

Suicide of Children and Youth in the NT 2006–2010

Public Release Report

for the
Child Deaths Review and Prevention Committee



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Declaration:

A report into suicide deaths of NT children and adolescents from 2006-2010 was prepared for the Child Deaths Review and Prevention Committee in 2011. This version of that report has been prepared for public release and has omitted or modified content in order to protect the privacy of individuals and families.

Ethics approval for the study was granted by the Joint Institutional Human Research Ethics Committee of the Northern Territory Department of Health and the Menzies School of Health Research on 15/6/2011, approval no. 11-1597.

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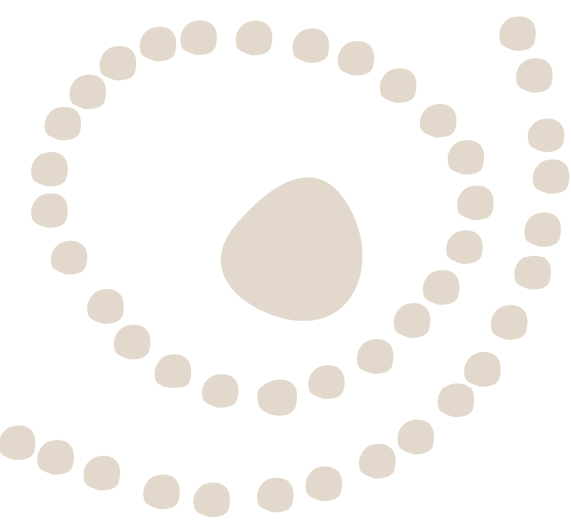
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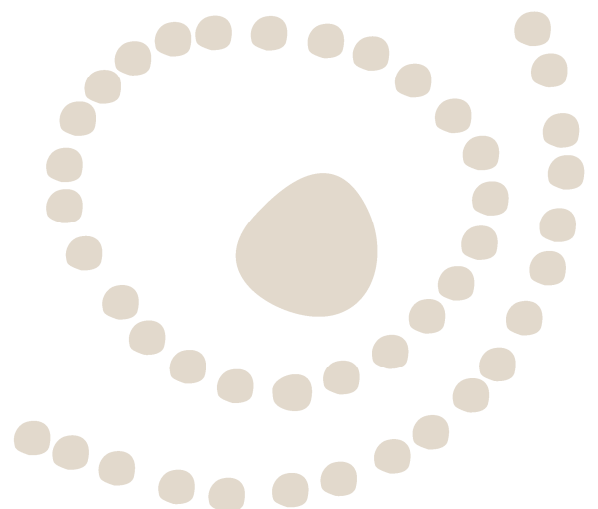
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Acronyms Used in this Document

ADSCA	Alcohol and Drugs Service of Central Australia
CAYLUS	Central Australian Youth Link Up Service
CDR&PC	Child Deaths Review and Prevention Committee
NCIS	National Coroners Information System
NPY	Ngaanyatjarra Pitjantjatjara Yankunytjatjara
NT DCF	Northern Territory Department of Children and Families
NT DET	Northern Territory Department of Education and Training
NT DH	Northern Territory Department of Health
RCIADIC	Royal Commission into Aboriginal Deaths in Custody

1. Introduction

This report into recent suicide deaths of children and young people under 18 years of age in the Northern Territory was commissioned by the Convenor of the Northern Territory's Child Deaths Review and Prevention Committee (CDR&PC) in May 2011. The Committee's 2010 report (NT CDRPC, 2010) had presented a preliminary analysis of child deaths resulting from intentional self-harm suggesting that in the period from 2006 to 2008, NT death rates for intentional self-harm among Indigenous children were significantly in excess of jurisdictions such as QLD and NSW. Consequently, the Committee commissioned researchers at the Menzies School of Health Research to investigate recent child deaths by suicide in the NT.

1.1 Aims and Objectives

By agreement with the Child Deaths Review and Prevention Committee, the aims of the study were defined as follows:

- Document the recent trends in child and youth suicide deaths in the Northern Territory.
- Document the occurrence and relative influence of factors elevating the risk of suicide.
- Establish what evidence exists of 'suicide clusters' and the nature of any socially mediated 'contagion' factors.
- Investigate the feasibility and requirements of data linkages to improve the monitoring and evaluation of suicide deaths in the Northern Territory.
- To provide a concise review of the literature on suicidal behaviour and prevention relevant to the particular characteristics of child and youth suicide deaths in the Northern Territory.

An expert advisory group was established to assist the investigators:

Associate Professor Tricia Nagel, Healing & Resilience, Menzies School of Health Research

Dr Kate Senior, Healing & Resilience, Menzies School of Health Research

Dr Gurmeet Singh, Child Health Division, Menzies School of Health Research

Sarah O'Regan & Richard Ashburner, Mental Health Branch, NT Department of Health.

1.2 Methodology

A retrospective audit of suicides of all persons under 18 years of age for the period from 2006 to 2010 was conducted. For this purpose a protocol for the audit was developed, based on one that had been tested in other jurisdictions (Hillman et al., 2000) and used in the Northern Territory (Parker, 1999). The protocol was modified to reflect the age of the study population and the interest in capturing a wide range of contextual information in the records. Sources such as professional (police, medical, mental health) assessments of mental health issues were included as well as assessments by family members or other witnesses. A copy of the protocol can be provided upon request.

The protocol was initially piloted using the coronial files for three cases to enable revision of the instrument for the younger study population. A full audit of coronial

files for all cases of child and youth suicide between 2006 and 2010 was conducted on a total of 18 cases.

