INJURIES ARISING FROM ASSAULT IN YOUNG PEOPLE

Introduction

Witnessing, perpetrating, or being a victim of assault is a relatively common experience for young people in New Zealand. The Youth ’12 survey of 8,500 secondary school students from across New Zealand found that one third (33%) of students reported being hit or physically harmed by someone, and 14% reported being in a serious physical fight, in the last 12 months [358]. Assault-related injuries serious enough to require the attention of a doctor, nurse or physiotherapist were less common, however, affecting just over 2% of all students in the previous 12 months (2.8% of males and 1.5% of females) [359]. Of all age groups in the population, young people aged 15–24 years are the most likely to be victims of violence [389].

The Christchurch longitudinal study examined the factors which place young people at risk of physical assault. It found that the major predictors of assault victimisation during late adolescence included both childhood factors and concurrent factors. The significant childhood predictors were being male, a history of parental alcohol problems, regular or severe physical punishment, and early adolescent conduct problems. The significant predictors during late adolescence were alcohol abuse/dependence and violent and other offending [390]. The authors of this study stated that their findings are consistent with those of other studies which have shown a considerable overlap between the perpetrators and victims of violent crime.

Recent alcohol consumption by both the perpetrators and the victims of assault is common, and associated with more severe injury [391]. A recently published study examining the effect on assault rates of the lowering of the minimum alcohol purchasing age in New Zealand (in 1999) found that it increased weekend assaults resulting in hospitalisations among young men aged 15 to 19 years (relative to young men aged 20 to 21 years) but had no statistically significant effect in young women [392].

With these issues in mind, the following section explores hospital admissions and mortality from injuries arising from assault in young people aged 15–24 years using information from the National Minimum Dataset and the National Mortality Collection.

Data Source and Methods

Indicator

1. Hospital admissions for injuries arising from assault in young people aged 15–24 years

2. Deaths from injuries arising from assault in young people aged 15–24 years

Data Source

1. Hospital admissions

Numerator: National Minimum Dataset: Hospital admissions in young people aged 15–24 years with a primary diagnosis of injury (ICD-10-AM S00–T79) and an external cause code of intentional injury (ICD-10-AM X85–Y09) in any of the first 10 external cause codes. As outlined in the appendix, in order to ensure comparability over time, all cases with an emergency department specialty code (M05–M08) on discharge were excluded.

Denominator: NZ Statistics NZ Estimated Resident Population

2. Mortality

Numerator: National Mortality Collection: Deaths in young people aged 15–24 years with a clinical code (cause of death) of intentional injury (ICD-10-AM X85–Y09).

Denominator: NZ Statistics NZ Estimated Resident Population

Interpretation

The limitations of the National Minimum Dataset are discussed at length in the Appendix. The reader is urged to review this Appendix before interpreting any trends based on hospital admission data.

New Zealand Distribution and Trends

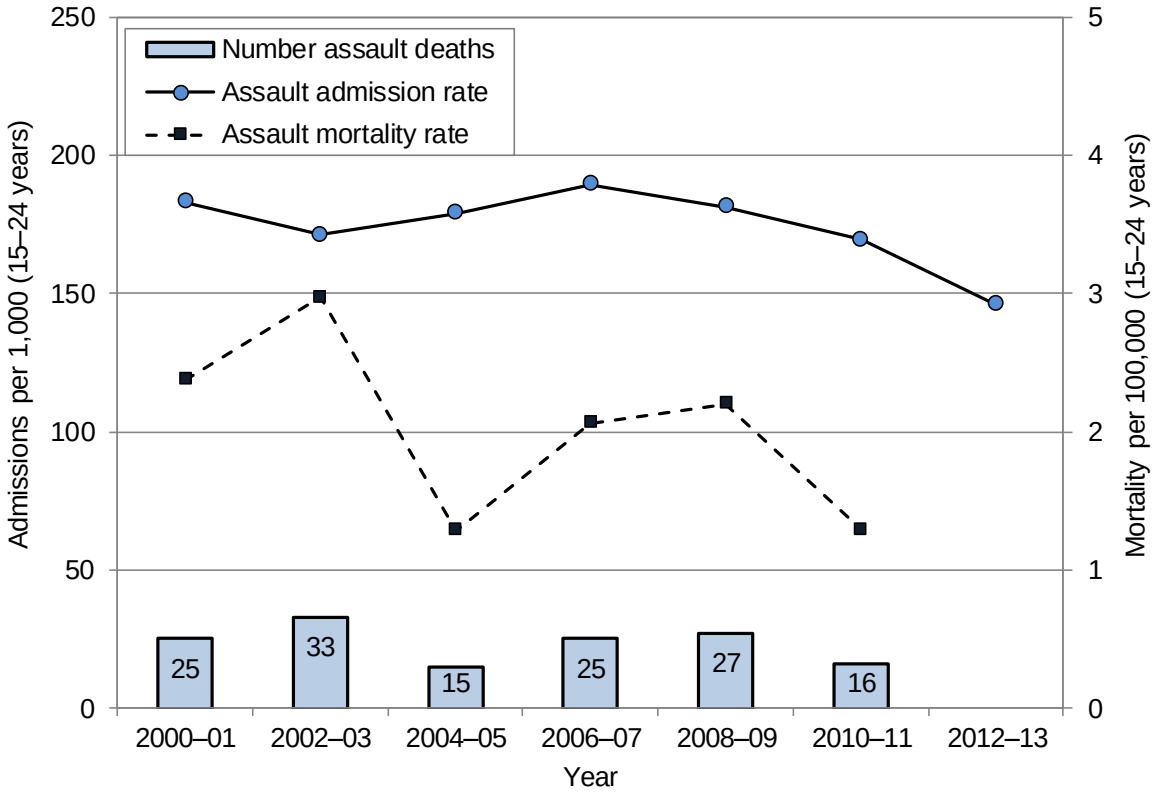
New Zealand Trends

In New Zealand during 2000–2013, hospital admissions for injuries arising from assault in young people remained relatively static, while mortality during 2000–2013 fluctuated from year to year. On average during 2000–2011, around 12 young people per year died from injuries arising from an assault (**Figure 1**).

