].

Infant Mental Health

Introduction

"Infant Mental Health" is the internationally accepted term for the interdisciplinary field of research, public policy and clinical practice concerned with the emotional, social, cognitive and physical health of children from birth until the fourth birthday [356]. The Zero to Three Infant Mental Health Taskforce, a non-profit organisation in the U.S. dedicated to training and supporting professionals, parents and policy makers to improve the lives of infants and toddlers, has described infant mental health as "the developing capacity of infants and toddlers to experience, regulate, and express emotions; form close and secure interpersonal relationships; and explore the environment and learn — all in the context of family, community and cultural expectations for young children" [440].



From a services perspective, infant mental health is about strategies to promote the emotional and social wellbeing of all young children, to strengthen the emotional and social well-being of children whose development is at risk for biological or environmental reasons so that these risks are minimised and these children enter school with appropriate skills, and to help the families of young children to overcome their difficulties so that children's emotional development is not compromised because of parental problems [441].

The relationships that a child builds with the primary caregiver and other family members are critical to the development of the child's social and emotional competence. These relationships are based on the child's continuous give-and-take with the person close to them [442]. A child normally develops selective attachment to one or more primary caregivers at between 7 and 9 months of age. This is indicated by the onset of stranger wariness and by distress on anticipation of separation from attachment figures [443].

Infant mental health disorders result from disruptions to the secure attachment between parent and child. They belong to the parent-child relationship in its social and environmental context, not to the child alone [444].

Epidemiology of infant mental health disorders

Cross-sectional studies of the general child population 1967–2007

Anne Mette Skovgaard, the principal investigator of the Copenhagen Child Cohort 2000 study, a longitudinal study of child mental health (involving 6090 children born in 2000), reviewed the literature on the epidemiology of mental health problems and psychopathology in children 0–3 years from the period 1967–2007. She found 13 studies in clinical populations, 2 longitudinal studies, neither of which collected data on mental health or psychopathology before the age of three, and 12 which were cross-sectional studies of the general child population [445].

The studies involving clinical populations were methodologically diverse which made it impossible to compare diagnostic distributions between studies. However, Skovgaard noted that, in several of these studies, many children did not receive any mental health diagnosis, and that, across several studies the most commonly assigned diagnosis was adjustment disorder, a condition of non-specific manifestations.

Of the 12 studies involving community or general population samples, nine defined cases based on parent-reported child behaviour in questionnaires or checklists. Prevalence rates for behavioural and emotional syndromes or deviant behaviour ranged from 7.3% [446] to 12–16 % [447]. Three studies investigated DSM diagnoses and one ICD-10 diagnoses. The only one of these four to report explicitly on diagnoses in children as young as 2–3 years was done by Lavigne et al. in Chicago [448]. This study recruited 2,262 children who were aged 2–3 years from primary care paediatric clinics and studied them using a 2-stage process involving initial screening with the Child Behaviour Checklist (CBCL) followed by specialist evaluation by a child psychologist for participants who screened high on the CBCL (above the 90th percentile) and a matched group of low-screen children (matched on age, sex and race). Prevalence rates for behaviour problems (scores \geq 90% on the CBCL) were 4.7% (95% CI 3.5–5.9) for 2 year olds and 7.3% (95% CI 5.7–8.9) for 3 year olds. Weighted prevalence rates for Axis 1 DSM-III-R disorders were calculated on the basis of second stage evaluations and clinicians' ratings. Overall prevalence rates of any Axis I disorder(s) of any severity were 13.6% (95% CI 11.6–15.6) for 2 year olds and 26.5% (95% CI 24.2–28.8) for 3 year olds. For severe disorder rates were 7.1 % (95% CI 5.6–8.6) for 2 year olds and 14.0% (95% CI 11.9–16.1) for 3 year olds.

The Copenhagen Child Cohort 2000 study

The Copenhagen Child Cohort 2000 study investigated the prevalence of mental health problems measured as ICD-10 and DC: 0-3 diagnoses in a random sample of 211 children at 1½ years. DC: 0–3 is an alternative age-specific classification scheme developed by ZERO TO THREE which is designed to complement ICD-10 and DSM-IV by using



developmentally appropriate diagnostic categories and diagnostic guidelines and making it possible to classify disordered parent-child relations in a multiaxial framework [449].

The prevalence of axis I diagnoses of a primary child psychiatric syndrome was found to be 16% (95% CI 11.9–22.1) with ICD-10 and 18% (95% CI 13.5–24.4) with DC: 0–3. The DC: 0–3 diagnosis of regulatory disorder was the most frequent child diagnosis (7.1%, 95% CI 4.0–11.5) and the most frequent diagnosis of all was parent-child relationship disturbances (8.5%, 95% CI 5.1–13.2) [445].

The Copenhagen study found significant associations between high psychosocial risk and a mental health disorder in the child (Odds ratio 3.1, 95% CI 1.2–8.1) and between high psychosocial risk and a parent-child relationship disorder (OR 11.6, 95% CI 3.8–370.5). High psycho-social risk was defined as two or more of: low parental education, overcrowding, parental psychiatric disorder, parental history of institutional care/delinquency/more than two changes of caregiver, marital discord, teenage parents, solo parent, unwanted pregnancy, poor social integration and support for parents, and poor parental coping skills [445].

The Copenhagen study also reported on problems of health and development identified by child health nurses at home visits in the first ten months of life. On average the nurses made four visits per child over this time. The most common mental health related problems noted by the nurses were feeding problems (30% of children over the 10 months), sleeping problems (20%), concern about overall development (13%), abnormal development of verbal and non-verbal communication (11.7%), and mother-child relations (10.1%) [445].

Parent-reported mental health in a community sample of three year olds in New York

Sarah J. Bufferd et al. recently (2011) reported the results of telephone interviews with the parents of 541 three year olds living in the vicinity of Stony Brook, NY which used the Preschool Age Psychiatric Assessment (PAPA) to determine rates of DSM-IV disorders [450]. Just over one quarter of the children (27.4%) met the criteria for a PAPA/DSM-IV diagnosis, and 9.2% met the criteria for two or more diagnoses. The most common diagnoses were Oppositional Defiant Disorder (ODD) (9.4%), specific phobia (9.1%), and Separation Anxiety Disorder (5.4%). There was significant comorbidity between ODD and ADHD, and between depression, anxiety and ODD. With a few exceptions, demographic variables were not associated with diagnoses in this sample.

The importance of secure attachments for infant mental health

Numerous studies have shown that insecurely attached children, particularly those showing disorganised patterns of behaviour, are at greater risk for psychopathology, behaviour problems, poor cognitive development and inability to cope with stress [451,452].

The development of secure attachment seems to be impaired more by factors external to the child than physical or neurological abnormalities in the child but risk factors in the child (such as difficult temperament or mental or physical disability) may amplify the effects of external risk factors. Children raised in orphanages may fail to develop attachments, and children of depressed mothers may have impaired attachments, but children who are deaf or who have Down syndrome or autism can still form secure attachments [453].

The “gold standard” test for assessing infant-parent attachment is the “Strange Situation Procedure” (SSP) which involves monitoring a series of interactions between a 12 to 20 month old child, a caregiver and a female “stranger” [454]. Two brief separations from the caregiver are arranged to provide a moderate level of stress in order to activate the child’s need for caregiver support. Based on differences in how infants organise their attachment and exploratory behaviours, and how they behave on reunion with their caregiver, infant attachments can be classified as being secure, avoidant, resistant or disorganised.

Children with secure attachments show distress on separation from their primary caregiver, and when reunited, display active comfort seeking, resolution of distress, and resumption of exploration. Those with avoidant attachments show little response to



separation from their caregiver, although they may reduce their exploration somewhat, and either ignore or actively avoid the caregiver on reunion. Children with resistant attachments show intense distress on separation, followed by attempts to obtain comfort that are limited, awkward or interrupted, and show little or incomplete resolution of distress on reunion with resistance to caregivers' attempts to soothe them. Children whose attachment is classified as disorganised show anomalous reactions to their caregiver which may include chaotic mixtures of proximity-seeking, avoidance and resistance, being fearful of their parent, and failing to use the parent as an attachment figure (e.g. preferring the stranger, trying to get out the door). Children who had disorganised attachment as infants may become pre-schoolers who show controlling/punitive or solicitous/caring behaviours towards their parent or they may continue to show disorganised attachment behaviours [453]. In low-risk populations, the prevalence of disorganised attachment has been found to be around 15% [452] but much higher rates have been found in children clinically referred for disruptive behaviour disorders [455] and in maltreated pre-schoolers [456].

Along with insensitive caregiving behaviours, high-risk ecological contexts such as poverty, solo parenthood, low parental education, parental substance abuse and belonging to an ethnic minority are important precursors of insecure attachments. A recent meta-analytic study by Chantal Cyr et al. of 55 studies (which yielded 59 samples with non-maltreated high-risk children and 10 samples with maltreated children) sheds some light on the relative contributions of various risk factors for insecure attachment [457]. The maltreatment studies showed large effects: maltreated children were less secure and more disorganised than other high-risk children. However, children exposed to five socio-economic risk factors were not significantly less likely to have disorganised attachments than maltreated children showing that the accumulation of multiple socioeconomic risks seems to have a similar effect to maltreatment.

Over recent years there has been increasing evidence that the hormones involved in attachment and in stress responses have lasting effects on brain biology via epigenetic processes and may thus result in intergenerational effects. These hormones appear to affect how individuals respond to each other and whether they tend to create cooperative and trusting relationships or display aggressive tendencies [322,458].

Applying findings from infant mental health research in early childhood education and childcare

The development of secure relationships between a child and his or her parents, caregivers and teachers is important for the child's emotional and social wellbeing. Ways in which childcare and early childhood education services can support the development and maintenance of secure relationships include: assigning primary caregivers to care for specific infants and toddlers, ensuring continuity of caregiving by allowing the same caregiver to remain with a child from infancy to the late toddler years, providing low child: caregiver ratios and small group sizes, supporting professional development so staff can learn more about the importance of relationships and responsive practice, helping to build families' social support networks to enhance parental wellbeing, and being aware of cultural differences in communication styles and in the meanings assigned to particular behaviours or expressions of emotion [459,460]. Early childhood service providers need the knowledge and skills to be able to recognise infants and young children whose behaviour indicates mental health difficulties or possible neglect and take appropriate action [461].

Recognition and assessment of attachment and infant mental health disorders

Signs in children indicating a potential infant mental health disorder vary with the age of the child. A baby may: resist being held, be difficult to console or have prolonged inconsolable crying, have feeding or sleeping difficulties, fail to thrive, fail to seek eye contact or avoid eye contact, appear unresponsive to efforts to engage him/her, rarely coo, babble or vocalise, or seem to have limited ability to regulate his/her emotions. A toddler or pre-schooler may: show either little preference for or excessive dependence on the parent(s)/primary caregiver, not be apprehensive with strangers, be excessively irritable or fearful, have limited/inappropriate expression of feelings, lack curiosity about people,



playthings or the environment, appear sad or withdrawn, show inappropriate sexual behaviour or inappropriate impulsive or aggressive behaviour, have excessive fears that don't respond to reassurance or frequent night terrors, have frequent tantrums, have significant language delay, or have an unusual need for order and cleanliness [249].

Clinical assessment of attachment in young children should involve both an assessment of caregiver-child interaction and a narrative interview with the caregiver [443]. Observing the parent-child interaction following a brief separation, as in the "Strange Situation Procedure", is useful.

Securely attached children show affection to their caregiver, seek closeness when needing comfort, rely on the caregiver for help and cooperate with the caregiver. Atypical parenting behaviours associated with disorganised attachment include withdrawal (not greeting the child on being reunited), being frightened/hesitant/uncertain, role confusion (pleading with the child, threatening to cry, speaking as if the child were an adult partner), affective communication errors (sending contradictory signals e.g. laughing at a child's distress, using a positive tone of voice to put the child down or tease, expressing distress when the child smiles) and intrusiveness or negativity (mocking, withholding a toy, pushing the child away).

Clinically concerning features of parent narrative attachment interviews include expressions of anger about the child's needs, indifference to the child's needs, showing little capacity to imagine what the child feels or needs, blaming the child for difficulties like crying or not sleeping, limited memories about the child, talking about previous experiences of loss or trauma even if not asked about these, and irritation with the interviewer [443].

Parenting Programmes for Enhancing Infant Mental Health and Parent-Child Relationships


Parent-child relationships are critical for infant mental health so interventions for enhancing infant mental health focus on working with parents. The U.K. Department of Education commissioned researchers at the National Academy of Parenting Research (NAPR) at King's College London to evaluate parenting programmes against standards of best practice [462]. Programmes were rated from 1-star (requires further development) to four stars (strong). The highly-rated parent programmes the NAPR evaluated that applied to children 0–3 years were:

Family Nurse Partnership (4☆): A targeted programme for young, poor, single mothers

Family Nurse Partnership (FNP) is for young mothers (19 years and younger) expecting their first child. Mothers are enrolled in the programme during pregnancy and receive weekly or fortnightly visits from a Family Nurse until their child's second birthday (on average a total of 59–64 visits, each lasting c. 1.5 hours). The nurse establishes a supportive relationship with the mother and together they develop strategies for understanding the mother's and the child's needs, and identify resources in the community that may support the health and development of mother and child, to which the mother is likely to be referred. Advice and support is provided in six domains: personal health, environmental health (especially housing), life course development (encouraging the mother to continue her education, find a job and postpone the birth of a second child), maternal role, managing relationships with friends, family and the baby's father, connections with health and human services, and pregnancy advice.

There have been three randomised controlled trials of FNPs with young, single, low income mothers in various parts of the United States: Elimara NY (400 mothers) [463], Memphis TN (734 mothers) [464] and Denver CO (490 mothers) [465]. The Elimara trial found that, compared to the control group, the mothers in the intervention group had significantly fewer subsequent births, days receiving welfare and arrests and convictions while their children were less likely to be abused or neglected, or be arrested or convicted for a crime. The Memphis mothers participating in FNPs showed significant improvements in time on welfare benefits, number of children born while they were in their late





teens/early twenties, their sense of efficacy as mothers, and the length and quality of their relationship with a romantic partner. The Memphis children showed significantly lower rates of cigarette and alcohol use and depression and anxiety. The Denver mothers in the FNP programme were significantly more likely to wait longer before having a second child and to experience less domestic violence. For the Denver children overall there were no significant differences between the intervention and control groups but for the subsample of children whose mothers had low psychological resources, the FNP children were significantly more likely to show improved intellectual and behavioural functioning.

A large RCT of FNP is currently underway in the U.K. involving 1,645 women from 18 FNP sites [462]. The first results are expected in 2013. There have been several cost studies of FNPs in the U.S. suggesting that these programmes return four to six dollars for every dollar invested [466]

Family Foundations (3☆): A universal programme for expectant couples

Family Foundations (FF) is for cohabiting couples expecting their first child. Couples attend five weekly group sessions in the final three months of pregnancy where they learn how to support each other as parents after the baby is born. Six months after the birth the parents return for four more weekly sessions to learn about communicating effectively as parents and supporting their child's development. The programme is based on research linking improved couple relationships to parental wellbeing and on research linking co-parenting behaviours to children's behaviour.

The evidence for the effectiveness of Family Foundations comes from one RCT involving 169 heterosexual middle class couples who were randomly assigned to receive FF plus childbirth training or childbirth training only [467]. Assessments before and after the programmes indicated the following significant outcomes for the FF group: decreased maternal depression and anxiety, increased co-parenting support and increased infant soothability. At twelve-month follow up (93% of mother and 88% if fathers participated) the FF group demonstrated reduced parental competition, reduced negative communication (mothers only) increased parental warmth and increased child self-soothing [468]. At Three Year follow up (85% of original mothers, 77% of original fathers) the FF group showed improved co-parenting, reduced parental stress, improved child social competence for both boys and girls, and reduced externalising and internalising behaviours, hyperactivity and aggression in boys only [469].

New Beginnings (3☆): For Mothers and infants in prison with parent-child relationship difficulties

In this programme mothers, who may be depressed, anxious or have other mental health issues, attend 12 weekly small group sessions, with their babies, at which they learn how to understand their baby's needs and respond sensitively to them, and also reflect on their own childhood and life experiences. The effectiveness of this programme has been demonstrated in one cluster RCT carried out in seven mother-baby units within U.K. prisons [470]. Three units (88 mothers and babies) were randomly assigned to receive New Beginnings while four units (75 mothers and babies) acted as a control group. The mothers in the New Beginnings group showed significant improvements in their sensitivity to their child and in their reflective functioning.

Pathways Triple P (3☆): For parents on the child protection register or at risk of maltreating their child

Pathways Triple P is a level five intervention within the five-tiered Triple P system of care. There is on-going research and evaluation of various combinations of Triple P interventions in diverse settings and populations. A meta-analysis of 55 evaluations of Triple P found that it had consistent positive effects for parents and children [471]. Community-wide implementation of the entire Triple P system has been the subject of a RCT in the U.S. which suggests that it results in significant reductions in child maltreatment [472]. An Australian cost-effectiveness study concluded that implementation of the entire five-tiered Triple P system on a population basis in Queensland would be cost-effective for reducing the prevalence of conduct disorder (i.e. that it would save the

state more than it cost) provided that it reduced the prevalence of conduct disorder by 7% or more and that therefore it would be a worthwhile use of limited health funds [473].