Distribution by Age and Gender

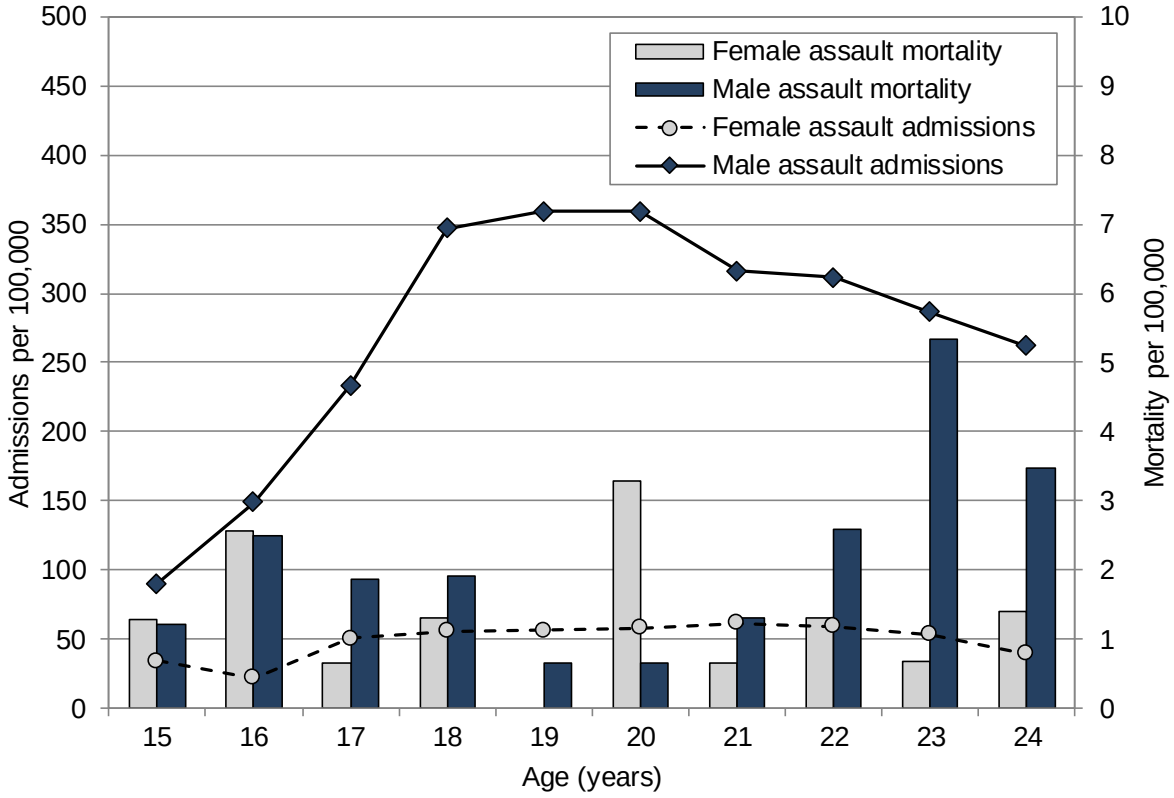
In New Zealand during 2009–2013, hospital admissions for injuries arising from assault in males increased rapidly during the mid-to-late teens, reaching a peak at 20 years of age. While assault admissions for females also increased during the teenage years, rates were lower than for males at all ages. Assault mortality during 2007–2011 was also highest for males during their early 20s, although patterns for females were more variable (**Figure 2**).

Figure 1. Hospital admissions (2000–2013) and deaths (2000–2011) due to injuries arising from assault in New Zealand young people aged 15–24 years



Source: Numerator: Admissions: National Minimum Dataset (Emergency Department cases excluded); Mortality: National Mortality Collection; Denominator: Statistics NZ Estimated Resident Population; Note: numbers of deaths are per two year period

Figure 2. Hospital admissions (2009–2013) and deaths (2007–2011) due to injuries arising from assault in New Zealand young people by age and gender



Source: Numerator: *Admissions*: National Minimum Dataset (Emergency Department cases excluded); *Mortality*: National Mortality Collection; Denominator: Statistics NZ Estimated Resident Population

Distribution by NZDep Index Decile, Ethnicity and Gender

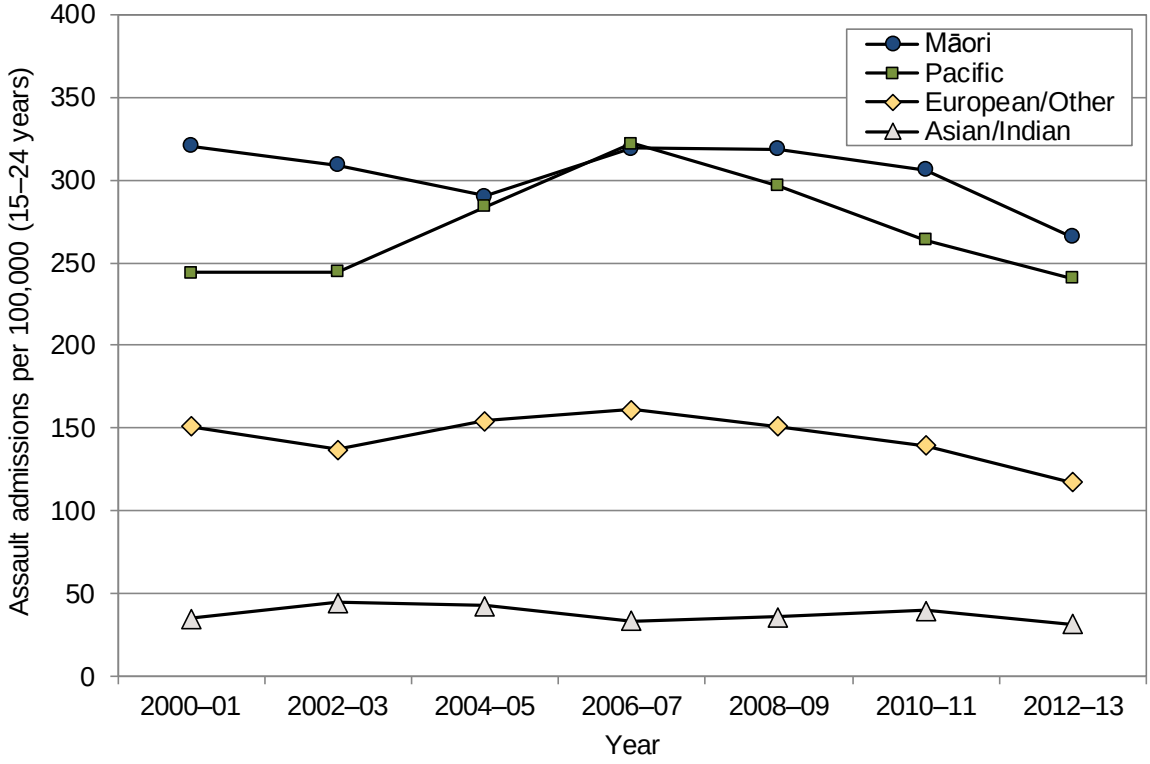
In New Zealand during 2009–2013, hospital admissions for injuries arising from assault were *significantly higher* for Māori and Pacific young people than for European/Other young people, and *significantly lower* for Asian/Indian young people. Admissions were also *significantly higher* for young men than for young women, and for those from less deprived to more deprived areas (NZDep deciles 3–10) (**Table 1**). Similar ethnic differences were seen throughout 2000–2013 (**Figure 3**).

Table 1. Hospital admissions for injuries arising from assault in young people aged 15–24 years by NZDep Index decile, ethnicity and gender, New Zealand 2009–2013

Assault admissions							
Young people 15–24 years							
Variable	Rate	Rate ratio	95% CI	Variable	Rate	Rate ratio	95% CI
NZ Deprivation Index decile				Prioritised ethnicity			
Deciles 1–2	81.93	1.00		Māori	295.78	2.26	2.12–2.40
Deciles 3–4	103.34	1.26	1.11–1.43	Pacific	258.57	1.97	1.81–2.15
Deciles 5–6	135.61	1.66	1.47–1.86	Asian/Indian	35.22	0.27	0.23–0.32
Deciles 7–8	176.34	2.15	1.93–2.40	European/Other	130.93	1.00	
Deciles 9–10	253.24	3.09	2.79–3.43				
Gender							
Female	48.95	1.00		Male	270.95	5.54	5.12–5.98

Source: Numerator: National Minimum Dataset (Emergency Department cases excluded); Denominator: Statistics NZ Estimated Resident Population; Note: Rate is per 100,000; Rate ratios are unadjusted; Ethnicity is level 1 prioritised; Decile is NZDep06

Figure 3. Hospital admissions for injuries arising from assault in young people aged 15–24 years by ethnicity, New Zealand 2000–2013



Source: Numerator: National Minimum Dataset (Emergency Department cases excluded); Denominator: Statistics NZ Estimated Resident Population; Note: Ethnicity is level 1 prioritised

Nature of the Injury Sustained

In New Zealand during 2009–2013, the most common types of injuries in young people sustained as the result of an assault were head injuries, in which fractures of the lower jaw, facial bones, and nose were particularly prominent. Upper limb (including hand and wrist) injuries were also common (**Table 2**).

Table 2. Nature of injuries arising from assault in hospitalised young people aged 15–24 years, New Zealand 2009–2013

Primary diagnosis	Number: total 2009–2013	Number: annual average	Rate per 100,000	Percent
Assault admissions for young people aged 15–24 years				
Head injuries				
Fracture of the lower jaw	1,264	252.8	40.71	25.2
Fracture of malar and maxillary bones	295	59.0	9.50	5.9
Fracture of the orbital floor	257	51.4	8.28	5.1
Fracture of the nasal bones	252	50.4	8.12	5.0
Other fractures skull or facial bones	137	27.4	4.41	2.7
Concussion	250	50.0	8.05	5.0
Open wound of head	243	48.6	7.83	4.8
Superficial head injury	131	26.2	4.22	2.6
Traumatic subdural haemorrhage	67	13.4	2.16	1.3
Open wound eyelid/eye area	65	13.0	2.09	1.3
Other head injuries	409	81.8	13.17	8.1
Other injuries				
Injuries to abdomen, spine, and pelvis	307	61.4	9.89	6.1
Fracture of wrist/hand	248	49.6	7.99	4.9
Other injuries to wrist and hand	334	66.8	10.76	6.7
Injuries to elbow and forearm	184	36.8	5.93	3.7
Injuries to knee/lower leg/foot/ankle	137	27.4	4.41	2.7
Injuries to thorax (including rib fractures)	130	26.0	4.19	2.6
Injuries to shoulder/upper arm	108	21.6	3.48	2.2
Injuries to neck	108	21.6	3.48	2.2
Injuries to hip and thigh (incl. fractured femur)	30	6.0	0.97	0.6
Maltreatment	6	1.2	0.19	0.1
Other injuries	58	11.6	1.87	1.2
Total injuries	5,020	1004.0	161.69	100.0