Pathways Triple P (PTP) participants are identified by social services or by practitioners leading a less intensive Triple P Programme. They are likely to be using overly harsh or inappropriate discipline, have highly unrealistic expectations of their child's behaviour, make inappropriate attributions about the intentions behind their child's behaviour and have difficulty managing their own anger and moods. Pathways Triple P involves parents attending between 10 and 12 weekly individual or group sessions at which they learn how to have appropriate expectations for their child's behaviour, manage their own moods and anger, increase their self-efficacy as parents and better manage their child's unwanted behaviour.

There is evidence for the effectiveness of PTP from two RCTs, one involving the parents of 60 children (aged from four to ten) who had concerns about their relationship with their child [474] and one involving the parents of 98 children (aged 2 to seven) who were known to child protection services [475]. In the trial involving the parents of the older children the parents who participated in PTP (compared to the wait-list group) were significantly more likely to report improvements in their parenting practices, their confidence as parents, their child's behaviour and the quality of parent child relationships, both immediately after completion of the programme and three months later. The trial involving younger children compared parents who received PTP to a control group of parents who received a standard behavioural family intervention. Both groups of parents showed significant improvements after intervention in their parenting practices, the parents' attributions of their child's behaviour and their child's behaviour, both immediately after the intervention and six months later.

Other interventions

Other interventions for young children which were evaluated by the National Academy of Parenting Research and given a 2-star rating are: The Anna Freud Centre Parent Infant Project, Family Transitions Triple P, Mellow Parenting, Parents as First Teachers and Noughts to Sixes – From Pram to Primary School [462].

Postnatal Depression and Infant Mental Health

Postnatal depression and its effects on mother-infant relationships

Postnatal depression is relatively common, affecting around 13% of mothers [476]. Risk factors commonly reported in published studies include a previous history of depression, depression during pregnancy, difficulties in the marital relationship, a lack of social support and stressful life events. Probable risk factors, reported in some, but not all, studies include family history of psychopathology, personality characteristics, single parenthood, a difficult birth experience and infant temperament [477].

It appears that characteristics of the infant may contribute to maternal depression. Women who perceive their babies as being fussy or difficult to care for are more likely to be depressed [477]. Disabled infants tend to provide fewer and less readable cues to their mothers, show more withdrawal from or avoidance of social interactions, display more negative affect and less positive affect and have difficulties in turn-taking during social exchanges [478].

There is considerable evidence that mother-infant interactions may be impaired if the mother is suffering from postnatal depression and that the infant's social, emotional and cognitive development may be harmed as a result, particularly if the depression is prolonged and/or there are adverse socio-economic circumstances [479]. Male babies appear to be more vulnerable to the effects of maternal depression [480]. Depressed mothers have been observed to touch their infants less often, handle them more roughly, smile and talk to their child less often and coordinate their communication with their child's less well than non-depressed mothers [481]. Studies on parenting practices have reported that mothers with postpartum depression are more likely to discontinue breastfeeding [482].



Interventions for postnatal depression

Interventions for postnatal depression include psychotherapy, psycho-social interventions and medication.

Drug treatments for postnatal depression include anti-depressants, St. John's Wort and hormone treatment. Selective serotonin reuptake inhibitors (SSRIs, e.g. fluoxetine, paroxetine, and sertraline) and other antidepressants (e.g. nortriptyline) are effective for the treatment of depression in general and, for this reason, the reviewers at *clinicalevidence.bmj.com* stated that, although there have been very few RCTs assessing the effects of SSRIs or other antidepressants for the treatment of post-natal depression, they are likely to be beneficial for post-natal depression [483]. They found that there was insufficient evidence to draw any conclusions about hormones or St. John's Wort.

Regarding non-drug treatments, a 2009 Cochrane review assessed psychosocial and psychological interventions for treating postpartum depression [484]. The review reported on nine RCTs or quasi-RCTs which reported outcomes for 956 women. The psychological interventions in the reviewed studies included cognitive behavioural therapy, interpersonal psychotherapy, and psychodynamic therapy. The psychosocial interventions included peer support and non-directive counselling, provided either by trained health workers or peer volunteers. The review authors concluded that, overall, psychological and psychosocial interventions are effective treatments for postnatal depression although they reported that the methodological quality of the studies was, in general, not strong and it was unclear what the long term effects of these types of interventions were.

A number of Cochrane reviews have examined preventive interventions for postnatal depression. These reviews found that there was insufficient evidence to draw any conclusions about the benefits of hypnosis, antidepressant medication or psychological or psychosocial interventions [485,486,487]. A review of two trials (229 women) found that synthetic progestogens do not prevent postnatal depression and that, because they have a significant negative effect on maternal mood, it is questionable whether they should be prescribed for other indications, such as contraception, in the postnatal period [488].

Conclusion

Children with mental health disorders are less able than adults with mental disorders to talk about their distress. They indicate their impaired mental health by their behaviour and they do not usually choose to seek help from mental health services. Adults close to them notice differences from normal age-appropriate behaviour and/or social and emotional competence and seek help on their behalf.

Parent-child relationships are critical to children's social and emotional wellbeing and their development of self-esteem, empathy, conscience, social and cooperative skills and the capacity to manage their emotions and form successful adult relationships and become competent nurturing parents. Poor quality parenting characterised by neglect, inappropriate expectations of child behaviour, harsh discipline and inadequate supervision is associated with the development of conduct problems in children. Chronic stress in early life as a result of poverty, parental mental illness or substance abuse, domestic violence and teen pregnancy can have lasting effects on a child's developing brain and lead to poor mental and physical health in later life. Children who exhibit anti-social behaviour early in life are at risk of poor social and educational outcomes, mental illness, criminality, and substance abuse in later life. Compared to other OECD countries New Zealand has high rates of child abuse and neglect and children who have been abused or neglected are likely to have persistent mental health problems.

Around half of lifetime mental health disorders begin by the mid-teens. Prevention and intervention services are more effective in younger children but older children make up the vast majority of CAMHS clients. There are beginning to be some infant mental health services for very young children and their caregivers and there is increasing provision of child mental health services in primary care but there remains considerable unmet need for services. When services focus only on those with the most severe disorders opportunities for prevention and early intervention are lost.



ACCESS TO MENTAL HEALTH SERVICES: LATE CHILDHOOD AND ADOLESCENCE

The following section uses data from the Project for the Integration of Mental Health Data (PRIMHD) to explore access to mental health outpatient, community and inpatient services for children and young people with the following mental health diagnoses:

- Anxiety disorders
- Stress reaction/adjustment disorders
- Eating disorders

These diagnoses were selected as they were the most commonly assigned in late childhood and early adolescence to those recorded as accessing mental health services in the PRIMHD. In addition, the In-depth Topic commencing on **Page 365** reviews mental health issues for children aged 0–14 years in more detail.

Data Source and Methods

Information on the Project for the Integration of Mental Health Data (PRIMHD) and the DSM-IV codes used in this analysis is provided in the *Access to Mental Health Services: Introduction* section on **Page 347**.

Note 1: Because PRIMHD data is configured in a very different way to that contained in the National Minimum Dataset (hospital admissions) the reader is urged to review the methods section on **Page 347**, in order to become familiar with the strengths and limitations of PRIMHD.

Note 2: The information presented in this year's report differs from that presented in the NZCYES' 2009 Reports, because of differences in the data collections (PRIMHD vs. the Mental Health Information National Collection (MHINC)) and the coding systems used to code mental health diagnoses (in PRIMHD the data received were coded in DSM-IV, whereas in MHINC diagnoses were coded using ICD-10-AM).

New Zealand Distribution

Numbers Accessing Services

In addition to the diagnoses reviewed in the section on access to mental health services for children, a number of mental health diagnoses became increasingly common during late childhood and early adolescence. During 2009–2011, these included anxiety disorders, stress reaction/adjustment disorders and eating disorders (**Table 99**). While it is likely that a number of children and young people with these diagnoses would still have their care managed in the paediatric outpatient setting (with this workload not being captured by PRIMHD) the extent to which PRIMHD undercounts access to services for these children and young people may be less than in the previous section, due to the older age cohort involved (and the likelihood that mental health services rather than paediatric outpatients would be primarily responsible for their care).

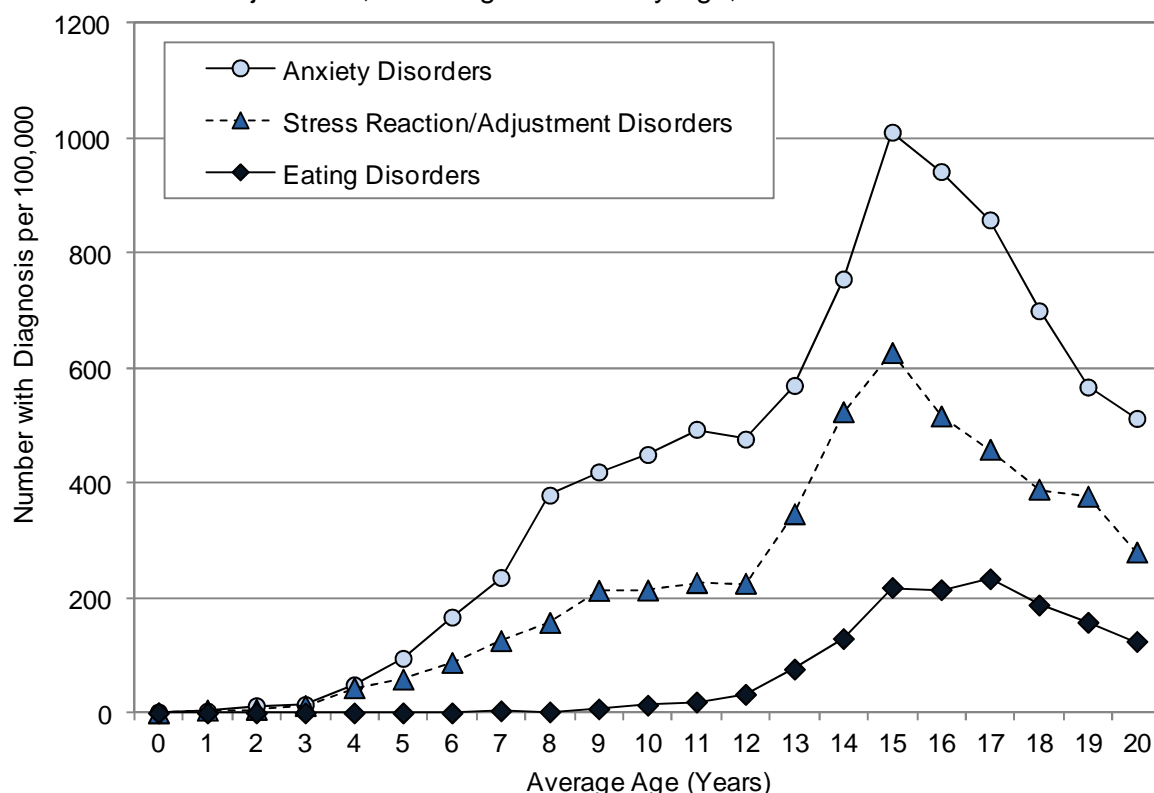
Numbers Accessing Services by Diagnosis and Age

Anxiety and Stress Reaction/Adjustment Disorders: In New Zealand during 2009–2011, the number accessing mental health services with anxiety and stress reaction/adjustment disorders increased steadily between four and twelve years of age. Numbers then increased more rapidly, to reach a peak at fifteen years, before declining again during the late teens. At each age from five years onwards, the number accessing services with anxiety disorders was higher than the number accessing services with stress reaction/adjustment disorders (**Figure 131**).

Eating Disorders: In New Zealand during 2009–2011, very few children accessed mental health services with eating disorders prior to ten years of age. Numbers then increased gradually during adolescence, to reach a plateau between fifteen and seventeen years, before declining again in the late teens (**Figure 131**).



Figure 131. Children and Young People Accessing Mental Health Services with Anxiety, Stress Reaction/Adjustment, or Eating Disorders by Age, New Zealand 2009–2011



Source: Numerator: PRIMHD (individuals attending Mental Health Services who had ever been assigned these diagnoses); Denominator: Statistics NZ Projected Population (2010 = mid-point of 2009–2011)

Numbers Accessing Services by Diagnosis, Ethnicity and Gender

Anxiety Disorders: In New Zealand during 2009–2011, the number of children and young people accessing mental health services with an anxiety disorder was *significantly* higher for females and for European/Other > Māori > Pacific children and young people. A similar pattern was seen for mental health service contacts and inpatient bed nights (**Table 97**).

Stress Reaction/Adjustment Disorders: In New Zealand during 2009–2011, the number of children and young people accessing mental health services with a stress reaction/adjustment disorder was *significantly* higher females and for European/Other > Māori > Pacific children and young people. While similar gender differences were seen for mental health service contacts and inpatient bed nights, both measures were *significantly* higher for Māori > European/Other > Pacific children and young people (**Table 97**).

Eating Disorders: In New Zealand during 2009–2011, the number of children and young people accessing mental health services with eating disorders was *significantly* higher for females and for European/Other > Māori and Pacific children and young people. Similar patterns were seen for mental health service contacts and inpatient bed nights, although for these measures, access rates were *significantly* higher for European/Other > Māori > Pacific children and young people (**Table 98**).

Table 97. Children and Young People Aged 0–24 Years Accessing Mental Health Services with Anxiety Disorders or Stress Reaction/Adjustment Disorders, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Anxiety Disorders												
Ethnicity												
European/Other	5,629	548.26	1.00		92,763	9,034.9	1.00		15,274	1,487.6	1.00	
Māori	1,120	314.06	0.57	0.54–0.61	24,550	6,884.2	0.76	0.75–0.77	4,798	1,345.3	0.90	0.88–0.93
Pacific	189	131.10	0.24	0.21–0.28	3,576	2,480.2	0.27	0.27–0.28	634	439.8	0.30	0.27–0.32
Gender												
Female	3,873	519.67	1.00		72,530	9,731.8	1.00		13,703	1,838.6	1.00	
Male	3,065	391.84	0.75	0.72–0.79	48,359	6,182.3	0.64	0.63–0.64	7,003	895.2	0.49	0.47–0.50
Stress Reaction/Adjustment Disorders												
Ethnicity												
European/Other	2,740	266.87	1.00		32,739	3,188.8	1.00		4,774	465.0	1.00	
Māori	832	233.30	0.87	0.81–0.94	12,067	3,383.6	1.06	1.04–1.08	1,967	551.7	1.19	1.13–1.25
Pacific	186	129.01	0.48	0.42–0.56	2,196	1,523.2	0.48	0.46–0.50	251	174.3	0.37	0.33–0.43
Gender												
Female	2,132	286.07	1.00		28,801	3,864.4	1.00		4,722	633.6	1.00	
Male	1,626	207.87	0.73	0.68–0.78	18,201	2,326.9	0.60	0.59–0.61	2,271	290.3	0.46	0.44–0.48

Source: PRIMHD; Note: *Individuals*: Total Number = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 children and young people 0–24 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Number = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 children and young people 0–24 years; *Bed Nights*: Annual Number = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 children and young people 0–24 years

Table 98. Children and Young People Aged 0–24 Years Accessing Mental Health Services with Eating Disorders, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Eating Disorders												
Ethnicity												
European/Other	1,118	108.89	1.00		27,037	2,633.3	1.00		7,095	691.0	1.00	
Māori	74	20.75	0.19	0.15–0.24	1,759	493.3	0.19	0.18–0.20	477	133.8	0.19	0.18–0.21
Pacific	14	9.71	0.09	0.05–0.15	261	181.3	0.07	0.06–0.08	81	56.2	0.08	0.07–0.10
Gender												
Female	1,119	150.14	1.00		27,505	3,690.5	1.00		7,166	961.6	1.00	
Male	87	11.12	0.07	0.06–0.09	1,552	198.5	0.05	0.05–0.06	486	62.2	0.06	0.06–0.07

Source: PRIMHD; Note: *Individuals*: Total Number = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 children and young people 0–24 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Number = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 children and young people 0–24 years; *Bed Nights*: Annual Number = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 children and young people 0–24 years

South Island Distribution

Children and Young People Accessing Mental Health Services by Diagnosis

In addition to the diagnoses reviewed in the section on access to mental health services for children, a number of mental health diagnoses became increasingly common during late childhood and early adolescence. In the South Island during 2009–2011, these included anxiety disorders, stress reaction/adjustment disorders and eating disorders.

In Nelson Marlborough, Canterbury and Otago during 2009–2011, the number of children and young people accessing mental health services with anxiety disorders, stress reaction/adjustment disorders and eating disorders were all *significantly* higher than the New Zealand rate, while in the other South Island DHBs the picture was more mixed (**Table 99, Table 100**).

In interpreting these differences, it must be remembered that these figures reflect access to services rather than the underlying prevalence of these conditions in the community. Further regional differences in the proportion of cases managed by paediatric outpatient services (which are not captured in PRIMHD) vs. child and youth mental health services may account for some of the differences seen.