Source: National Minimum Dataset (Emergency Department cases excluded); Denominator: Statistics NZ Estimated Resident Population

South Island DHBs Distribution and Trends

South Island DHBs vs. New Zealand

In South Canterbury during 2009–2013, hospital admissions for injuries arising from assault in young people were *significantly higher* than the New Zealand rate, while rates in the Canterbury and Southern DHB were *significantly lower* (**Table 3**).

South Island DHBs Trends

In the South Island DHBs during 2000–2013, there was considerable year to year variation in hospital admissions for injuries arising from assault in young people, making precise interpretation of trends difficult. However, rates in Nelson Marlborough, South Canterbury, and the West Coast were consistently higher than the New Zealand rate, while rates in the Canterbury and Southern were consistently lower (**Figure 4**).

South Island DHBs Mortality

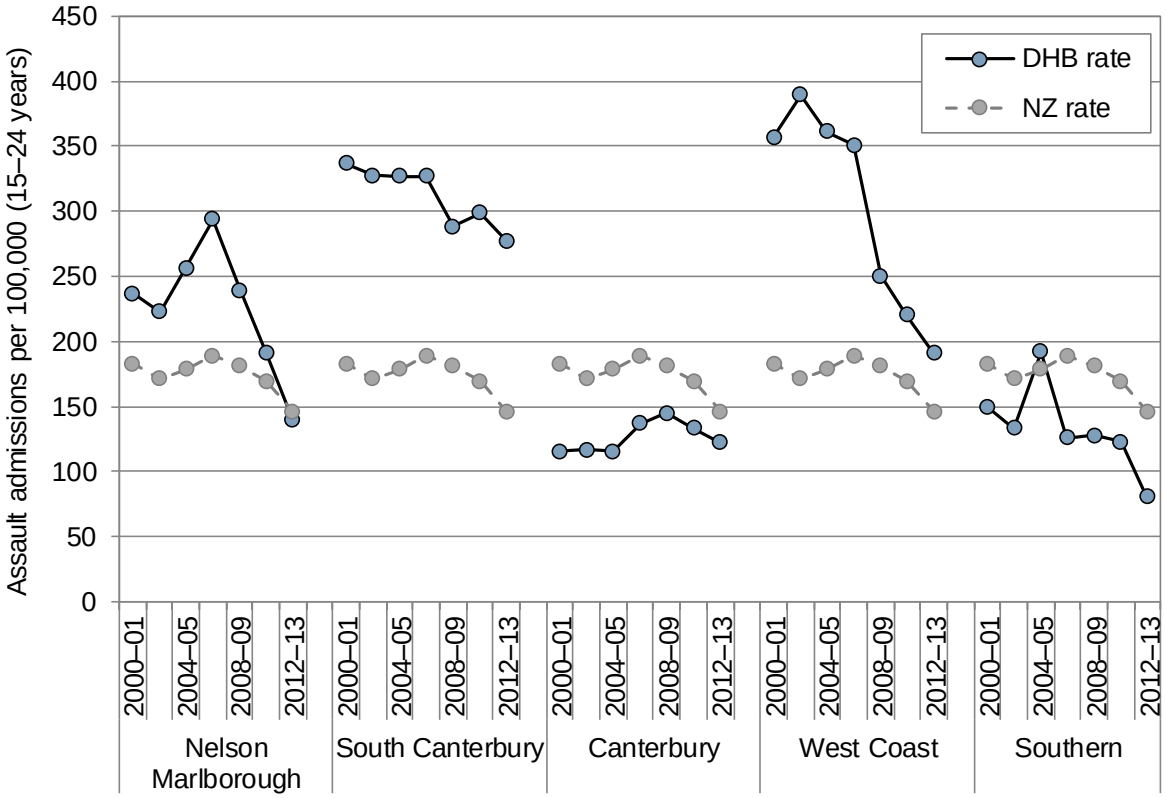
During 2000–2011, 4 Nelson Marlborough, 3 South Canterbury, 12 Canterbury, 2 West Coast, and 7 Southern young people aged 15–24 years died as the result of an assault.

Table 3. Hospital admissions for injuries arising from assault in young people aged 15–24 years, South Island DHBs vs. New Zealand 2009–2013

DHB	Number: total 2009–2013	Number: annual average	Rate per 100,000	Rate ratio	95% CI
Young people aged 15–24 years					
Assault admissions					
Nelson Marlborough	125	25.0	165.36	1.02	0.86–1.22
South Canterbury	99	19.8	309.65	1.92	1.57–2.34
Canterbury	482	96.4	136.17	0.84	0.77–0.92
West Coast	38	7.6	208.63	1.29	0.94–1.77
Southern	248	49.6	104.92	0.65	0.57–0.74
New Zealand	5,020	1,004.0	161.69	1.00	

Source: Numerator: National Minimum Dataset (Emergency Department cases excluded); Denominator: Statistics NZ Estimated Resident Population

Figure 4. Hospital Admissions for injuries arising from assault in young people aged 15–24 years, South Island DHBs vs. New Zealand 2000–2013



Source: Numerator: National Minimum Dataset (Emergency Department cases excluded); Denominator: Statistics NZ Estimated Resident Population

Local Policy Documents and Evidence-based Reviews Relevant to the Prevention of Assault in Young People

In New Zealand, there is no single strategy for the prevention of assault in young people. Evidence from a variety of sources will therefore need to be incorporated into local strategies. **Table 4** (below) provides an overview of evidence based reviews which may be useful in this context. In addition, publications exploring the prevention of child maltreatment and consider family violence more broadly are found in relevant chapters in this report.

Table 4. Local policy documents and evidence-based reviews relevant to the prevention of assault in young people

Ministry of Justice publications
Ministry of Justice. 2013. **Youth crime action plan 2013–2023**. Wellington: Ministry of Justice. http://www.justice.govt.nz/publications/global-publications/y/youth-crime-action-plan-full-report/publication/at_download/file This report describes best practice in dealing with youth crime, and sets out the Government's agenda for the ten years 2013–2023 for advancing policy and practice through three interconnected strategies: partnering with communities, reducing escalation and early and sustainable exits, which are underpinned by governance, workforce and information sharing. It also presents a picture of best practice using eleven central components of the youth justice system to show how the Action Plan will work in the community. It sets out the actions that will be taken by the agencies to implement the strategies and the associated governance, workforce and information sharing requirements. It concludes with a short section outlining the relationships of the Youth Crime Action Plan to other key initiatives or programmes of work in various government agencies.
Crawford R, Kennedy P. 2008. **Improving interventions to reduce violent offending by young people in New Zealand**. Wellington: Ministry of Justice. http://www.justice.govt.nz/publications/global-publications/i/improving-interventions-to-reduce-violent-offending-by-young-people-in-new-zealand This paper addressed concerns about the perceived increase in the level of youth violence and interventions to reduce violent offending by young people aged 14 to 16 years. Police apprehensions for violent offending among 14 to 16 year olds increased sharply between 2005 and 2006 but it was unclear whether this represented a true increase in violence or changes in reporting and policing. About half of all serious self-reported violent offences are committed by a small, mainly male, group who exhibited persistent conduct disorder during childhood and who are likely to become life course persistent offenders. The paper's authors found only three therapeutic programmes targeted at recidivist offenders that had evidence of effectiveness from more than one RCT: Multisystemic Therapy, Functional Family Therapy and Multi-dimensional Treatment Foster Care. They reviewed New Zealand interventions and stated that two small scale programmes, Auckland's Reducing Youth Offending Programme and Hamilton's Te Hurihanga programme, use Multisystemic Therapy and are supported by the research evidence. They made a number of recommendations relating to: addressing risk factors, especially childhood conduct disorder, involving Māori in interventions, improving the capability and responsiveness of the youth justice system, information management, and expanding programmes of demonstrated effectiveness.
Ministry of Social Development publications
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. https://www.msd.govt.nz/about-msd-and-our-work/work-programmes/policy-development/anti-social-behaviour/ 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.

New Zealand guidelines
Ministry of Social Development. 2014. **Conduct Disorder: Services guidelines version two February 2014**. Wellington: Ministry of Social Development. https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/service-guidelines/conduct-disorder-services-guidelines.pdf
These guidelines are intended for providers contracted by the Ministry of Social Development to deliver conduct disorder services to young people (10–16 years) referred by Child, Youth and Family. They set out minimum standards for services. They provide information on Provision of Multisystemic Therapy, Functional Family Therapy, Multidimensional Treatment Foster care and residential care. They also cover the principles underpinning the relationships between the Ministry, the provider and the client, incident reporting, missing children or young people, and reporting requirements.
International guidelines
National Institute for Health and Care Excellence. 2013. **Antisocial behaviour and conduct disorders in children and young people: recognition, intervention and management**. London: National Institute for Health and Care Excellence. http://www.nice.org.uk/guidance/cg158/resources/guidance-antisocial-behaviour-and-conduct-disorders-in-children-and-young-people-recognition-intervention-and-management-pdf
Children with conduct disorder are at increased risk of becoming involved with the criminal justice system and having a conduct disorder is the most common reason for a child or young person being referred to child and adolescent mental health services. This guideline covers identifying and assessing children with a possible conduct disorder and a range of interventions, including selective prevention, indicated prevention and treatment. The full guideline, which contains details of the studies and methods used to develop the guideline, and the appendices, can be downloaded here: http://www.nice.org.uk/guidance/cg158/evidence. The first three chapters of the full guideline contain a summary of clinical practice and research recommendations and chapters four to eight outline the evidence that underpins the recommendations about the treatment and management of conduct disorders.
Evidence-based medicine reviews
Cassidy T, Inglis G, Wiysonge C, et al. 2014. **A systematic review of the effects of poverty deconcentration and urban upgrading on youth violence**. Health Place, 26, 78–87.
Neighbourhoods of concentrated poverty have high levels of youth violence. This review explores interventions which aimed to 'deconcentrate' poverty. It included nine studies: five on urban upgrading, three on resettlement (moving people out of poor neighbourhoods), and two on diversification (encouraging higher SES people to move into poor neighbourhoods). All but one took place in the US. Only one was a RCT. There was no strong evidence to support diversification, but some evidence to support a variety of urban upgrading interventions. Resettlement interventions had the strongest study designs (one controlled trial, one RCT and one cohort study) and evidence of positive effects. The review authors noted the difficulty of conducting methodologically rigorous evaluations of 'upstream' interventions and they considered that this was the reason for the small number of studies identified.
Petrosino A, Turpin-Petrosino C, Hollis-Peel ME, et al. 2013. **'Scared Straight' and other juvenile awareness programs for preventing juvenile delinquency**. Cochrane Database Systematic Reviews, 4, Cd002796. http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD002796.pub2/full
'Scared Straight' and other similar programmes aim to deter juvenile delinquents or children at risk for criminal behaviour from future offending through organised visits to prisons. This review, which is an update of a 2002 review, identified nine RCTs, all of which were included in the 2002 review. The trials were all conducted in the US from 1967 to 1992. In total there were 946 participants, almost all male, with an average age ranging from 15 to 17 years. Meta-analysis of the results of seven studies indicated that the intervention was more harmful (in terms of officially measured criminal behaviour) than doing nothing: fixed effect odds ratio (OR) 1.68, 95% CI 1.20 to 2.36 and random effects OR 1.72, 95% CI 1.13 to 2.62. The authors concluded that programmes such as 'Scared Straight' increase juvenile delinquency and cannot be recommended.
Fagan AA, Catalano RF. 2013. **What Works in Youth Violence Prevention: A Review of the Literature**. Research on Social Work Practice, 23(2), 141–56.
This review aimed to identify effective violence prevention interventions that had been evaluated using high quality research designs and had targeted youth from birth through to late adolescence. It included only studies that assessed the actual perpetration of actual physical or sexual violence by youth aged 0–18. The review authors identified 17 interventions that demonstrated significant reductions in violence. Among these 17 were two early childhood programmes, three teacher-led universal school-based programmes, five school- and family-focused interventions for high risk youth in low-income neighbourhoods, three parent training/family therapy interventions, and four community-based interventions. There was considerable diversity in targeted age groups, strategies employed and programme length. The review authors state that, overall, their findings indicate that strategies designed to reduce risk factors and enhance promotive and protective factors across all areas of children's lives can lead to significant reductions in violent behaviours.