Local Policy Documents and Evidence-Based Reviews Relevant to Mental Health Issues in Children and Young People

Local policy documents and evidence-based reviews relevant to the management of mental health issues in children and young people are reviewed in the **Access to Mental Health Services: Introduction** section commencing on **Page 347**. In addition, **Table 115** on **Page 415** provides an overview of the literature on the prevention of drug use in young people, while **Table 119** on **Page 424** considers suicide prevention in young people. Finally, the In-Depth Topic **Mental Health Issues in Children** commencing on **Page 365** provides a more detailed review of the literature as it relates to children aged 0–14 years.



Table 99. Children and Young People Aged 0–24 Years Accessing Mental Health Services with Anxiety, Stress Reaction/Adjustment or Eating Disorders, Nelson Marlborough, South Canterbury and Canterbury vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Children and Young People 0–24 Years						
Nelson Marlborough						
Anxiety Disorders	433	1026.43	2.26	2.05–2.49	15.5	3.92
Stress Reaction/Adjustment Disorders	221	523.88	2.13	1.86–2.44	9.9	2.37
Eating Disorders	75	177.79	2.25	1.78–2.84	22.9	10.73
South Canterbury						
Anxiety Disorders	155	924.82	2.04	1.74–2.39	13.2	2.04
Stress Reaction/Adjustment Disorders	42	250.60	1.02	0.75–1.38	8.7	0.13
Eating Disorders	27	161.10	2.04	1.39–2.99	16.2	4.14
Canterbury						
Anxiety Disorders	1,294	761.22	1.68	1.58–1.78	11.5	4.66
Stress Reaction/Adjustment Disorders	531	312.37	1.27	1.16–1.39	7.7	3.03
Eating Disorders	245	144.13	1.83	1.59–2.09	11.9	6.39
New Zealand						
Anxiety Disorders	6,938	454.21	1.00		17.4	2.98
Stress Reaction/Adjustment Disorders	3,758	246.02	1.00		12.5	1.86
Eating Disorders	1,206	78.95	1.00		24.1	6.35

Source: PRIMHD: *Total No of Individuals* = total number of individuals with diagnosis accessing services during 2009–2011; *Annual Contacts per Individual* = number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; *Annual Bed Nights per Individual* = number of bed nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis. As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%

Table 100. Children and Young People Aged 0–24 Years Accessing Mental Health Services with Anxiety, Stress Reaction/Adjustment or Eating Disorders, West Coast, Otago and Southland vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Children and Young People 0–24 Years						
West Coast						
Anxiety Disorders	65	643.88	1.42	1.11–1.81	21.4	1.30
Stress Reaction/Adjustment Disorders	24	237.74	0.97	0.65–1.44	26.9	0.31
Eating Disorders	10	99.06	1.25	0.67–2.34	45.0	12.93
Otago						
Anxiety Disorders	552	849.75	1.87	1.72–2.04	15.8	2.59
Stress Reaction/Adjustment Disorders	441	678.88	2.76	2.50–3.04	10.6	0.99
Eating Disorders	87	133.93	1.70	1.36–2.11	19.4	13.47
Southland						
Anxiety Disorders	210	583.01	1.28	1.12–1.47	14.8	1.78
Stress Reaction/Adjustment Disorders	162	449.75	1.83	1.56–2.14	11.4	0.87
Eating Disorders	25	69.41	0.88	0.59–1.31	21.6	3.71
New Zealand						
Anxiety Disorders	6,938	454.21	1.00		17.4	2.98
Stress Reaction/Adjustment Disorders	3,758	246.02	1.00		12.5	1.86
Eating Disorders	1,206	78.95	1.00		24.1	6.35

Source: PRIMHD: *Total No of Individuals* = total number of individuals with diagnosis accessing services during 2009–2011; *Annual Contacts per Individual* = number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; *Annual Bed Nights per Individual* = number of bed nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis. As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%

ACCESS TO MENTAL HEALTH SERVICES: LATE ADOLESCENCE

The following section uses the National Minimum Dataset to explore the most common reasons for hospitalisation with a mental health diagnosis in young people aged 15–24 years. In this section, the unit of analysis is the number of hospital admissions, rather than the number of individuals accessing services, with the coding system used to assign diagnoses being ICD-10-AM.

In addition, data from the Project for the Integration of Mental Health Data (PRIMHD) is used to explore access to mental health outpatient, community and inpatient services in young people with the following diagnoses:

- Schizophrenia and other psychotic disorders
- Personality disorders
- Depression, bipolar disorder and other mood disorders
- Substance-related disorders (alcohol, cannabis, and other substances).

These diagnoses were selected as they were the most commonly assigned to young who were recorded as accessing mental health services in the PRIMHD. In this second section, the units of analysis are the number of young people accessing services, and the annual number of contacts and inpatient bed nights per individual, with the coding system used to assign diagnoses being DSM-IV.

Data Source and Methods

Information on the Project for the Integration of Mental Health Data (PRIMHD) and the DSM-IV codes used in this analysis is provided in the Access to Mental Health Services: Introduction section on **Page 286**.

Note 1: Because PRIMHD data is configured in a very different way to that contained in the National Minimum Dataset (hospital admissions) the reader is urged to review the methods section on **Page 286**, in order to become familiar with the strengths and limitations of PRIMHD.

Note 2: The information presented in this year's report differs from that presented in the NZCYES' 2009 Reports, because of differences in the data collections (PRIMHD vs. the Mental Health Information National Collection (MHINC)) and the coding systems used to code mental health diagnoses (in PRIMHD the data received were coded in DSM-IV, whereas in MHINC diagnoses were coded using ICD-10-AM).

In addition, the section below provides additional information on the National Minimum Dataset, which has been used to review mental health inpatient admissions for those aged 15–24 years.

Definition

Hospital admissions for young people aged 15–24 years with an ICD-10-AM mental health diagnosis

Data Source

Numerator: National Minimum Dataset: Hospital admissions in young people aged 15–24 years with a *primary diagnosis* of a Mental or Behavioural Disorder (ICD-10-AM F00–F99). Admissions with an Emergency Medicine specialty code in the range M05–M08 on discharge were excluded. Specific diagnoses included ICD-10-AM F10 or Z72.1 (Mental Health Issues due to Alcohol or Alcohol Use); F12 (Mental Health Issues due to Cannabis Use); F17 or Z72.0 (Mental Health Issues due to Tobacco or Tobacco Use); F11, F13, F14, F15, F16, F18, F19 or Z72.2 (Mental Health Issues due to Other Specified Drugs); F20 (Schizophrenia); F21–F29 (Schizotypal/Delusional Disorders); F31 (Bipolar Affective Disorder); F32 or F33 (Depression); F30, F34, F38, or F39 (Other Mood Disorders); F40 or F41 (Anxiety Disorders); F42 (Obsessive Compulsive Disorder); F43 (Stress Reaction/Adjustment Disorder); F50 (Eating Disorders); F60–F69 (Personality/Behaviour Disorders).

Denominator: Statistics NZ Projected Population

Notes on Interpretation

Note 1: The limitations of the National Minimum Dataset are discussed in **Appendix 3**. The reader is urged to review this Appendix before interpreting any analyses based on hospital admission data. In particular, due to inconsistent uploading of Emergency Department (ED) cases to the NMDS, all admissions with an ED health specialty code on discharge have been excluded (see **Appendix 3** for a more detailed discussion).

Note 2: Whereas the inpatient data derived from PRIMHD refers to the number of bed nights utilised by young people with various mental health diagnoses, the section on mental health inpatient admissions uses hospital admissions as the unit of analysis (i.e. a hospital admission is counted only once, irrespective of the number of bed nights utilised, with the same client potentially being counted several times, if they are admitted on a number of occasions with a mental health diagnosis).

Note 3: For hospital admission data, only the primary diagnosis has been used (vs. PRIMHD data, where a client with more than one diagnosis may appear several times in conjunction with each of the diagnoses received). In addition, in the National Minimum Dataset, all mental health diagnoses were coded in ICD-10-AM, whereas PRIMHD data was provided by the Ministry with diagnoses coded in DSM-IV. Thus the two analyses are not strictly comparable.

Hospital Admissions for Young People with ICD-10-AM Mental Health Diagnoses

New Zealand Distribution

In New Zealand during 2007–2011, the most common reasons for hospital admissions with a mental health diagnoses in young people were for schizophrenia, followed by depression and stress reaction/adjustment disorders. Composite categories such as schizotypal/delusional disorders and drug and alcohol-related conditions also made a significant contribution (**Table 101**).

Table 101. Hospital Admissions for Mental Health Conditions in Young People Aged 15–24 Years by Primary Diagnosis, New Zealand 2007–2011

ICD-10-AM Diagnosis	Number: Total 2007–2011	Number: Annual Average	Rate per 100,000	Percent of Admissions (%)
Young People 15–24 Years				
New Zealand				
Schizophrenia	2,640	528.0	84.80	18.5
Schizotypal/Delusional Disorders	2,302	460.4	73.95	16.1
Depression	2,174	434.8	69.83	15.2
Alcohol/Drug Mental Health Effects	1,553	310.6	49.89	10.9
Stress Reaction/Adjustment Disorder	1,248	249.6	40.09	8.7
Bipolar Affective Disorder	1,145	229.0	36.78	8.0
Other Mental Health Issues	999	199.8	32.09	7.0
Eating Disorders	755	151.0	24.25	5.3
Personality Disorders	703	140.6	22.58	4.9
Other Mood Disorders	405	81.0	13.01	2.8
Anxiety Disorders	292	58.4	9.38	2.0
Obsessive Compulsive Disorder	47	9.4	1.51	0.3
New Zealand Total	14,263	2,852.6	458.16	100.0

Source: Numerator: NMDS; Denominator: Statistics NZ Projected Population; Note: ED cases removed

South Island Distribution

In the South Island DHBs during 2007–2011, the most common reasons for hospital admissions with mental health diagnoses in young people were for schizophrenia, depression and the mental health effects of alcohol and drugs, although stress reaction/adjustment disorders, schizotypal/delusional disorders and personality disorders were prominent in some DHBs (**Table 102** and **Table 103**).

While admission rates for a number of diagnoses differed from the New Zealand rate, such figures are difficult to interpret, as many mental health services are offered on an outpatient/community basis, and thus access to inpatient mental health services may fail to accurately reflect the true burden of disease, or access to services in an ambulatory care setting (Note: The unit of analysis here is the number of hospital admissions, as compared to the number of inpatient bed nights in the sections based on PRIMHD data).



Table 102. Hospital Admissions for Mental Health Conditions in Young People Aged 15–24 Years by Primary Diagnosis, Nelson Marlborough, South Canterbury and the West Coast DHBs 2007–2011

ICD-10-AM Diagnosis	Number: Total 2007–2011	Number: Annual Average	Rate per 100,000	Percent of Admissions (%)
Young People 15–24 Years				
Nelson Marlborough				
Depression	68	13.6	85.63	15.5
Schizophrenia	61	12.2	76.81	13.9
Alcohol/Drug Mental Health Effects	55	11.0	69.26	12.5
Stress Reaction/Adjustment Disorder	45	9.0	56.66	10.3
Eating Disorders	42	8.4	52.89	9.6
Schizotypal/Delusional Disorders	41	8.2	51.63	9.3
Other Mood Disorders	36	7.2	45.33	8.2
Personality Disorders	22	4.4	27.70	5.0
Bipolar Affective Disorder	21	4.2	26.44	4.8
Anxiety Disorders	10	2.0	12.59	2.3
Obsessive Compulsive Disorder	5	1.0	6.30	1.1
Other Mental Health Issues	33	6.6	41.55	7.5
Nelson Marlborough Total	439	87.8	552.79	100.0
South Canterbury				
Depression	66	13.2	207.03	23.8
Alcohol/Drug Mental Health Effects	63	12.6	197.62	22.7
Schizophrenia	41	8.2	128.61	14.8
Schizotypal/Delusional Disorders	29	5.8	90.97	10.5
Personality Disorders	18	3.6	56.46	6.5
Bipolar Affective Disorder	18	3.6	56.46	6.5
Eating Disorders	11	2.2	34.50	4.0
Stress Reaction/Adjustment Disorder	10	2.0	31.37	3.6
Anxiety Disorders	5	1.0	15.68	1.8
Other Mood Disorders	4	0.8	12.55	1.4
Obsessive Compulsive Disorder	4	0.8	12.55	1.4
Other Mental Health Issues	8	1.6	25.09	2.9
South Canterbury Total	277	55.4	868.88	100.0
West Coast				
Alcohol/Drug Mental Health Effects	29	5.8	153.44	21.8
Depression	29	5.8	153.44	21.8
Stress Reaction/Adjustment Disorder	18	3.6	95.24	13.5
Schizotypal/Delusional Disorders	15	3.0	79.37	11.3
Schizophrenia	15	3.0	79.37	11.3
Bipolar Affective Disorder	8	1.6	42.33	6.0
Eating Disorders	8	1.6	42.33	6.0
Other Mood Disorders	4	0.8	21.16	3.0
Other Mental Health Issues	7	1.4	37.04	5.3
West Coast Total	133	26.6	703.70	100.0

Source: Numerator: NMDS; Denominator: Statistics NZ Projected Population; Note: ED cases removed

Table 103. Hospital Admissions for Mental Health Conditions in Young People Aged 15–24 Years by Primary Diagnosis, Canterbury and Otago and Southland 2007–2011

ICD-10-AM Diagnosis	Number: Total 2007–2011	Number: Annual Average	Rate per 100,000	Percent of Admissions (%)
Young People 15–24 Years				
Canterbury				
Depression	338	67.6	93.90	17.0
Schizotypal/Delusional Disorders	292	58.4	81.12	14.7
Alcohol/Drug Mental Health Effects	213	42.6	59.17	10.7
Schizophrenia	204	40.8	56.67	10.3
Bipolar Affective Disorder	190	38.0	52.78	9.6
Stress Reaction/Adjustment Disorder	186	37.2	51.67	9.4
Personality Disorders	153	30.6	42.50	7.7
Eating Disorders	108	21.6	30.00	5.4
Anxiety Disorders	67	13.4	18.61	3.4
Other Mood Disorders	50	10.0	13.89	2.5
Obsessive Compulsive Disorder	9	1.8	2.50	0.5
Other Mental Health Issues	177	35.4	49.17	8.9
Canterbury Total	1,987	397.4	551.99	100.0
Otago				
Depression	281	56.2	168.52	32.3
Schizotypal/Delusional Disorders	80	16.0	47.98	9.2
Personality Disorders	80	16.0	47.98	9.2
Eating Disorders	77	15.4	46.18	8.9
Stress Reaction/Adjustment Disorder	74	14.8	44.38	8.5
Alcohol/Drug Mental Health Effects	64	12.8	38.38	7.4
Bipolar Affective Disorder	54	10.8	32.38	6.2
Schizophrenia	47	9.4	28.19	5.4
Anxiety Disorders	33	6.6	19.79	3.8
Other Mood Disorders	24	4.8	14.39	2.8
Obsessive Compulsive Disorder	5	1.0	3.00	0.6
Other Mental Health Issues	50	10.0	29.99	5.8
Otago Total	869	173.8	521.14	100.0
Southland				
Schizophrenia	60	12.0	85.83	16.3
Depression	60	12.0	85.83	16.3
Alcohol/Drug Mental Health Effects	45	9.0	64.37	12.3
Schizotypal/Delusional Disorders	44	8.8	62.94	12.0
Stress Reaction/Adjustment Disorder	37	7.4	52.93	10.1
Eating Disorders	34	6.8	48.64	9.3
Bipolar Affective Disorder	26	5.2	37.19	7.1
Personality Disorders	16	3.2	22.89	4.4
Other Mood Disorders	9	1.8	12.88	2.5
Anxiety Disorders	6	1.2	8.58	1.6
Other Mental Health Issues	30	6.0	42.92	8.2
Southland Total	367	73.4	525.00	100.0

Source: Numerator: NMDS; Denominator: Statistics NZ Projected Population; Note: ED cases removed



Access to Mental Health Services (PRIMHD Data)

New Zealand Distribution

Numbers Accessing Services

In addition to the diagnoses reviewed in the earlier sections on access to mental health services during childhood and early adolescence, a number of mental health diagnoses became increasingly common during late adolescence. During 2009–2011, these included schizophrenia and other psychotic disorders, depression, bipolar disorder and other mood disorders and personality disorders (**Table 107**). When compared to the paediatric population, it is likely that very few young people with these diagnoses would have their care managed primarily in the paediatric outpatient setting (which is not captured by PRIMHD) and thus the extent to which PRIMHD undercounts access to services for young people with these diagnosis is likely to be less than in the previous sections.

Numbers Accessing Services by Diagnosis and Age

Schizophrenia, Other Psychotic Disorders and Personality Disorders: In New Zealand during 2009–2011, the number of young people accessing mental health services with psychotic disorders (other than schizophrenia) increased rapidly after 13 years of age, with numbers continuing to increase up until 20 years. While the number diagnosed with schizophrenia and personality disorders followed a similar pattern, the age distribution was shifted to the right by two to three years (i.e. the average age of diagnosis for these disorders was two to three years later than for other psychotic disorders (**Figure 132**)).