Massetti GM, Vivolo AM, Brookmeyer K, et al. 2011. **Preventing youth violence perpetration among girls**. J Womens Health (Larchmt), 20(10), 1415–28.

This report from the CDC reviews the research on risk and protective factors associated with violence and summarises programme effects for girls within the Model and Promising Blueprints for Violence Prevention Initiative programmes. It notes that much of the literature examining risk and protective factors for violent behaviour has focused exclusively on males, and that where females have been included in study samples, results have typically not been reported separately for each sex. The individual factors that longitudinal studies have consistently identified as predictors of violent or delinquent behaviour include hyperactivity/inattention/impulsivity, risk taking/sensation seeking, low academic achievement, exposure to stress and victimization, and early puberty. Relationship risk factors include poor parent-child relationships, lack of parental monitoring/supervision, parent criminal and/or antisocial behaviour, and family conflict and instability. Peer risk factors include gang membership and affiliation with deviant peers. Community risk factors include economic deprivation, neighbourhood crime, community disorganisation, and the availability of drugs, alcohol and firearms. Very few of the evaluations of programmes that were among the Model and Promising Blueprints for Violence Prevention Initiative programmes examined programme effectiveness in preventing violence among girls, but one universal school-based programme, the Olweus Bullying Prevention Program, had positive effects for both girls and boys. Two intervention for high risk youth, Multidimensional Treatment Foster Care and Functional Family Therapy, also had positive effects for girls. The report authors stated that good quality prevalence data needs to be collected, and that further research is needed to determine risk and protective factors, and the effectiveness of programmes and strategies for girls.

Brennan I, Moore SC, Byrne E, et al. 2011. **Interventions for disorder and severe intoxication in and around licensed premises, 1989–2009**. Addiction, 106(4), 706–13.

This systematic review assessed interventions intended to reduce disorder and severe intoxication in and around licenced premises. It included 15 studies, including three RCTs and 12 non-randomised quasi-experimental studies, two of which used RCT methodology. The outcomes measured were intoxication (6 studies), disorder (*n*=6) and intoxication and disorder (*n*=3). Interventions included responsible beverage service training (*n*=5), server violence prevention training (*n*=1), enhanced enforcement of licensing regulations (*n*=1), multi-level interventions (*n*=5), licensee accords (*n*=2) and a risk-focused consultation (*n*=1). The effects of interventions varied, even between studies of similar interventions. Of the studies of violence prevention interventions, it appeared that server training was the most successful, although there was considerable variation in training content. The authors concluded that server training courses designed to reduce disorder have some potential but there is little evidence that server training reduces intoxication and the evidence base is weak.

Snider C & Lee J. 2009. **Youth violence secondary prevention initiatives in emergency departments: a systematic review**. Canadian Journal of Emergency Medicine, 11(2), 161–8.

This review assessed the effectiveness of hospital-based secondary prevention programmes for violently injured youth identified in emergency departments. Seven articles, evaluating four interventions (two RCTs and two retrospective studies), were included. Beneficial effects were identified in one RCT (significant reduction in reinjury rates: treatment group 8.1% versus control group 20.3%, *p*=0.05) and two retrospective studies. A second smaller RCT found no significant effects. Despite some promising results it is difficult to draw conclusions from these studies due to their small size and large losses to follow up. The authors recommend further research to capitalise on the opportunity to intervene in a setting where young people are considered to be in a reflective and receptive state of mind.