Depression, Bipolar Disorders and Other Mood Disorders: In New Zealand during 2009–2011, the number of young people accessing mental health services with a diagnosis of depression increased gradually between eight and thirteen years, with numbers then rising very rapidly thereafter, to reach a peak at 16–17 years of age. Rates then decreased again during the late teens. While a similar pattern was seen for other mood disorders, numbers were lower than for those with depression at every age from eight years onwards. In contrast, the number accessing mental health services with a diagnosis of bipolar disorder increased gradually from twelve years of age onwards (**Figure 133**).

Numbers Accessing Services by Diagnosis, Ethnicity and Gender

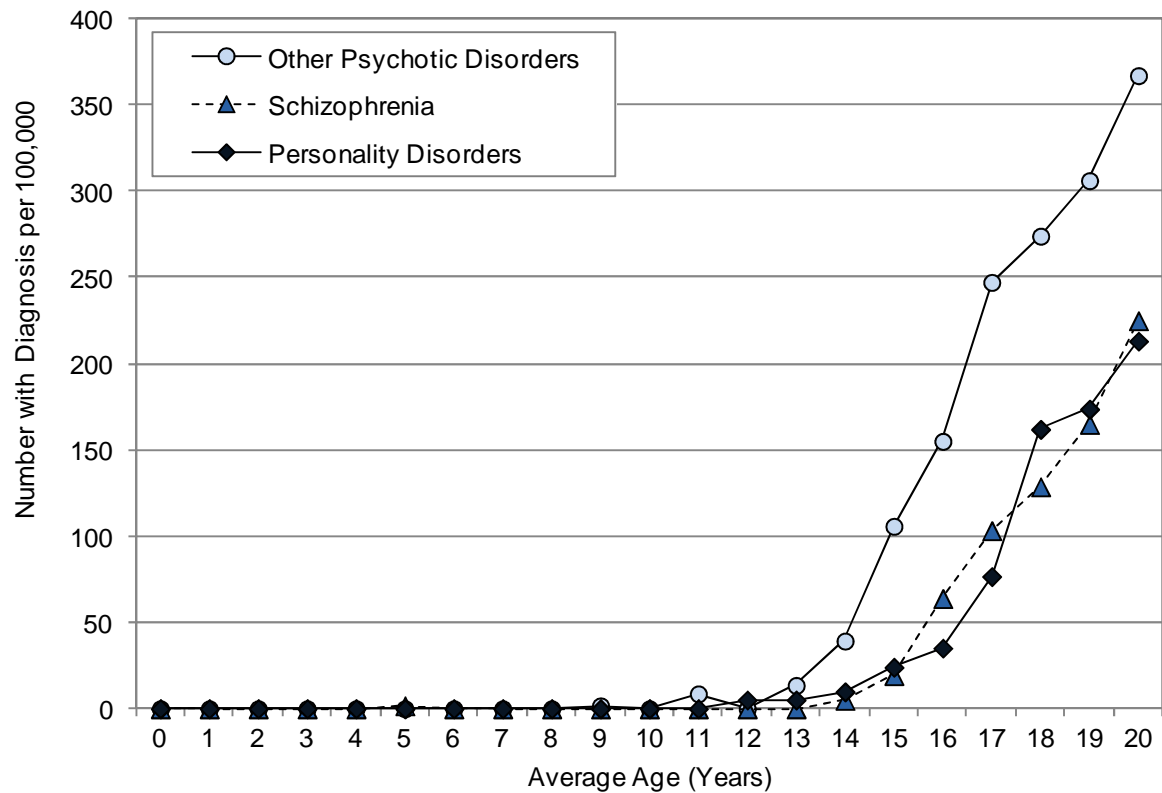
Schizophrenia and Other Psychotic Disorders: In New Zealand during 2009–2011, the number of young people accessing mental health services with schizophrenia or other psychotic disorders was *significantly* higher for males and for Māori > Pacific > European/Other young people. Similar patterns were seen for mental health service contacts and inpatient bed nights (**Table 104**).

Depression and Other Mood Disorders: In New Zealand during 2009–2011, the number of young people accessing mental health services with depression or other mood disorders was *significantly* higher for females and for European/Other > Māori > Pacific young people. While similar patterns were seen for mental health service contacts, inpatient bed nights for those with depression were *significantly* higher for Māori > European/Other > Pacific young people (**Table 105**, **Table 106**).

Bipolar Disorder: In New Zealand during 2009–2011, the number of young people accessing mental health services with bipolar disorder was *significantly* higher for females and for Māori > European/Other > Pacific young people. While similar ethnic differences were seen for mental health service contacts and inpatient bed nights, the number of inpatient bed nights for males with bipolar disorder was *significantly* higher than for females (**Table 105**).

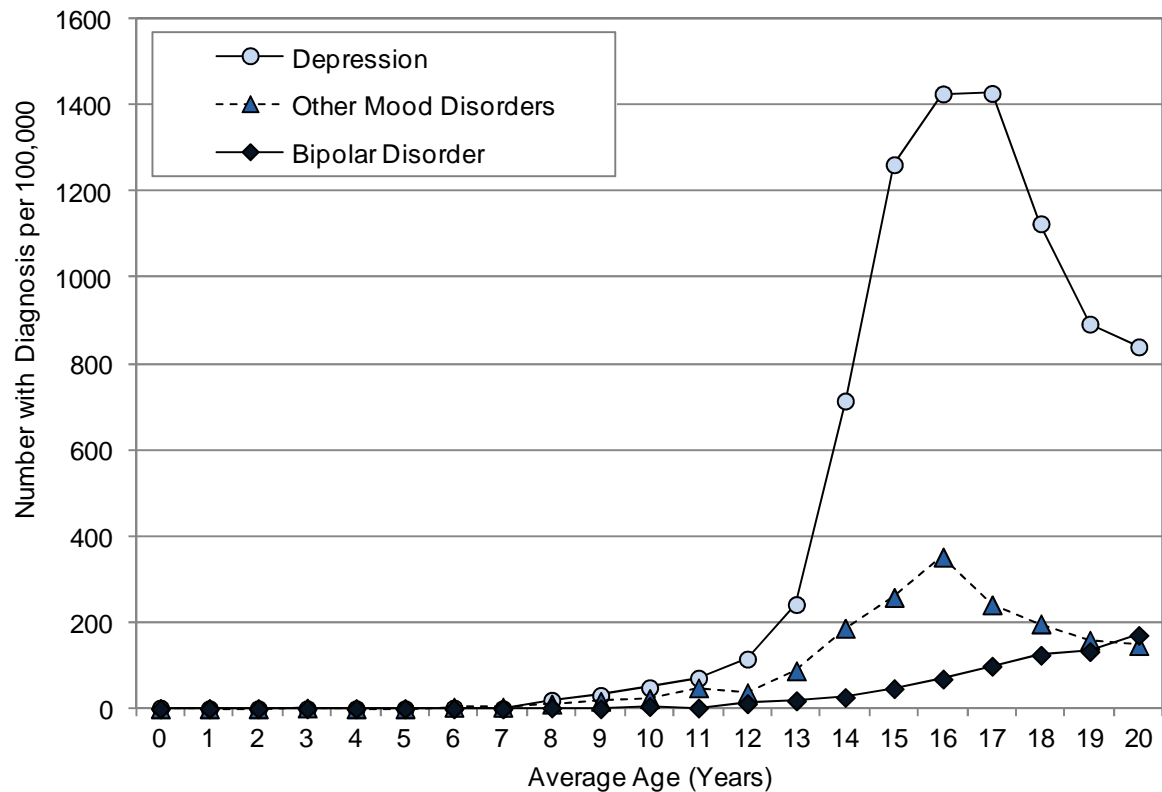


Figure 132. Children and Young People Accessing Mental Health Services with Schizophrenia, Other Psychotic Disorders or Personality Disorders by Age, New Zealand 2009–2011



Source: Numerator: PRIMHD (individuals attending Mental Health Services who had ever been assigned these diagnoses); Denominator: Statistics NZ Projected Population (2010 = mid-point of 2009–2011)

Figure 133. Children and Young People Accessing Mental Health Services with Depression, Bipolar Disorder or Other Mood Disorders by Age, New Zealand 2009–2011



Source: Numerator: PRIMHD (individuals attending Mental Health Services who had ever been assigned these diagnoses); Denominator: Statistics NZ Projected Population (2010 = mid-point of 2009–2011)



Personality Disorders: In New Zealand during 2009–2011, the number of young people accessing mental health services with a personality disorder was *significantly* higher for females and for European/Other and Māori > Pacific young people. While similar gender and ethnic differences were seen for the number of mental health service contacts, the number of inpatient bed nights was *significantly* higher for Māori > European/Other > Pacific young people (**Table 106**).

South Island Distribution

Young People Accessing Mental Health Services by Diagnosis

In the South Island DHBs during 2009–2011, depression and other mood disorders were the most frequent diagnoses assigned to young people accessing mental health services, followed by other psychotic disorders (**Table 107–Table 109**). While rates for a number of conditions differed *significantly* from the New Zealand rate, it must be remembered that these figures reflect young people's access to mental health services rather than the underlying health need in the community, with the figures presented thus being likely to underestimate the prevalence of these conditions in the region.



Table 104. Young People Aged 15–24 Years Accessing Mental Health Services with Schizophrenia or Other Psychotic Disorders, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Schizophrenia												
Ethnicity												
European/Other	564	125.2	1.00		32,965	7,317.8	1.00		21,314	4,731.5	1.00	
Māori	695	550.7	4.40	3.94–4.91	45,982	36,435.8	4.98	4.92–5.04	28,644	22,697.6	4.80	4.72–4.88
Pacific	151	289.6	2.31	1.93–2.77	10,934	20,971.1	2.87	2.81–2.92	5,489	10,528.1	2.23	2.16–2.29
Gender												
Female	342	111.3	1.00		22,014	7,163.0	1.00		11,729	3,816.4	1.00	
Male	1,068	332.2	2.99	2.64–3.37	67,868	21,110.1	2.95	2.91–2.99	43,719	13,598.8	3.56	3.49–3.63
Other Psychotic Disorders												
Ethnicity												
European/Other	1,106	245.5	1.00		45,814	10,170.1	1.00		20,908	4,641.3	1.00	
Māori	772	611.7	2.49	2.27–2.73	44,203	35,025.9	3.44	3.40–3.48	21,004	16,643.7	3.59	3.52–3.65
Pacific	166	318.4	1.30	1.10–1.53	10,619	20,366.3	2.00	1.96–2.04	3,719	7,133.4	1.54	1.49–1.59
Gender												
Female	671	218.3	1.00		33,731	10,975.7	1.00		14,771	4,806.3	1.00	
Male	1,373	427.1	1.96	1.78–2.14	66,905	20,810.6	1.90	1.87–1.92	30,861	9,599.1	2.00	1.96–2.04

Source: PRIMHD; Note: *Individuals*: Total = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 young people 15–24 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Average = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 young people 15–24 years; *Inpatient Bed Nights*: Annual Average = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 young people 15–24 years

Table 105. Young People Aged 15–24 Years Accessing Mental Health Services with Depression or Bipolar Disorder, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Depression												
Ethnicity												
European/Other	5,500	1,220.9	1.00		90,907	20,180.0	1.00		17,598	3,906.5	1.00	
Māori	1,239	981.8	0.80	0.76–0.85	24,583	19,479.7	0.97	0.95–0.98	7,335	5,812.5	1.49	1.45–1.53
Pacific	209	400.8	0.33	0.29–0.38	4,235	8,121.7	0.40	0.39–0.41	594	1,138.6	0.29	0.27–0.32
Gender												
Female	4,517	1,469.8	1.00		79,494	25,866.4	1.00		15,701	5,109.0	1.00	
Male	2,431	756.2	0.51	0.49–0.54	40,231	12,513.7	0.48	0.48–0.49	9,826	3,056.2	0.60	0.58–0.61
Bipolar Disorder												
Ethnicity												
European/Other	800	177.6	1.00		22,872	5,077.2	1.00		8,537	1,895.2	1.00	
Māori	275	217.9	1.23	1.07–1.41	10,672	8,456.2	1.67	1.63–1.70	6,349	5,030.6	2.65	2.57–2.74
Pacific	43	82.5	0.46	0.34–0.63	1,975	3,788.5	0.75	0.71–0.78	605	1,160.3	0.61	0.56–0.66
Gender												
Female	601	195.6	1.00		18,606	6,054.3	1.00		7,014	2,282.4	1.00	
Male	517	160.8	0.82	0.73–0.92	16,912	5,260.5	0.87	0.85–0.89	8,477	2,636.6	1.16	1.12–1.19

Source: PRIMHD; Note: *Individuals*: Total = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 young people 15–24 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Average = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 young people 15–24 years; *Inpatient Bed Nights*: Annual Average = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 young people 15–24 years

Table 106. Young People Aged 15–24 Years Accessing Mental Health Services with Other Mood Disorders or Personality Disorders, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Other Mood Disorders												
Ethnicity												
European/Other	1,062	235.8	1.00		20,817	4,621.0	1.00		5,681	1,261.2	1.00	
Māori	224	177.5	0.75	0.65–0.87	4,805	3,807.7	0.82	0.80–0.85	1,213	961.2	0.76	0.72–0.81
Pacific	25	48.0	0.20	0.14–0.30	326	625.9	0.14	0.12–0.15	56	107.4	0.09	0.07–0.11
Gender												
Female	825	268.5	1.00		18,137	5,901.6	1.00		5,354	1,742.1	1.00	
Male	486	151.2	0.56	0.50–0.63	7,811	2,429.7	0.41	0.40–0.42	1,596	496.5	0.29	0.27–0.30
Personality Disorders												
Ethnicity												
European/Other	905	200.9	1.00		34,240	7,600.8	1.00		10,892	2417.8	1.00	
Māori	226	179.1	0.89	0.77–1.03	9,563	7,577.4	1.00	0.98–1.02	4,784	3791.1	1.57	1.52–1.62
Pacific	24	46.0	0.23	0.15–0.34	1,128	2,164.1	0.28	0.27–0.30	150	287.1	0.12	0.10–0.14
Gender												
Female	760	247.3	1.00		32,224	10,485.4	1.00		10,859	3533.4	1.00	
Male	395	122.9	0.50	0.44–0.56	12,707	3,952.4	0.38	0.37–0.38	4,967	1544.9	0.44	0.42–0.45

Source: PRIMHD; Note: *Individuals*: Total = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 young people 15–24 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Average = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 young people 15–24 years; *Inpatient Bed Nights*: Annual Average = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 young people 15–24 years

Table 107. Young People Aged 15–24 Years Accessing Mental Health Services with Selected Diagnoses, Nelson Marlborough and South Canterbury vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Young People 15–24 Years						
Nelson Marlborough						
Schizophrenia	32	199.4	0.89	0.63–1.26	75.5	48.13
Other Psychotic Disorders	62	386.3	1.19	0.92–1.53	53.0	24.74
Personality Disorders	88	548.3	2.99	2.40–3.71	42.0	19.58
Depression	384	2,392.5	2.17	1.96–2.40	17.3	3.96
Bipolar Disorders	57	355.1	2.00	1.53–2.61	33.0	16.07
Other Mood Disorders	105	654.2	3.14	2.57–3.83	19.2	7.52
South Canterbury						
Schizophrenia	17	261.7	1.17	0.72–1.88	44.1	43.00
Other Psychotic Disorders	27	415.7	1.28	0.88–1.87	24.6	13.05
Personality Disorders	17	261.7	1.43	0.88–2.30	22.6	9.94
Depression	187	2,879.1	2.61	2.26–3.01	11.3	2.03
Bipolar Disorders	37	569.7	3.20	2.31–4.44	16.9	1.40
Other Mood Disorders	21	323.3	1.55	1.01–2.39	12.0	6.86
New Zealand						
Schizophrenia	1,410	224.2	1.00		63.7	39.32
Other Psychotic Disorders	2,044	325.1	1.00		49.2	22.32
Personality Disorders	1,155	183.7	1.00		38.9	13.70
Depression	6,948	1,104.9	1.00		17.2	3.67
Bipolar Disorders	1,118	177.8	1.00		31.8	13.86
Other Mood Disorders	1,311	208.5	1.00		19.8	5.30

Source: PRIMHD; Note: Total = total number of individuals with diagnosis accessing services during 2009–2011; Annual Contacts per Individual = number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; Annual Bed Nights per Individual = number of bed nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%.

Table 108. Young People Aged 15–24 Years Accessing Mental Health Services with Selected Diagnoses, Canterbury and the West Coast vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Young People 15–24 Years						
Canterbury						
Schizophrenia	105	144.5	0.64	0.53–0.79	50.2	53.26
Other Psychotic Disorders	253	348.2	1.07	0.94–1.22	29.2	27.03
Personality Disorders	214	294.5	1.60	1.39–1.85	24.2	16.84
Depression	1,340	1,844.2	1.67	1.58–1.77	10.8	4.87
Bipolar Disorders	171	235.3	1.32	1.13–1.55	21.3	17.73
Other Mood Disorders	264	363.3	1.74	1.53–1.99	13.6	7.93
West Coast						
Schizophrenia	9	233.5	1.04	0.54–2.00	100.3	30.26
Other Psychotic Disorders	14	363.2	1.12	0.66–1.89	75.7	25.48
Personality Disorders	4	103.8	0.56	0.21–1.51	8.9	1.42
Depression	85	2,204.9	2.00	1.62–2.47	20.9	4.73
Bipolar Disorders	12	311.3	1.75	0.99–3.09	40.5	12.86
Other Mood Disorders	13	337.2	1.62	0.94–2.79	36.2	0.00
New Zealand						
Schizophrenia	1,410	224.2	1.00		63.7	39.32
Other Psychotic Disorders	2,044	325.1	1.00		49.2	22.32
Personality Disorders	1,155	183.7	1.00		38.9	13.70
Depression	6,948	1,104.9	1.00		17.2	3.67
Bipolar Disorders	1,118	177.8	1.00		31.8	13.86
Other Mood Disorders	1,311	208.5	1.00		19.8	5.30

Source: PRIMHD; Note: Total = total number of individuals with diagnosis accessing services during 2009–2011; Annual Contacts per Individual = number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; Annual Bed Nights per Individual = number of bed nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%.

Table 109. Young People Aged 15–24 Years Accessing Mental Health Services with Selected Diagnoses, Otago and Southland vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Young People 15–24 Years						
Otago						
Schizophrenia	42	126.3	0.56	0.41–0.77	61.6	40.25
Other Psychotic Disorders	98	294.6	0.91	0.74–1.11	43.2	12.14
Personality Disorders	90	270.6	1.47	1.19–1.83	35.0	10.99
Depression	648	1,948.3	1.76	1.63–1.91	15.1	3.87
Bipolar Disorders	53	159.4	0.90	0.68–1.18	33.4	13.03
Other Mood Disorders	100	300.7	1.44	1.18–1.77	16.6	2.16
Southland						
Schizophrenia	32	230.0	1.03	0.72–1.46	44.9	37.31
Other Psychotic Disorders	42	301.8	0.93	0.68–1.26	31.9	19.48
Personality Disorders	34	244.3	1.33	0.95–1.87	26.4	5.15
Depression	218	1,566.7	1.42	1.24–1.62	14.0	2.18
Bipolar Disorders	26	186.8	1.05	0.71–1.55	26.8	6.19
Other Mood Disorders	118	848.0	4.07	3.37–4.91	13.2	1.30
New Zealand						
Schizophrenia	1,410	224.2	1.00		63.7	39.32
Other Psychotic Disorders	2,044	325.1	1.00		49.2	22.32
Personality Disorders	1,155	183.7	1.00		38.9	13.70
Depression	6,948	1,104.9	1.00		17.2	3.67
Bipolar Disorders	1,118	177.8	1.00		31.8	13.86
Other Mood Disorders	1,311	208.5	1.00		19.8	5.30

Source: PRIMHD; Note: Total = total number of individuals with diagnosis accessing services during 2009–2011; Annual Contacts per Individual = number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; Annual Bed Nights per Individual = number of bed nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%.

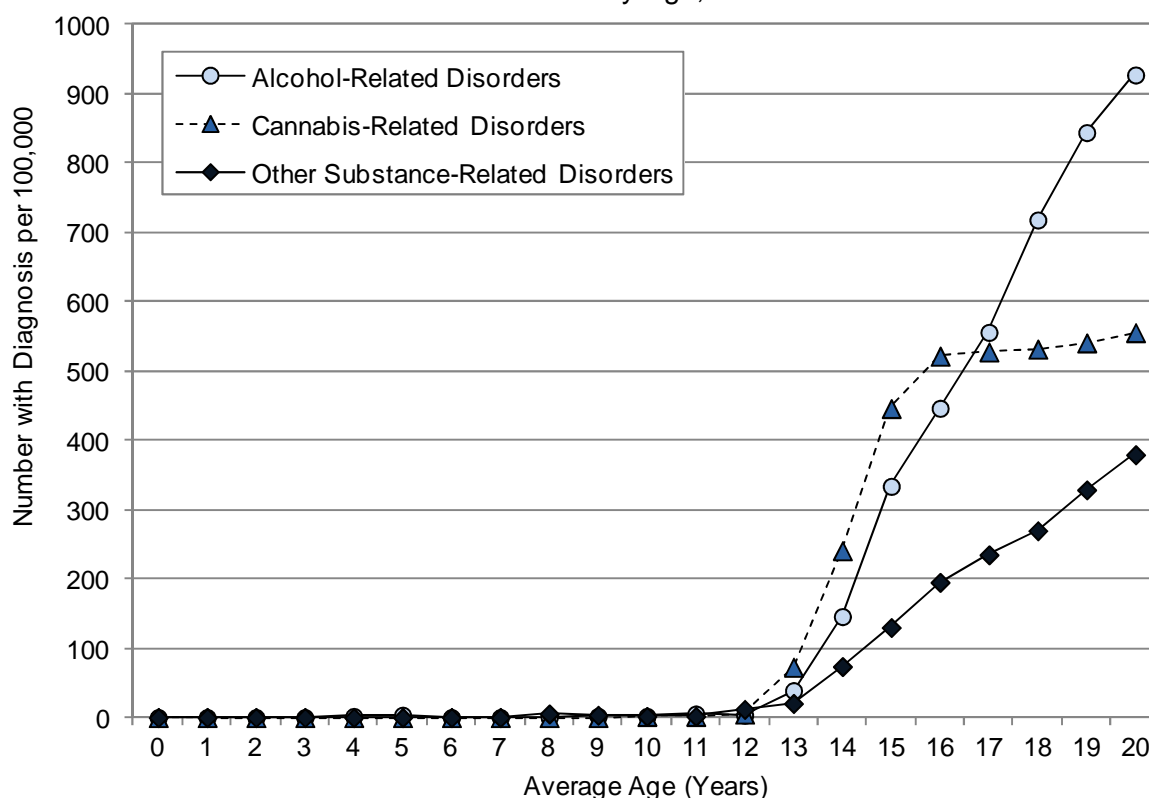
Mental Health Issues Associated with Substance Use

New Zealand Distribution

Access to Services by Age

In New Zealand during 2009–2011, the number of young people accessing mental health services for mental health issues associated with substance use, or where substance use was recorded as a co-diagnosis, increased rapidly after 12 years of age. Alcohol and cannabis were the substances most frequently documented in those accessing services, although other substance use was also relatively common (**Figure 134**).

Figure 134. Children and Young People Accessing Mental Health Services with Mental Health Issues Associated with Substance Use by Age, New Zealand 2009–2011



Source: Numerator: PRIMHD (individuals attending Mental Health Services who had ever been assigned these diagnoses); Denominator: Statistics NZ Projected Population (2010 = mid-point of 2009–2011)

Mental Health Issues with Substance Use as a Co-Diagnosis

In New Zealand during 2009–2011, substance use was a very frequent co-diagnosis for children and young people accessing mental health services. Personality disorders, followed by schizophrenia and other psychotic disorders were the most frequent diagnoses to have an alcohol-related disorder listed as a co-diagnosis, while schizophrenia, other psychotic disorders, and then personality disorders, were the most frequent diagnoses to have cannabis use, or other substance use listed as a co-diagnosis. Amongst those with schizophrenia 19.8% had an alcohol-related disorder listed as a co-diagnosis, while 26.6% had a cannabis-related disorder, and 21.3% had other substance use listed as a co-diagnosis (**Table 110**).

Note: As a result of the considerable overlap between mental health diagnoses and substance use, it is likely that a proportion of the mental health contacts and inpatient bed nights presented in the tables which follow actually occurred in the context of care for other diagnoses, rather than primarily for the management of a substance-related disorder.



Table 110. Proportion of Young People Aged 15–24 Years with a Mental Health Diagnosis who had a Substance-Related Disorder Listed as a Co-Diagnosis, New Zealand 2009–2011

DSM-IV Diagnosis	Number with Diagnosis	Number with Substance Disorder Listed as Co-Diagnosis	% With Substance Disorder Listed as Co-Diagnosis
Alcohol-Related Disorders			
Personality Disorders	1,155	272	23.5
Schizophrenia	1,410	279	19.8
Other Psychotic Disorders	2,044	339	16.6
Bipolar Disorders	1,118	150	13.4
Other Mood Disorders	1,311	185	14.1
Depression	6,948	691	9.9
Anxiety Disorders	4,517	469	10.4
Adjustment Disorders	2,433	237	9.7
Eating Disorders	1,037	63	6.1
Cannabis-Related Disorders			
Schizophrenia	1,410	375	26.6
Other Psychotic Disorders	2,044	482	23.6
Personality Disorders	1,155	242	21.0
Bipolar Disorders	1,118	179	16.0
Other Mood Disorders	1,311	157	12.0
Depression	6,948	626	9.0
Anxiety Disorders	4,517	433	9.6
Adjustment Disorders	2,433	198	8.1
Eating Disorders	1,037	34	3.3
Other Substance-Related Disorders			
Schizophrenia	1,410	300	21.3
Other Psychotic Disorders	2,044	420	20.5
Personality Disorders	1,155	201	17.4
Bipolar Disorders	1,118	153	13.7
Other Mood Disorders	1,311	107	8.2
Anxiety Disorders	4,517	323	7.2
Depression	6,948	355	5.1
Adjustment Disorders	2,433	122	5.0
Eating Disorders	1,037	32	3.1

Source: PRIMHD; Note: Number with Diagnosis = total number of individuals with diagnosis accessing services during 2009–2011; As an individual can have more than one mental health diagnosis, columns do NOT sum to 100%

Distribution by Ethnicity and Gender

Alcohol-Related Disorders: In New Zealand during 2009–2011, the number of young people accessing mental health services with alcohol-related disorders was *significantly* higher for males and for Māori young people than for European/Other or Pacific young people. While similar gender differences were seen for mental health contacts and inpatient bed nights, both contacts and inpatient bed nights were *significantly* higher for Māori > Pacific > European/Other young people (**Table 111**).

Table 111. Young People Aged 15–24 Years Accessing Mental Health Services with Alcohol or Cannabis-Related Disorders, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Alcohol-Related Disorders												
Ethnicity												
European/Other	2,800	621.6	1.00		37,880	8,408.7	1.00		11,597	2,574.4	1.00	
Māori	1,837	1,455.6	2.34	2.21–2.48	31,438	24,911.3	2.96	2.92–3.00	12,048	9,547.0	3.71	3.62–3.80
Pacific	335	642.5	1.03	0.92–1.16	4,998	9,585.1	1.14	1.11–1.17	1,725	3,309.0	1.29	1.22–1.35
Gender												
Female	1,536	499.8	1.00		29,325	9,542.0	1.00		8,400	2,733.3	1.00	
Male	3,436	1,068.8	2.14	2.01–2.27	44,990	13,994.1	1.47	1.45–1.49	16,971	5,278.8	1.93	1.88–1.98
Cannabis-Related Disorders												
Ethnicity												
European/Other	2,004	444.9	1.00		34,651	7,691.9	1.00		12,471	2,768.4	1.00	
Māori	1,313	1,040.4	2.34	2.18–2.51	34,513	27,347.9	3.56	3.51–3.60	17,716	14,037.8	5.07	4.96–5.18
Pacific	145	278.1	0.63	0.53–0.74	4,160	7,977.9	1.04	1.01–1.07	2,035	3,902.3	1.41	1.35–1.48
Gender												
Female	960	312.4	1.00		22,366	7,277.6	1.00		8,027	2,611.8	1.00	
Male	2,502	778.2	2.49	2.31–2.68	50,957	15,850.1	2.18	2.15–2.21	24,195	7,525.7	2.88	2.81–2.95

Source: PRIMHD; Note: *Individuals*: Total = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 young people 15–24 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Average = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 young people 15–24 years; *Inpatient Bed Nights*: Annual Average = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 young people 15–24 years; **Substance use may be a comorbidity rather than primary reason for accessing services**

Table 112. Young People Aged 15–24 Years Accessing Mental Health Services with Other Substance-Related Disorders, New Zealand 2009–2011

Variable	Individuals				Contacts				Inpatient Bed Nights			
	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Other Substance-Related Disorders												
Ethnicity												
European/Other	1,412	313.4	1.00		33,492	7,434.8	1.00		10,514	2,334.0	1.00	
Māori	758	600.6	1.92	1.75–2.09	27,271	21,609.6	2.91	2.86–2.95	13,903	11,016.6	4.72	4.61–4.84
Pacific	90	172.6	0.55	0.45–0.68	3,162	6,063.8	0.82	0.79–0.84	1,377	2,641.6	1.13	1.07–1.20
Gender												
Female	874	284.4	1.00		25,120	8,173.7	1.00		8,234	2,679.4	1.00	
Male	1,386	431.1	1.52	1.39–1.65	38,806	12,070.4	1.48	1.45–1.50	17,560	5,462.0	2.04	1.99–2.09

Source: PRIMHD; Note: *Individuals*: Total = total number of individuals with diagnosis accessing services during 2009–2011; Rate = number with diagnosis per 100,000 young people 15–24 years (at midpoint of period (i.e. 2010)); *Contacts*: Annual Average = number of contacts each year (averaged over 2009–2011) with clients with this diagnosis; Rate = average number of contacts with clients with this diagnosis each year, per 100,000 young people 15–24 years; *Inpatient Bed Nights*: Annual Average = number of bed nights each year (averaged over 2009–2011) for clients with this diagnosis; Rate = average number of bed nights for clients with this diagnosis each year, per 100,000 young people 15–24 years; **Substance use may be a comorbidity rather than primary reason for accessing services**

Distribution by Ethnicity and Gender

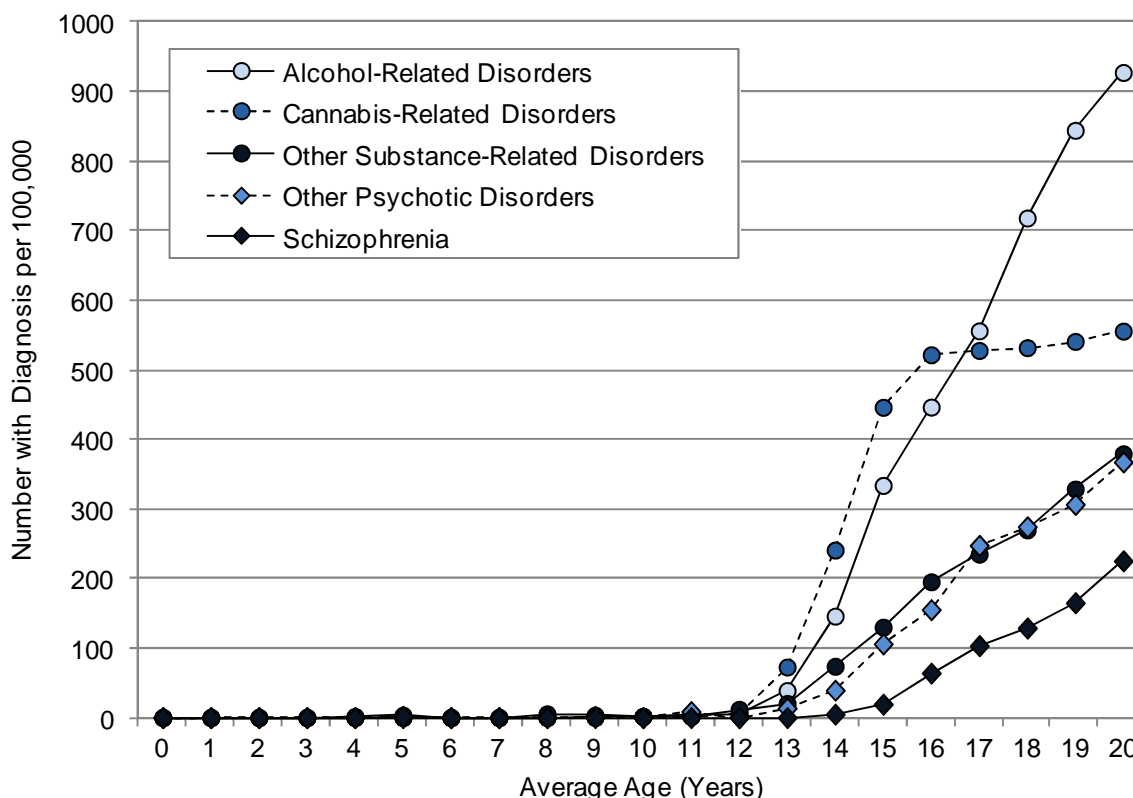
Cannabis-Related Disorders: In New Zealand during 2009–2011, the number of young people accessing mental health services with cannabis-related disorders was *significantly* higher for males and for Māori > European/Other > Pacific young people. While similar gender differences were seen for mental health contacts and inpatient bed nights, both contacts and inpatient bed nights were *significantly* higher for Māori > Pacific > European/Other young people (**Table 111**).