Hahn RA, et al. 2007. **Effectiveness of Universal School-Based Programs to Prevent Violent and Aggressive Behaviour: A Systematic Review**. American Journal of Preventive Medicine, 33(2), S114–S29. http://www.thecommunityguide.org/violence/School_Evidence_review.pdf

This review examined the effectiveness of universal school-based interventions (delivered to all children in a school-based setting) in preventing aggressive and violent behaviour in pre-school and school aged children. The primary outcomes were violence by youths and victimisation of youths. Fifty-three studies (39 prospective and controlled, 5 retrospective or multiple pre-test post-test, 9 single pre-test post-test), with median follow-up of six months, were included in the review. The median overall effect showed a 15% reduction (interquartile range for effect sizes between the 25th and 75th quartiles −44.2 to −2.3) in violence-related outcomes at all school grades examined in intervention groups compared to controls. There was no significant relationship between intervention duration and effect size but the effectiveness of the interventions reduced slightly over time once the interventions had ended. This review forms the basis for the US Government Guide to Community Preventive Services “Violence prevention focused on children and youth: school-based programs” available at http://www.thecommunityguide.org/violence/schoolbasedprograms.html .

Limbos MA, et al. 2007. **Effectiveness of interventions to prevent youth violence a systematic review**. American Journal of Preventive Medicine, 33(1), 65–74.

This review assessed the effectiveness of primary (implemented universally to prevent the onset of violence), secondary (implemented selectively with youth at increased risk for violence), and tertiary (focused on youth who had already engaged in violent behaviour) youth violence interventions. Forty-one studies (15 RCTs and 26 other) were included in the review. The heterogeneity of the studies did not allow the authors to pool results and the studies were assessed by ‘vote-counting’ to identify significant (one or more violence outcome indicators significantly different at the *p*<0.05 level) and non-significant results. Half (49%) of interventions were identified as effective. Tertiary-level interventions were more likely to report effectiveness than primary or secondary-level interventions. Interventions that RCTs indicated were effective included Responding in Peaceful and Positive Ways, Aban Aya Youth Project, Moving to Opportunity, Early Community-Based Intervention Program, Childhaven's Therapeutic Child-Care Program, Turning

Point: Rethinking Violence, and a multisystemic therapy program. Several of the interventions assessed by RCT are discussed in more detail. Due to inadequate data the authors were unable to assess differences between interventions and within subpopulations. They called for increased standardisation of evaluations.

Mytton JA, et al. 2006. **School-based secondary prevention programmes for preventing violence**. Cochrane Database of Systematic Reviews doi:10.1002/14651858.CD004606.pub2 http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD004606.pub2/abstract

This review assessed the effectiveness of school based violence prevention programmes for children identified as aggressive or at risk of being aggressive. The review identified 56 RCTs, 34 of which had data suitable for inclusion in the meta-analysis. None of the studies reported data on violent injuries. Aggressive behaviour was significantly reduced in intervention groups compared to no intervention groups immediately post intervention (SMD −0.41, 95% CI −0.56 to −0.26). The seven studies reporting 12 month follow-up maintained the reduction in aggressive behaviour (SMD −0.40, 95% CI −0.73 to −0.06). School or agency disciplinary actions in response to aggressive behaviour were non-significantly reduced in intervention groups for nine trials with data (SMD −0.48, 95% CI −1.16 to 0.19) and were not maintained, based on two studies reporting follow-up at two to four months. Interventions designed to improve relationship or social skills appeared to be more effective than interventions designed to teach skills of non-response to provocative situations. Improvements in behaviour were achieved in primary and secondary schools, and for groups of mixed sex versus boys alone, but the longer term benefit and the effects on injury remain uncertain.

Hahn RA, et al. 2005. **The effectiveness of therapeutic foster care for the prevention of violence: A systematic review**. American Journal of Preventive Medicine, 28(2), 72–90.

This review assessed the effectiveness of therapeutic foster care (TFC) for violence prevention in children with severe emotional disturbance and in adolescents with chronic delinquency. In TFC programmes children who cannot live at home are placed with foster parents trained to provide a structured environment for learning social and emotional skills, and monitored at home, school, and leisure activities by programme personnel. Only five studies were included in the review, three prospective trials with a comparison group and two before and after studies with no comparison group. The two studies of TFC for children with severe emotional disturbance yielded inconsistent results. The three studies of TFC for adolescents with chronic delinquency by one research team indicated a reduction in subsequent violent crime (median effect size -71.9%).

This review formed the basis for the US government Guide to Community Preventive Services “Therapeutic foster care to reduce violence” available at http://www.thecommunityguide.org/violence/therapeuticfostercare/index.html, which recommends TFC for the reduction of violence among adolescents with chronic delinquency.

Center for the Study and Prevention of Violence, University of Colorado at Boulder. 2004. **Blueprints for violence prevention**. Washington, DC: Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice. https://www.ncjrs.gov/pdffiles1/ojjdp/204274.pdf

The Blueprints initiative developed and implemented research-based criteria for evaluating programmes to prevent juvenile violence and delinquency. It reviewed over 600 programmes and identified 11 model programmes and 21 promising programmes that treat youth with problem behaviour and prevent violence and drug use. The Office of Juvenile Justice and Delinquency Prevention funded replications of the Blueprints programmes nationwide, providing training and technical assistance to 42 sites replicating eight of the Blueprints model violence prevention programmes and to another 105 sites (covering ca. 400 schools) implementing a model drug prevention programme. This report describes the Blueprints programmes, discusses the lessons learned about programme implementation, and provides recommendations for programmes designers, funders and implementing organisations and agencies.

Other relevant publications

Alliston L. 2012. **Alcohol-related injury: An evidence-based literature review**. Wellington: Research New Zealand. http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_providers/documents/reports_results/wpc112196.pdf

This report assesses evidence for the relationship between alcohol and injury and includes a review of interventions to address alcohol-related injury. Multi-component programmes are identified as the approach showing the clearest evidence of effectiveness to date in reducing harm in drinking environments, including violence and traffic crashes, but the report concludes that the development of interventions to reduce the impact of alcohol consumption on the incidence of injury is in its infancy.

The Independent Commission on Youth Crime and Antisocial Behaviour. 2010. **Time for a fresh start: The report of The Independent Commission on Youth Crime and Antisocial Behaviour**. London: The Police Foundation. http://www.police-foundation.org.uk/uploads/catalogerfiles/independent-commission-on-youth-crime-and-antisocial-behaviour/fresh_start.pdf

This is the report of a commission which was set up in response to concerns that large sums of money were being wasted in England and Wales because of insufficient investment on preventive measures and constructive sanctions for antisocial and criminal behaviour. It points out that the young people who commit crime are often also the victims of crime, especially assault and theft. It sets out three key principles for dealing with youth crime: prevention (addressing young people’s welfare, health and, educational needs), restoration (holding young people accountable for their actions, and expecting them to accept responsibility for their actions and offer redress or reparation to their victims), and integration (aiming to reintegrate offenders into mainstream society and using imprisonment only as a last resort) as well as an additional principle that prevention measures and sanctions should do no harm. The Chapter on prevention provides examples of effective preventive services for families, schools and communities that have been evaluated through rigorous studies in Australia, Britain, Canada, the US and Scandinavia.

More detail is contained in the companion publication to this report:
The Independent Commission on Youth Crime and Antisocial Behaviour. 2010. **Time for a new hearing**. London: The Police Foundation. http://www.police-foundation.org.uk/uploads/catalogerfiles/time-for-a-new-hearing/new_hearing.pdf

This report draws on the international evidence and proposes that a form of youth justice known as restorative youth conferencing should be introduced in England and Wales. Chapter Two outlines the existing court-based systems in England and Wales and Chapter Three examines 16 alternative forms of hearing from the UK and other countries. Chapter Four identifies four basic structural models from the international experience and states that restorative youth conferencing is the most promising of them. Chapter Five gives a final recommendation and discusses implementation issues. A detailed analysis of the 16 community panel, tribunal and court systems summarised in Chapter Three, including New Zealand's family group conferencing, can be found in Annex A which can be downloaded from this website: http://www.police-foundation.org.uk/publications/other-publications/time-for-a-new-hearing .

Dahlberg LL, Toal SB, Swahn MH, et al. 2005. **Measuring Violence-Related Attitudes, Behaviors, and Influences Among Youths: A Compendium of Assessment Tools Second Edition**. Atlanta, GA: Division of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. http://www.cdc.gov/violenceprevention/pdf/yv_compendium.pdf

This compendium is intended to provide researchers and violence prevention specialists with a set of tools to assess violence-related beliefs, behaviours, and influences, as well as to evaluate programs to prevent youth violence.

Thornton TN, Craft CA, Dahlberg LL, et al. 2002. **Best practices of youth violence prevention: A sourcebook for community action (Rev. ed.)**. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. http://www.cdc.gov/violenceprevention/pub/yv_bestpractices.html

This sourcebook was developed for individuals working to prevent youth violence and for individuals whose positions make them likely to play a role in violence prevention efforts, including those working in education, health and social services. It is based on an extensive review of the scientific literature and consultations with teachers, school administrators, members of community-based organizations, employees and volunteers at social service agencies, health department personnel, programme planners and practitioners, and researchers from universities. Chapter One covers general principles of intervention planning, implementation and evaluation. Chapter Two provides and in-depth discussion of the best practices of four key youth prevention strategies: Parent- and Family-based Strategy, Home Visiting Strategy, Social-Cognitive Strategy and Mentoring Strategy. The research evidence, where it was available, is included in the discussion, but, because of the limitations of the evidence base, the majority of the best practices presented are based on the collective experience of the intervention practitioners and evaluators.

U.S. Department of Health and Human Services. 2001. **Youth violence: A report of the Surgeon General**. Rockville, MD: US Department of Health and Human Services. http://www.ncbi.nlm.nih.gov/books/NBK44298/

This comprehensive report takes a public health perspective to summarise the research on the magnitude, causes and prevention of youth violence. Chapter five deals with the prevention of youth violence and draws mainly on seven reviews of youth violence prevention and intervention programmes, published from 1995 to 2000.

Websites

Centers for Disease Control and Prevention. **STRYVE Striving to Reduce Youth Violence Everywhere**. http://vetoviolence.cdc.gov/stryve/ accessed October 2014.

STRYVE is an initiative led by the US CDC which takes a public health approach to preventing youth violence. Their web site has an on-line training section and a variety of resources related to youth violence prevention.

Center for the Study and Prevention of Violence, University of Colorado at Boulder. 2014. **Blueprints for Healthy Youth Development**. http://www.blueprintsprograms.com/ accessed October 2014.

Blueprints is project which identifies prevention and intervention programmes that meet strict scientific standards of programme effectiveness. This site has a programme selector (go to the program search page) which can be used to find programmes addressing various problem behaviours, including anti-social aggressive behaviour and violence. Using the selector will produce a table summarising programmes meeting the search criteria, rating their effectiveness as either Model or Promising, providing information on benefits and costs and identifying the areas of impact. The table contains links for each programme's information (including the relevant research literature), target population, funding strategies and benefits and costs.

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