Other Substance-Related Disorders: In New Zealand during 2009–2011, the number of young people accessing mental health services with other substance-related disorders was *significantly* higher for males and for Māori > European/Other > Pacific young people. While similar gender and ethnic differences were seen for mental health contacts, inpatient bed nights were *significantly* higher for Māori > Pacific > European/Other young people (**Table 112**).

Age Distribution of Those Accessing Services with Substance-Related Disorders and Schizophrenia and Other Psychotic Disorders

While there was considerable overlap in the number of young people diagnosed with substance-related disorders and schizophrenia and other psychotic disorders, the age-related increases in the numbers diagnosed with alcohol and cannabis-related disorders occurred around two to three years earlier than the age-related increase in the number of young people diagnosed with schizophrenia (**Figure 135**).

Figure 135. Comparison of Age Distribution of Children and Young People Accessing Mental Health Services with Substance-Related Disorders and Schizophrenia and Other Psychotic Disorders, New Zealand 2009–2011



Source: Numerator: PRIMHD (individuals attending Mental Health Services who had ever been assigned these diagnoses); Denominator: Statistics NZ Projected Population (2010 = mid-point of 2009–2011)



South Island Distribution

In the South Island DHBs during 2009–2011, alcohol-related disorders, followed by cannabis-related disorders, were the most frequent diagnosis for young people accessing mental health services with substance-related disorders. When compared to the New Zealand rate, a *significantly* higher number of young people with alcohol-related and cannabis-related disorders accessed mental health services in each of the South Island DHBs (**Table 113, Table 114**).



Table 113. Young People Aged 15–24 Years Accessing Mental Health Services with Substance-Related Disorders, Nelson Marlborough, South Canterbury and Canterbury vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Young People 15–24 Years						
Nelson Marlborough						
Alcohol-Related Disorders	312	1,943.9	2.46	2.20–2.75	11.5	5.23
Cannabis-Related Disorders	247	1,538.9	2.80	2.46–3.18	15.6	6.96
Other Substance-Related Disorders	95	591.9	1.65	1.34–2.02	26.2	8.33
South Canterbury						
Alcohol-Related Disorders	89	1,370.3	1.73	1.41–2.13	11.4	5.37
Cannabis-Related Disorders	86	1,324.1	2.41	1.94–2.97	11.4	3.64
Other Substance-Related Disorders	22	338.7	0.94	0.62–1.43	17.3	2.50
Canterbury						
Alcohol-Related Disorders	741	1,019.8	1.29	1.19–1.39	14.4	9.00
Cannabis-Related Disorders	720	990.9	1.80	1.66–1.95	16.5	11.72
Other Substance-Related Disorders	293	403.2	1.12	0.99–1.27	17.5	11.37
New Zealand						
Alcohol-Related Disorders	4,972	790.7	1.00		14.9	5.10
Cannabis-Related Disorders	3,462	550.6	1.00		21.2	9.31
Other Substance-Related Disorders	2,260	359.4	1.00		28.3	11.41

Source: PRIMHD; Note: Total = total number of individuals with diagnosis accessing services during 2009–2011; Annual Contacts per Individual = number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; Annual Bed Nights per Individual = number of Bed Nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis. As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%; **Substance use may be a comorbidity rather than primary reason for accessing services**

Table 114. Young People Aged 15–24 Years Accessing Mental Health Services with Substance-Related Disorders, the West Coast, Otago and Southland vs. New Zealand 2009–2011

DSM-IV Diagnosis	Number: Total 2009–2011	Rate per 100,000	Rate Ratio	95% CI	Annual Contacts per Individual	Annual Bed Nights per Individual
Young People 15–24 Years						
West Coast						
Alcohol-Related Disorders	135	3,502.0	4.43	3.74–5.24	13.8	1.84
Cannabis-Related Disorders	78	2,023.4	3.68	2.94–4.59	19.2	3.19
Other Substance-Related Disorders	26	674.4	1.88	1.28–2.76	13.1	3.68
Otago						
Alcohol-Related Disorders	474	1,425.1	1.80	1.64–1.98	9.4	1.84
Cannabis-Related Disorders	256	769.7	1.40	1.23–1.59	12.6	1.59
Other Substance-Related Disorders	146	439.0	1.22	1.03–1.44	23.8	8.55
Southland						
Alcohol-Related Disorders	238	1,710.4	2.16	1.90–2.46	9.9	2.40
Cannabis-Related Disorders	127	912.7	1.66	1.39–1.98	14.8	5.58
Other Substance-Related Disorders	130	934.2	2.60	2.18–3.10	15.7	6.79
New Zealand						
Alcohol-Related Disorders	4,972	790.7	1.00		14.9	5.10
Cannabis-Related Disorders	3,462	550.6	1.00		21.2	9.31
Other Substance-Related Disorders	2,260	359.4	1.00		28.3	11.41

Source: PRIMHD; Note: Total = total number of individuals with diagnosis accessing services during 2009–2011; Annual Contacts per Individual= number of contacts each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis; Annual Bed Nights per Individual= number of Bed Nights each year (averaged over 2009–2011) for individuals with diagnosis ÷ number of individuals with diagnosis. As an individual may have more than one mental health diagnosis, columns do NOT sum to 100%; **Substance use may be a comorbidity rather than primary reason for accessing services**

Local Policy Documents and Evidence-Based Reviews Relevant to Substance Use in Young People

Local policy documents and evidence-based reviews relevant to the management of mental health issues in children and young people are reviewed in the **Access to Mental Health Services: Introduction** section commencing on **Page 347**. In addition, **Table 115** (below) provides an overview of New Zealand policy documents and evidence-based reviews which focus on preventing drug use in young people, while **Table 47** on **Page 233** provides an overview of publications relevant to the prevention of alcohol-related harm in young people (which also frequently address alcohol and other drug use in the same publication). Finally, the In-Depth Topic **Mental Health Issues in Children** commencing on **Page 365** provides a more detailed review of the literature as it relates to children aged 0–14 years.

Table 115. Local Policy Documents and Evidence-Based Reviews Relevant to the Prevention and Management of Drug Use in Young People

Ministry of Health Policy Documents
<p>Ministry of Health. 2010. Mental Health and Addiction Action Plan 2010. Wellington: Ministry of Health. http://www.health.govt.nz/publication/mental-health-and-addiction-action-plan-2010</p> <p>This document builds on policy documents Te Tāhuhu (2005) and Te Kōkiri, (2006), the national strategy and action plan for mental health and addictions to 2015. It identifies the key priorities for Ministry-led activities. Tackling alcohol and other drug-related harm is one of four prioritised actions and includes increasing the number of community youth alcohol and other drug (AOD) treatment places available to give young offenders access to court directed community AOD treatment programmes.</p>
<p>Ministry of Health. 2007. Te Raukura. Mental health and alcohol and other drugs: Improving outcomes for children and youth. Wellington: Ministry of Health. http://www.health.govt.nz/publication/te-raukura-mental-health-and-alcohol-and-other-drugs-improving-outcomes-children-and-youth</p> <p>This report identifies continued improvement in child and adolescent mental health (CAMHS) and alcohol and other drug (AOD) specialist services as a priority for the mental health and addiction sector. The key issues are identified, including inequalities, access to services, child and youth AOD services, intersectoral collaboration and primary mental health care. Priorities for action are defined, including improvement in understanding and recognition of AOD issues in CAMHS; improvement in the gaps in availability of AOD service provision within CAMHS; and identification by DHBs of gaps in AOD service provision for children and youth, and development and implementation of plans to address improvement in understanding and recognition of AOD issues in CAMHS.</p>
<p>Ministry of Health. 2005. Te Tāhuhu – Improving Mental Health 2005–2015: The Second New Zealand Mental Health and Addiction Plan Wellington: Ministry of Health.</p> <p>Ministry of Health. 2006. Te Kōkiri: The Mental Health and Addiction Action Plan 2006–2015. Wellington: Ministry of Health. http://www.health.govt.nz/our-work/mental-health-and-addictions/mental-health/mental-health-strategic-direction</p> <p>Te Tāhuhu sets out Government policy and priorities for mental health and addiction for 2005 to 2015. Te Kōkiri sets out the action plan and includes a mixture of high level initiatives and specific operational actions. Addiction was identified as one of ten leading challenges, and a number of actions to improve access to, and quality of, addiction services and broaden the range of services available are included. Young people are identified as at increasing risk of substance abuse and specific attention to services for this group is recommended.</p>
<p>Todd F. 2010. Te Ariari o te Oranga: the Assessment and Management of People with Co-existing Mental Health and Substance Use Problems. Wellington: Ministry of Health. http://www.health.govt.nz/publication/te-ariari-o-te-oranga-assessment-and-management-people-co-existing-mental-health-and-drug-problems</p> <p>This clinical framework aims to assist health professionals working with people with co-existing substance use and mental health problems (CEP) and is a companion document to 'Service Delivery for People with Co-existing Mental Health and Addiction Problems - Integrated Solutions 2010'.</p>
<p>Ministry of Health. 2010. Service Delivery for People with Co-existing Mental Health and Addiction Problems: Integrated Solutions. Wellington: Ministry of Health. http://www.health.govt.nz/publication/service-delivery-people-co-existing-mental-health-and-addiction-problems-integrated-solutions-2010</p> <p>This service delivery guidance document provides advice to assist mental health and addiction services to enable the provision of more integrated care for people with co-existing mental health and addiction problems. It is designed as a companion to the clinical guidance document Te Ariari o te Oranga: The Assessment and Management of People with Co-existing Mental Health and Addiction Problems.</p>

Cochrane Systematic Reviews

Thomas RE, et al. 2011. **Mentoring adolescents to prevent drug and alcohol use.** Cochrane Database of Systematic Reviews doi:10.1002/14651858.CD007381.pub2

<http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD007381/frame.html>

This review assessed the effectiveness of structured mentoring programmes to prevent alcohol and drug use. The review included 4 RCTs with 1,994 participants (aged 12 years in two trials and 9-16 years in two trials), conducted among deprived populations in the US. Two RCTs found mentoring reduced the rate of initiation of alcohol (pooled RR for mentoring compared to no intervention 0.71, 95% CI 0.57 to 0.90). A third trial found no significant difference and the fourth trial did not assess alcohol use. One RCT found significantly less "illegal" drug usage (RR 0.54, 95%CI 0.35 to 0.83). No adverse effects were detected. There was limited scope for the interventions to be effective due to low rates of commencing alcohol and drug use during the intervention period, probably reflecting the relative youth of the samples.

Gates S, et al. 2009. **Interventions for prevention of drug use by young people delivered in non-school settings.**

Cochrane Database of Systematic Reviews doi:10.1002/14651858.CD005030.pub2

<http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD005030/frame.html>

This review assessed the effectiveness of interventions delivered in non-school settings intended to prevent or reduce drug use by young people under 25. Seventeen studies were included (8 RCTs with 1,230 participants and 9 cluster RCTs, with 253 clusters), evaluating four types of intervention: motivational interviewing or brief intervention, education or skills training, family interventions and multicomponent community interventions. The small number of studies, and methodological problems including high loss-to-follow-up, limited the ability to draw conclusions. One study of motivational interviewing suggested that it was beneficial on cannabis use, identifying a large and statistically significant decrease in the frequency of self-reported cannabis use in the intervention group. Three family interventions assessed in single studies, suggested that they may be beneficial in preventing cannabis use. The studies of multi-component community interventions did not find any strong effects, and the two studies of education and skills training did not find any differences between the intervention and control groups. The authors conclude that while motivational interviewing and some family interventions may have some benefit, cost-effectiveness has not yet been addressed in any studies, and further research is needed to determine whether any of these interventions can be recommended.

Faggiano F, et al. 2005. **School-based prevention for illicit drugs' use.** Cochrane Database of Systematic Reviews doi:10.1002/14651858.CD003020.pub2

<http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD003020/frame.html>

This review evaluated the effectiveness of school-based interventions to improve knowledge, develop skills, promote change and prevent or reduce drug use. The review included 29 RCTs and three controlled prospective studies (46,539 participants in total), the majority of which were conducted in the USA. Three programmes focussed on improvement in drug knowledge found non-significant improvements in drug knowledge post-test (standardised mean difference (SMD) 0.91; 95% CI 0.42 to 1.39). Social skills based interventions were assessed in 25 RCTs and associated with improvement in drug knowledge (weighted mean difference (WMD) 2.60; 95% CI 1.17 to 4.03), decision making skills (SMD 0.78; 95% CI 0.46 to 1.09), self-esteem (SMD 0.22; 95% CI 0.03 to 0.40), peer pressure resistance (RR 2.05; 95% CI: 1.24 to 3.42), drug use (RR 0.81; 95% CI 0.64 to 1.02), marijuana use (RR 0.82; 95% CI 0.73 to 0.92) and heroin use (RR 0.45; 95% CI 0.24 to 0.85). The authors concluded that skills based programmes appear to be effective in deterring early-stage drug use. However, the authors comment that the results may not be generalisable to non-US populations with differing social contexts and drug policies.

Other Systematic Reviews

Tanner-Smith EE, et al. 2012. **The comparative effectiveness of outpatient treatment for adolescent substance abuse: A meta-analysis.** Journal of Substance Abuse Treatment, in press, available online 2 July 2012.

This review which assessed the effectiveness of different outpatient treatments for adolescents with substance use disorders identified 45 experimental or quasi-experimental studies for meta-analysis. Treatment types were divided into four groups: no treatments and placebo control conditions; psychoeducational therapy (PET), group/mixed counselling and practice as usual (PAU); cognitive behavioural therapy, motivational interviewing and other individual therapies and pharmacological treatment; and family therapy. Family therapy programmes were found to be consistently more effective than their comparison conditions, and no treatment programmes were generally less effective. PET/group counselling/PAU compared unfavourably with most comparator treatments. A second analysis, measuring changes in substance use, found that almost all types of treatment showed reductions in substance use. The greatest improvements were for family therapy and mixed and group counselling. The authors conclude that while family therapy is the treatment with the strongest evidence of comparative effectiveness, most types of treatment appear to be beneficial in helping adolescents reduce their substance use.

Jensen CD, et al. 2011. **Effectiveness of motivational interviewing interventions for adolescent substance use behaviour change: A meta-analytic review.** Journal of Consulting and Clinical Psychology, 79(4), 433-40.

This review evaluated the effectiveness of motivational interviewing (MI) in promoting behavioural change in adolescent substance use. Twenty-one controlled trials (randomisation not specified), assessing mainly single treatments and a variety of substance use outcomes, were identified (5,471 participants). Meta-analysis found a small but statistically significant effect size (mean difference 0.173, 95% CI 0.094 to 0.252), maintained at follow-up (maximum follow-up 24 months). While further research is needed, the authors suggest that these findings support the use of MI for adolescents, at least as part of a treatment programme.

Fletcher A, et al. 2008. **School Effects on Young People's Drug Use: A Systematic Review of Intervention and Observational Studies.** Journal of Adolescent Health, 42(3), 209-20.

The aim of this review was to determine if school institutional factors can influence young peoples' drug use. Four studies were included in the review. They generally found associations between disengagement from school, poor teacher-student relationships and subsequent drug use. The authors concluded that interventions that encourage a positive school ethos and that reduce student disaffection may be an effective addition to drug prevention programmes, however, more evidence is required to support this.

National Institute for Health and Clinical Excellence. 2007. **Community-based interventions to reduce substance misuse among vulnerable and disadvantaged children and young people (NICE public health intervention guidance 4).** London: National Institute for Health and Clinical Excellence. <http://guidance.nice.org.uk/PH4>.

This evidence-based guidance on community-based interventions to reduce substance abuse among vulnerable children and young people aged under 25 years provides recommendations for all those with direct and indirect responsibility for reducing substance misuse. Recommendations include: the development of local strategic partnerships; use of existing screening and assessment tools to identify those misusing, or at risk of misusing, substances and the provision of support and referral; offering a family-based programme of structured support over 2 or more years, for children aged 11 to 16 years assessed to be at high risk of substance misuse; offering children aged 10 to 12 who are persistently aggressive or disruptive and assessed to be at high risk of substance misuse group-based behavioural therapy over 1 to 2 years, before and during the transition to secondary school; and offering motivational interviews to young people under 25 years who are problematic substance misusers. A number of limitations to the evidence base were identified, including short follow-up periods (up to two years) when most of the desired outcomes persist over many years, little examination of possible iatrogenic effects of interventions, and little evidence on whether interventions aimed at parents or carers who misuse substances help to reduce, prevent or delay the onset of substance misuse among their children.

Owen DM & Werch CE. 2002. **Iatrogenic effects of alcohol and drug prevention programs.** Journal of Studies on Alcohol, 63(5), 581-90.

In addition to positive or neutral outcomes, prevention programmes may have unintended negative outcomes. This systematic review sought to assess published studies evaluating youth substance use prevention programmes, to determine whether iatrogenic effects have occurred, and if so, what types of harmful effects resulted and under what circumstances. Negative programme effects were found in 17 evaluation studies. The most common type of negative outcome was behavioural effects, mainly increases in consumption, particularly alcohol use. Drug prevention programmes resulted in greater increases in alcohol use, cigarette use, marijuana use and multiple drug use than did alcohol prevention programmes. Negative programme outcomes occurred most commonly in the context of mixed positive and negative effects, usually with a subgroup of youth or particular component of the intervention, followed by negative outcomes in the context of non-significant programme effects. The importance of measuring, monitoring and reporting negative outcomes is highlighted, to improve understanding of which programme elements interact with which contextual factors to cause harm to which groups of youth.

Other Relevant Evidence

Allen & Clarke Policy and Regulatory Specialists Ltd. 2003. **Effective Drug Education for Young People: An overview of the literature review and analysis.** Wellington: Ministry of Youth Development. <http://www.myd.govt.nz/about-mydp/publications/effective-drug.html>

Ministry of Youth Development. 2004. **Strengthening Drug Education in School Communities: Best practice handbook for design, delivery and evaluation, years 7-13.** Wellington: Ministry of Youth Development. <http://www.myd.govt.nz/about-mydp/publications/strengthening-drug-education-in-school-communities.html>

This Ministry of Youth Development report sought to review the literature on drug education and make recommendations and led to the publication of the Strengthening Drug Education in School Communities handbook. The full literature review is no longer available but the overview document reports on the findings. The review found that drug use is shaped by social, cultural and economic contexts which are important in developing effective education about drugs; effective drug education requires coordinated messages and active government and community support; young people with poor family, community, school and peer relationships are at increased risk of drug-related harm; the development of young people's strengths is likely to reduce the risk of drug-related harm; drug education is most effective when it reflects the needs and attitudes of young people, and when it is delivered in an interactive manner; and information about drug use is essential for developing effective drug education programmes. A number of best practice recommendations are also made.

Note: The publications listed were identified using the search methodology outlined in **Appendix 1**

SUICIDE AND INTENTIONAL SELF-HARM

Introduction

In New Zealand during 2009, suicide was the second most common cause of death after motor vehicle accidents for young people aged 15 to 24 years [489]. Although rates have declined since the late 1990s, youth suicide rates remain high compared to other OECD countries and prevention of youth suicide remains an important focus [490]. For example, in 2009, New Zealand's suicide rate for those aged 15 to 19 years was 16.7 deaths per 100,000 population, as compared to the OECD average of 6.4 per 100,000 population [489,491]. Among those aged 15 to 19 years there were 42 male suicide deaths (25.4 per 100,000 population) and 12 female suicide deaths (7.6 per 100,000 population) [489].

Suicidal behaviour in young people most often results from an accumulation of risk factors which may include childhood and family adversity, individual vulnerabilities, mental disorders including depression and substance abuse, non-heterosexual sexual orientation, exposure to suicidal behaviour by others, and exposure to stressors and adverse circumstances [492,493]. Te Rau Hinengaro, The New Zealand Mental Health Survey found that the risk of suicidal ideation, a suicide plan, or a suicide attempt were also significantly higher in young people, compared to those aged over 25 years [316]. The risk of suicidal behaviours was also increased in those with low household incomes and those living in deprived areas [316]. Māori ethnicity, socioeconomic disadvantage and child welfare care are also associated with higher suicide rates among young people in New Zealand [312,494]. A caring parent or other family member and a fair, safe school environment appear to be protective against suicide attempts [493].

Research also suggests that the risk factor profiles for suicide mortality and hospital admissions for intentional self-harm differ [489]. In 2009, hospitalisation rates were highest for young women aged 15 to 19 years (181.1 per 100,000 female population, vs. 78 per 100,000 male population [489]). The Youth '07 survey of 9,107 secondary school students in 2007 also found that 26.0% (95% CI 24.4–27.6) of female students and 15.5% (95% CI 14.1–16.8) of male students reported deliberately harming themselves in the preceding 12 months [314]. Suicidal thoughts, plans and attempts were all more common among female compared to male students. Reports of suicidal behaviours were more common among Māori and Pacific youth compared to NZ Europeans, and those living in more socioeconomically deprived areas compared to those in less deprived areas.

The following section uses information from the National Minimum Dataset and the National Mortality Collection to review hospital admissions for intentional self-harm and mortality from suicide in young people aged 15–24 years.

Data Source and Methods

Definition

1. Hospital admissions for injuries arising from intentional self-harm in young people aged 15–24 years
2. Mortality from suicide in young people aged 15–24 years

Data Source

1. Hospital Admissions

Numerator: National Minimum Dataset: Hospital admissions for young people aged 15–24 years with a primary diagnosis of injury (ICD-10-AM S00–T79) and an external cause code (e-code) of intentional self-harm (ICD-10-AM X60–X84); Admissions with an Emergency Medicine specialty code (M05–M08) on discharge were excluded (see **Appendix 3**).

2. Mortality

Numerator: National Mortality Collection: Deaths of young people aged 15–24 years with a main underlying cause of death of intentional self-harm (ICD-10-AM X60–X84)

Denominator: Statistics NZ Estimated Resident Population (projected from 2007)

Notes on Interpretation

The limitations of the National Minimum Dataset are discussed at length in **Appendix 3**

New Zealand Distribution and Trends

New Zealand Suicide Mortality Trends

In New Zealand during 2000–2009, suicide rates in young people aged 15–24 years remained relatively static. On average during this period, 107 New Zealand young people each year died as the result of suicide (**Figure 136**).

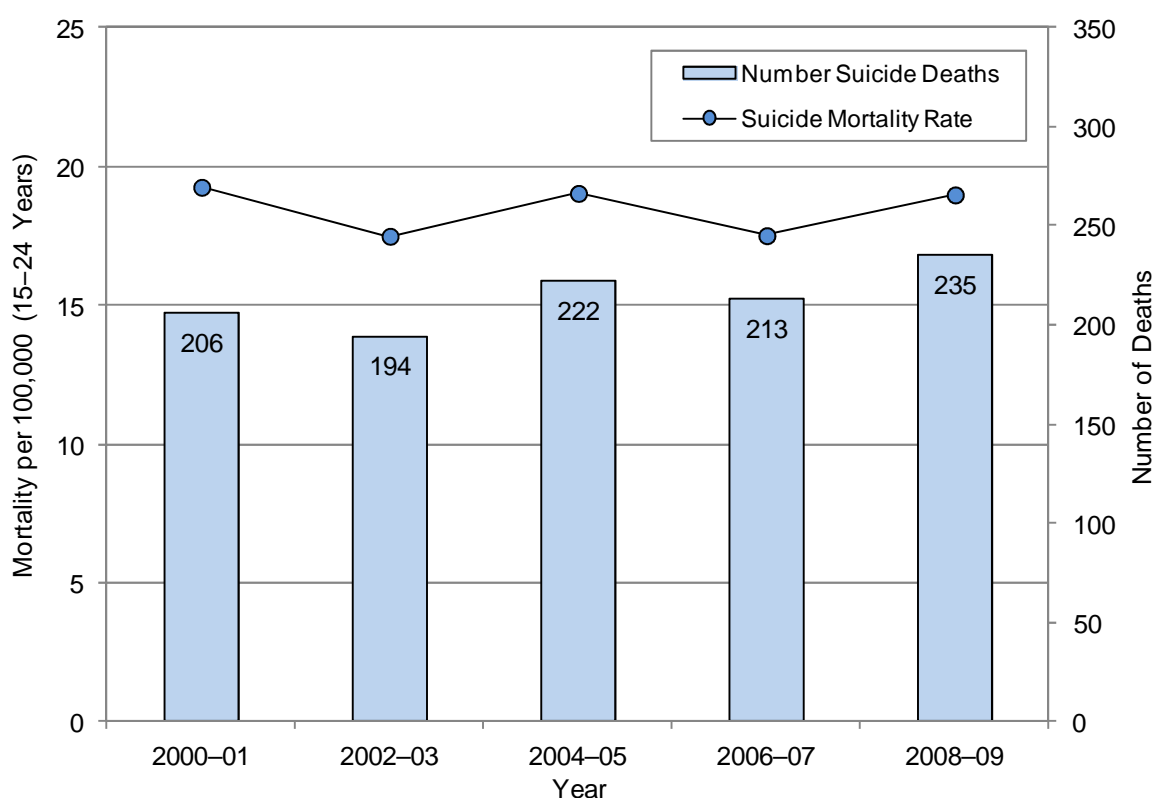
New Zealand Distribution by Age and Gender

In New Zealand during 2007–2011, hospital admissions for intentional self-harm in females increased rapidly after 12 years of age, reached a peak at 16 years and then declined. Admission rates for males increased more slowly during the teenage years, and were lower than for females at all ages from 12 years onwards. In contrast, while mortality from suicide during 2005–2009 also increased during the teenage years, rates were higher for males than for females from 15 years of age onwards (**Figure 137**).

New Zealand Distribution by Ethnicity and Gender

In New Zealand during 2007–2011, hospital admissions for intentional self-harm were *significantly* higher for Māori than for European/Other young people, while rates for Pacific young people were *significantly* lower. Admission rates were also *significantly* higher for females than for males. In contrast, during 2005–2009 suicide mortality rates were *significantly* higher for males than for females. Mortality was also *significantly* higher for Māori and Pacific young people than for European/Other young people (**Table 116**).

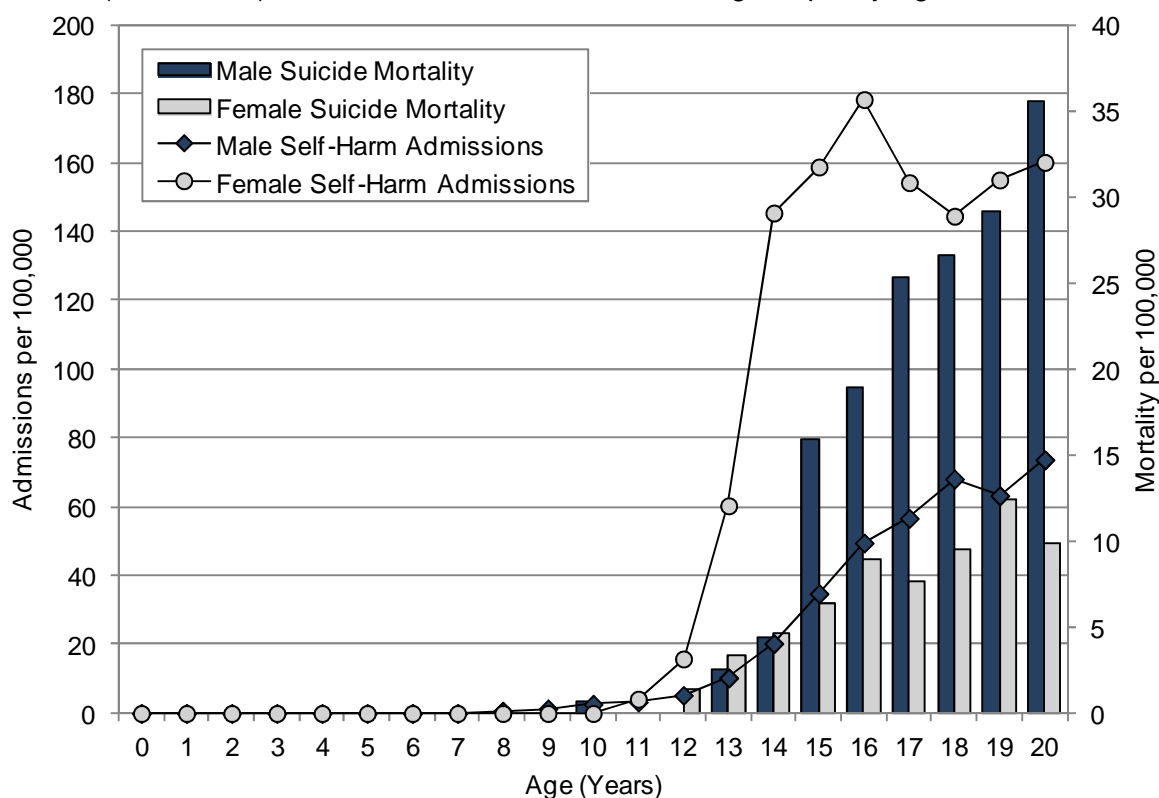
Figure 136. Mortality from Suicide in Young People Aged 15–24 Years, New Zealand 2000–2009



Source: Numerator: National Mortality Collection; Denominator: Statistics NZ Estimated Resident Population (projected from 2007); Note: Number of deaths is per two year period



Figure 137. Hospital Admissions for Intentional Self-Harm (2007–2011) and Mortality from Suicide (2005–2009) in New Zealand Children and Young People by Age and Gender



Source: Numerators: National Minimum Dataset and National Mortality Collection; Denominator: Statistics NZ Estimated Resident Population (projected from 2007)

Table 116. Hospital Admissions for Intentional Self-Harm (2007–2011) and Mortality from Suicide (2005–2009) in New Zealand Young People 15–24 Years by Ethnicity and Gender

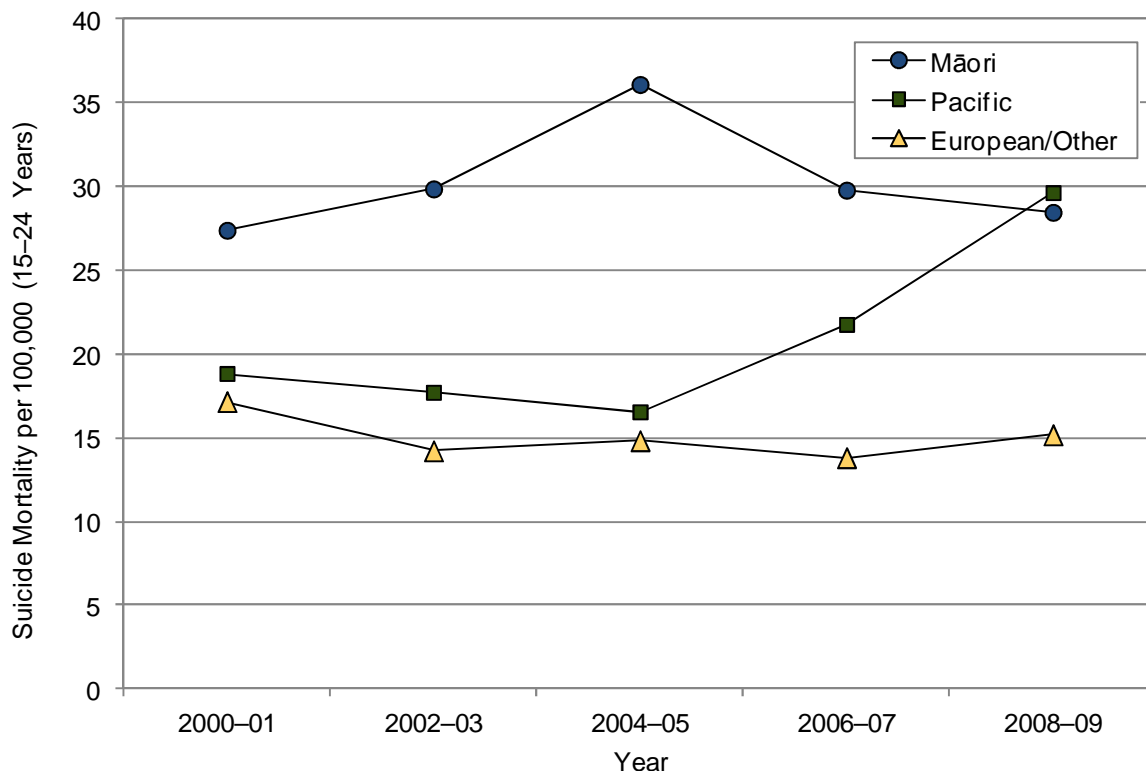
Variable	Rate	Rate Ratio	95% CI	Variable	Rate	Rate Ratio	95% CI
Intentional Self-Harm Admissions							
European/Other	103.31	1.00		Female	145.30	1.00	
Māori	115.25	1.12	1.03–1.21	Male	60.06	0.41	0.38–0.45
Pacific	56.74	0.55	0.46–0.65				
Suicide Mortality							
European/Other	14.37	1.00		Female	8.72	1.00	
Māori	30.25	2.11	1.75–2.53	Male	27.60	3.16	2.60–3.85
Pacific	24.59	1.71	1.30–2.25				

Source: Numerators: National Minimum Dataset and National Mortality Collection; Denominator: Statistics NZ Estimated Resident Population (projected from 2007); Note: Rate is per 100,000; Ethnicity is Level 1 Prioritised; Rate Ratios are unadjusted

New Zealand Trends by Ethnicity

In New Zealand during 2000–2009, suicide mortality was consistently higher for Māori young people than for European/Other young people. Large increases in rates for Pacific young people after 2004–05 saw rates becoming similar to those of Māori young people by 2008–09 (**Figure 138**).

Figure 138. Mortality from Suicide in Young People Aged 15–24 Years by Ethnicity, New Zealand 2000–2009



Source: Numerator: National Mortality Collection; Denominator: Statistics NZ Estimated Resident Population (projected from 2007); Note: Ethnicity is Level 1 Prioritised

South Island Distribution and Trends

South Island Distribution

Hospital Admissions: In Nelson Marlborough, South Canterbury, Canterbury and the West Coast during 2007–2011, hospital admissions for intentional self-harm were *significantly* higher than the New Zealand rate, while in Otago and Southland, rates were similar to the New Zealand rate (**Table 117**).

Table 117. Hospital Admissions for Intentional Self-Harm in Young People Aged 15–24 Years, South Island DHBs vs. New Zealand 2007–2011

DHB/Area	Number: Total 2007–2011	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Young People Aged 15–24 Years					
Intentional Self-Harm Admissions					
Nelson Marlborough	218	43.6	274.51	2.69	2.35–3.09
South Canterbury	49	9.8	153.70	1.51	1.14–2.00
Canterbury	465	93.0	129.18	1.27	1.15–1.40
West Coast	39	7.8	206.35	2.03	1.48–2.78
Otago	161	32.2	96.55	0.95	0.81–1.11
Southland	85	17.0	121.59	1.19	0.96–1.48
New Zealand	3,171	634.2	101.86	1.00	

Source: Numerator: National Minimum Dataset; Denominator: Statistics NZ Estimated Resident Population (projected from 2007)



Mortality: In South Canterbury and Southland during 2005–2009, suicide mortality was *significantly* higher than the New Zealand rate, while in Nelson Marlborough, Canterbury and Otago rates were not *significantly* different from the New Zealand rate. No youth suicide deaths occurred on the West Coast during this period. In total, 17 Nelson Marlborough, 14 South Canterbury, 57 Canterbury, 25 Otago and 26 Southland young people died as the result of suicide during this period (**Table 118**).

Table 118. Mortality from Suicide in Young People Aged 15–24 Years, South Island DHBs vs. New Zealand 2005–2009

DHB/Area	Number: Total 2005–2009	Number: Annual Average	Rate per 100,000	Rate Ratio	95% CI
Young People Aged 15–24 Years					
Suicide Mortality					
Nelson Marlborough	17	3.4	21.89	1.20	0.74–1.94
South Canterbury	14	2.8	45.45	2.48	1.46–4.22
Canterbury	57	11.4	16.21	0.89	0.67–1.16
West Coast	0	0.0	0.00	0.00	0.0
Otago	25	5.0	15.07	0.82	0.55–1.23
Southland	26	5.2	36.90	2.02	1.36–2.99
New Zealand	557	111.4	18.29	1.00	

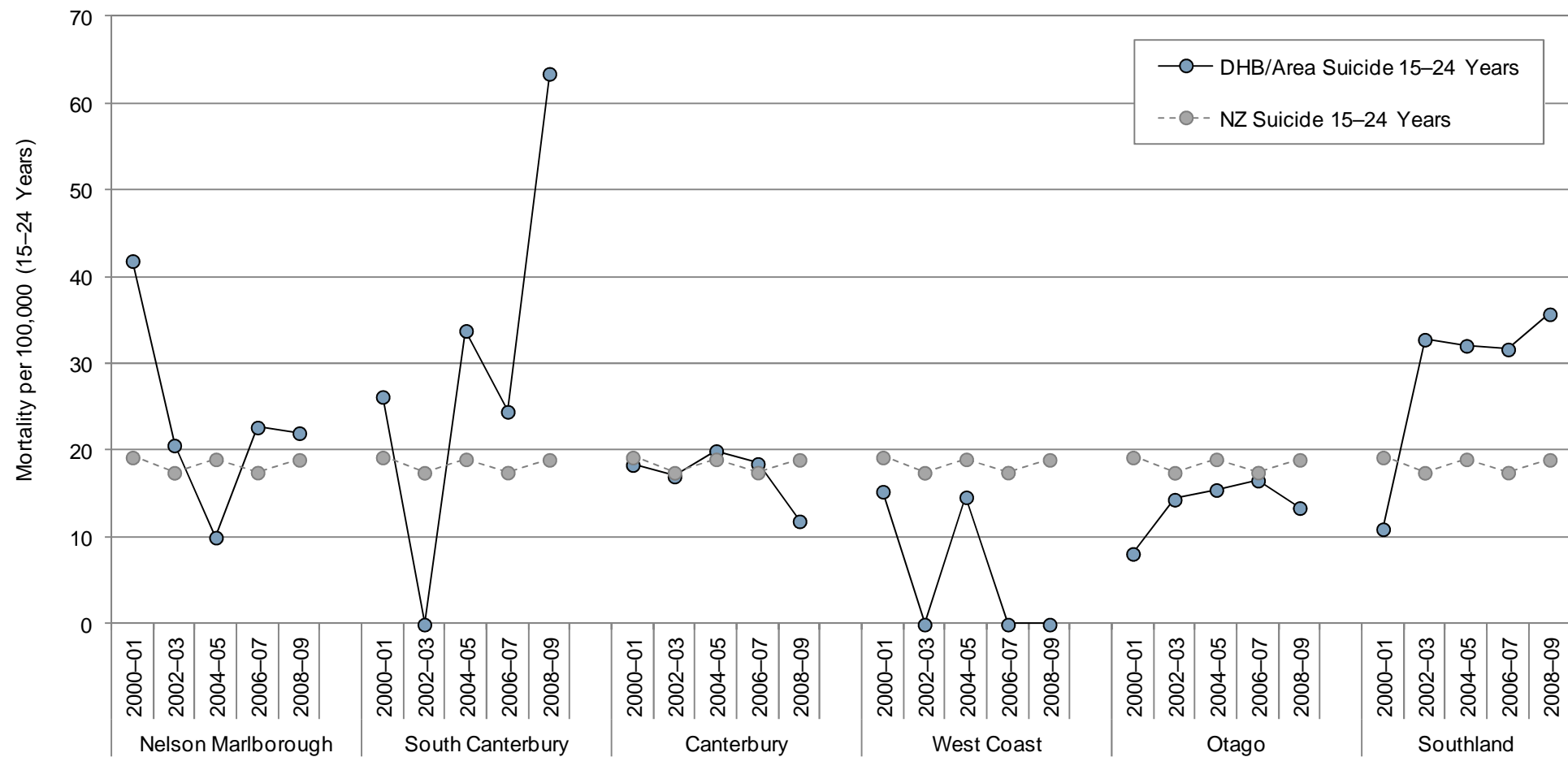
Source: Numerator: National Mortality Collection; Denominator: Statistics NZ Estimated Resident Population (projected from 2007)

South Island Trends

In the South Island during 2000–2009, while large year to year variations in rates precluded a precise interpretation of trends, suicide mortality was higher than the New Zealand rate in South Canterbury and Southland during the late 2000s (**Figure 139**).



Figure 139. Mortality from Suicide in Young People Aged 15–24 Years, South Island DHBs vs. New Zealand 2000–2009



Source: Numerator: National Mortality Collection; Denominator: Statistics NZ Estimated Resident Population (projected from 2007)

Local Policy Documents and Evidence-Based Reviews Relevant to the Prevention of Suicide and Intentional Self-Harm

In New Zealand, the New Zealand Suicide Prevention Strategy provides a framework for suicide prevention among young people and the wider population. A number of local and international reviews also address the prevention of suicide and self-harm in young people and these are summarised in **Table 119** below. In addition, a range of publications focus on mental health issues in young people more generally, and these are summarised in **Table 90** on **Page 350**.

Table 119. Local Policy Documents and Evidence-Based Reviews Relevant to the Prevention of Suicide and Intentional Self-Harm

Ministry of Health Policy Documents
<p>Associate Minister of Health. 2006. The New Zealand Suicide Prevention Strategy 2006–2016. Wellington: Ministry of Health. http://www.health.govt.nz/publication/new-zealand-suicide-prevention-strategy-2006-2016</p> <p>The New Zealand Suicide Prevention Strategy provides a framework for suicide prevention in all ages, for the period 2006 to 2016. Its aim is to reduce the rate of suicidal behaviour and its effects on New Zealanders, while recognising that suicide affects some groups more than others, including young people aged 15 to 24 years. The strategy identifies seven goals: to promote mental health and wellbeing, and prevent mental health problems; to improve the care of people who are experiencing mental disorders associated with suicidal behaviour; to improve the care of people who make non-fatal suicide attempts; to reduce access to the means of suicide; to promote the safe reporting and portrayal of suicidal behaviour by the media; to support families/whānau, friends and others affected by a suicide or a suicide attempt; and to expand the evidence about the rates, causes and effective interventions</p>
<p>Ministry of Health. 2008. New Zealand Suicide Prevention Action Plan 2008–2012: The Summary for Action. Wellington: Ministry of Health.</p> <p>Ministry of Health. 2008. New Zealand Suicide Prevention Action Plan 2008–2012: The Evidence for Action. Wellington: Ministry of Health.</p> <p>http://www.health.govt.nz/publication/new-zealand-suicide-prevention-action-plan-2008-2012</p> <p>These companion documents provide the 2008–2012 action plan for the New Zealand Suicide Prevention Strategy 2006–2016. The Evidence for Action document provides the evidence base for the goals of the strategy and the Summary for Action identifies outcomes, actions, milestones, whānau ora considerations, timeframes and the lead agencies responsible for implementing the actions.</p>
Cochrane Systematic Reviews
<p>Hawton KKE, et al. 1999. Psychosocial and pharmacological treatments for deliberate self harm. Cochrane Database of Systematic Reviews doi:10.1002/14651858.CD001764</p> <p>http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD001764/frame.html</p> <p>This review, published in 1999 and reviewed (with no change to the findings) in 2009, assessed the effectiveness of psychosocial and/or psychopharmacological treatments versus standard or less intensive types of aftercare for patients who have deliberately harmed themselves by self-poisoning or self-injury. Twenty-three RCTs (3,014 participants) were included. A non-significant trend toward reduced repetition of deliberate self-harm (DSH) was observed for problem-solving therapy, and for provision of a card to allow emergency contact with services. Significant improvements were identified in a single trial of depot flupenthixol for recurrent repeaters of self-harm (OR 0.09, 95% CI 0.02 to 0.50) and a single trial of intensive dialectical behavioural therapy for female patients with borderline personality disorder and recurrent self-harm (OR 0.24, 95% CI 0.06 to 0.93) but numbers were small and the trials should be interpreted with caution. Overall, insufficient numbers of patients in nearly all trials limited the conclusions that could be reached about which forms of treatment are most effective and the authors call for larger trials.</p>
Other Systematic Reviews
<p>Robinson J, et al. 2011. Preventing suicide in young people: systematic review. Australian and New Zealand Journal of Psychiatry, 45(1), 3–26.</p> <p>This study aimed to review RCTs of interventions for adolescents and young adults who had presented to a clinical setting with a suicide attempt (SA), suicidal ideation or deliberate self-harm (DSH). The analysis included 15 published and six ongoing RCTs, the majority of which recruited young people from inpatient or community mental health services following a SA or DSH and most interventions were delivered in outpatient settings. Overall study reporting quality was poor and only a few study results could be combined in meta-analysis, which did not find any significant differences. Only one study, assessing individual cognitive behavioural therapy (CBT) found a significant difference between the intervention and treatment as usual. The authors concluded that although individual CBT based interventions may show some promise, the evidence base for effective interventions was very limited.</p>

<p>Ougrin D & Latif S. 2011. Specific Psychological Treatment Versus Treatment as Usual in Adolescents with Self-Harm. Crisis: The Journal of Crisis Intervention and Suicide Prevention, 32(2), 74-80.</p> <p>This systematic review identifies disengagement from follow-up as a marker of poorer outcomes for adolescents following self-harm, and assessed whether offering specific psychological treatment (SPT) led to better engagement than treatment as usual (TAU) in adolescents who had self-harmed. Seven RCTs were included, of which six were suitable for meta-analysis (498 participants). There was no statistically significant difference between the number of subjects not completing four or more sessions of an SPT (27.7%) than TAU (43.3%), RR 0.71 (95% CI 0.49 to 1.05). The authors acknowledge that a number of other factors could affect treatment engagement and suggest that further research is needed to assess a range of factors, such as family barriers and site of treatment.</p>
<p>van der Feltz-Cornelis CM, et al. 2011. Best Practice Elements of Multilevel Suicide Prevention Strategies. Crisis: The Journal of Crisis Intervention and Suicide Prevention, 32(6), 319-33.</p> <p>This review of systematic reviews sought to identify effective interventions for the prevention of suicidal behaviour for incorporation into optimal multilevel interventions for suicide prevention. Six reviews were included. Qualitative synthesis identified best practice interventions: training general practitioners (GPs) to recognise and treat depression and suicidality, improving accessibility of care for at-risk people, and restricting access to means of suicide. No outcomes were reported for multilevel interventions or for synergistic effects of multiple interventions applied together. Prevention programmes for children and adolescents appeared to have mixed results, and while knowledge about suicide improves, there are both beneficial and harmful effects in relation to help-seeking, attitudes, and peer support. There was insufficient evidence to support school curriculum-based programmes, which may promote harmful behaviours in at-risk individuals. While awareness raising combined with easier access to care may have synergistic effects, this has not been confirmed in children and adolescents.</p>
<p>Tarrier N, et al. 2008. Cognitive-Behavioural Interventions to Reduce Suicide Behaviour. Behaviour Modification, 32(1), 77-108.</p> <p>This systematic review assessed the effectiveness of cognitive behavioural therapy (CBT) in reducing suicidal behaviour (completed suicides, suicide attempts, suicide intent and/or plans, and suicide ideation). Twenty-eight RCTs, comparing CBT type treatments to treatment as usual were included, seven of which described their participants as adolescents. Meta-analysis, using a random effects model due to the heterogeneity of the studies, identified a highly significant effect for CBT reducing suicidal behaviour. However, subgroup analysis identified the treatment effect in adults but not adolescents. Despite optimism about the potential for CBT in reducing suicidal behaviour, the authors found evidence of publication bias (non-significant results not being published).</p>
<p>Mann J, et al. 2005. Suicide prevention strategies: a systematic review. JAMA, 294(16), 2064-74.</p> <p>This review assessed the effectiveness of specific suicide-preventive interventions with the aim of making recommendations for future prevention programmes and research. Ten systematic reviews and meta-analyses, 18 RCTs, 24 cohort studies and 41 population based studies were included in the narrative synthesis. Physician education in depression recognition and treatment and restricting access to lethal methods were found to be effective in reducing suicide rates. There was insufficient evidence to support other methods including public education, screening programmes, and media education.</p>
<p style="text-align: center;">Evidence-based Guidelines</p>
<p>National Institute for Health and Clinical Excellence. 2011. Self-harm: longer-term management (NICE clinical guideline 133). Manchester: National Institute for Health and Clinical Excellence. http://guidance.nice.org.uk/CG133.</p> <p>This clinical guideline offers evidence-based advice on the longer-term psychological treatment and management of people who self-harm, aged eight years and older. It includes guidance on single and recurrent episodes of self-harm, in primary and secondary care. Guidance on working with people who self-harm, offering a psychosocial assessment of needs, undertaking a risk assessment, developing a care plan and risk management plan, treating associated mental conditions, and consideration of three to 12 sessions of a psychological intervention that is specifically structured for people who self-harm, with the aim of reducing self-harm, is included.</p>
<p>National Institute for Health and Clinical Excellence. 2004. Self-harm: The short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care (NICE clinical guideline 16). Manchester: National Institute for Health and Clinical Excellence. http://www.nice.org.uk/CG16.</p> <p>This evidence-based clinical guidance provides advice on the psychosocial and physical treatment of self-harm, in emergency departments and primary care, within the first 48 hours of an incident. It includes guidance on staff training, triage, physical treatments and assessment of needs and risks. It is recommended that decisions to refer for further treatment are based upon a comprehensive assessment. A small number of trials assessed the accuracy of screening instruments among adolescents but there were no trials examining the harms of screening.</p>
<p>New Zealand Guidelines Group. 2003. The Assessment and Management of People at Risk of Suicide. Wellington: New Zealand Guidelines Group and Ministry of Health. http://www.nzgg.org.nz/library_resources/24_suicide_summary</p> <p>This guideline aims to provide a resource for emergency department (ED) staff and mental health clinicians when assessing and working with people who have made a suicide attempt, or are at risk of suicide. It provides guidance for both individual clinicians and systems of care. It makes recommendations on assessment by EDs and mental health services, initial management and implementation and includes specific advice on children and adolescents. Many of the recommendations are based on a synthesis of expert opinion.</p>

Other Relevant Publications

Beautrais A, et al. 2005. **Suicide Prevention: A review of evidence of risk and protective factors, and points of effective intervention.** Wellington: Ministry of Health. <http://www.health.govt.nz/publication/suicide-prevention-review-evidence-risk-and-protective-factors-and-points-effective-intervention>

This report was commissioned to inform the development of the NZ Suicide Prevention Strategy and includes a review of the epidemiology of suicide and attempted suicide in New Zealand, risk factors, resiliency and protective factors for suicide and attempted suicide and points of effective intervention to reduce and prevent suicide and attempted suicide. Cultural issues in the development and implementation of a culturally relevant suicide prevention strategy are discussed. The report found that while suicide was complex and multifactorial, the largest contribution comes from mental health disorders. The authors concluded that minimising rates of psychiatric disorders and addressing the risk factors and life pathways that lead to these disorders should be the major focus of suicide prevention efforts.

Note: the publications listed were identified using the search methodology outlined in **Appendix 1**