After the audit was completed, the data were entered into an SPSS data file and cleaned. Missing or miscoded data were identified and clarified by manually checking the coronial files. Additional data were requested from the NT Department of Health, the NT Department of Education, the NT Department of Children and Families and from the National Coroner's Information Service (NCIS).¹ The records obtained from these sources were linked to the audit data using identifying variables (name, date of birth, date of death, residence) to form the complete dataset. This dataset was then subjected to descriptive univariate and bivariate analyses and tabulation in SPSS. In addition to coding of audit data for quantitative analysis (see Section 5), detailed notes were recorded for each suicide that were then analysed in conjunction with the descriptive statistics based on audit data (see Section 6).

A literature search was conducted, targeting studies investigating the main determinants of child and adolescent suicide as well as studies relating to Indigenous, child and youth suicides in Australia and comparable postcolonial contexts, such as New Zealand, the United States of America and Canada. This review of evidence was used to refine the design of the coding instrument used for the audit as well as interpreting its results.

The initial criteria for selection of cases for this study were that the cause of death was suicide, that the death had occurred in the Northern Territory between 2006 and 2010 inclusive and that the deceased was younger than 18 years of age at the time of death. The study population was checked against NCIS records to ensure that the selection of coronial files adhered to the criteria outlined.

Some limitations to these selection criteria should be noted. For deaths due to external causes and where the injury is alleged to be self-inflicted, a primary task of coronial investigations is to determine intent, which allows a death to be classified as suicide (Allen, 2000). Ambiguities involved in classifying some deaths by external causes can mean that suicides may be hidden in other categories (Cantor and Neulinger, 2000: 371; Pridmore and Fujiyama, 2009: 1129). These other deaths may share common aetiologies with suicides. In a review of adolescent suicides and risk-taking deaths conducted for the NSW Child Death Review team, Sankey and Lawrence (2005) concluded that suicides and risk-taking deaths or deaths by misadventure are not homogeneous groupings and share determining causes. There are good reasons for including risk-taking deaths or other deaths classified as accidental or unintentionally self-inflicted deaths in suicide research (Hawton and Heeringen, 2000; Sankey and Lawrence, 2005; Ward and Nelson, 2008). Some suicides may be classed as deaths by misadventure: these may include single vehicle accidents, pedestrian fatalities, electrocutions or poisonings. For the purposes of this study, we have restricted our investigation to cases where suicide is identified as the cause of death in the coronial findings.

A further note is needed to guide interpretation of the findings of the audit. While the coronial files audited contain valuable information on each of the cases in the study,

¹ The NCIS database was developed and designed to provide a standardised format for collecting and retrieving coronial findings. It was approved by the Standing Committee of Attorneys-General and other Ministerial Councils in 1997. The NCIS now has data from all coronial investigations across Australia since 2000. The NCIS database is now managed by the Victorian Institute of Forensic Medicine. See: http://www.ncis.org.au/web_pages/historical_background.htm.

the information compiled is determined by the priorities of forensic investigation. This affects different categories of information differently. While age, place and time of death and toxicology reports provide a standardised and reliable summary of facts in evidence at time of death, reports of precipitants, stressors or psychological difficulties are much less comparable across cases because of the varied focus of investigation in different settings, the variable information available through witnesses interviewed and the widely varying extent, quality and completeness of other information provided to investigating police or the Deputy Coroner by services and agencies. Two important reasons for this variability are that: a) many individuals from different ethnic backgrounds and in different regions are very low users of services, with far less recorded about them; b) there is no standardised reporting of information from health, child protection, educational and other records to the Coroner for reported suicide. While we infer problems such as family difficulty from the records, these are indicative, qualitative judgements based on the balance of available information, rather than inferences drawn from standardised responses. Explanatory notes are provided to assist the reader where appropriate.

Finally, a note is needed concerning classification of Indigenous status. In most cases, the Coroner's findings indicated Indigenous status. In a number of cases, this was not stated in findings, but facts rendered Indigenous status self-evident. In two cases, Indigenous status was identifiable in witness statements but was not acknowledged in NCIS data. These cases have been treated as Indigenous in this report.

This report aims to carefully consider a limited number of individual cases in their specific contexts. It presents a brief overview of existing data on suicide in the NT followed by a selective review of Australian and International literature on suicide, including suicide among Indigenous peoples. These are followed by a presentation of findings of the audit of coronial records and an analysis of indicated themes. Sections 7 & 8 discuss options for prevention arising from the report.

2. Suicide in the Northern Territory

There has been a significant increase in completed suicides and attempted suicides in the NT since the beginning of 1980s when suicide rates were similar to – and for the NT Indigenous population, lower than – those for the Australian population as a whole .

Between 1981 and 2002, NT rates of suicide were increasing annually by 18.4% for Indigenous residents, by 1.8% for non-Indigenous residents and by 0.15% for the Australian population (Measey et al., 2006: 316). The increase has been most pronounced among Aboriginal males, which rose from less than half the Australian male suicide rate, to over three times the rate for all Australian males in 2001-2. Similarly, the Indigenous female rate rose from no reported incidence to double the national rate (albeit within the statistical margin for error due to small numbers). The authors of the NT study report that, “the overall rate of suicide increased among both Indigenous males and females, with annual average increases of 17.4% (95% CI, 12.9%-20.8%) for males and 25.8% (95% CI, 12.2%-41.0%) for females” (Measey et al., 2006: 316). Much smaller rates of increase were recorded among non-Indigenous males and females for the same period.

For the period 1981-2002, the Indigenous and (to a lesser extent) non-Indigenous rates of suicide in the 10-24 years age group were also significantly higher than for Australia as a whole. The male to female ratio for Indigenous suicides in that age group was, at 3.95:1, lower than for older age groups, and the female rates generally declined from the youngest age group throughout each subsequent age (Measey et al., 2006: 317). The gap between NT Indigenous and Australian suicide rates for children and youth appears to have been increasing: according to Pridmore and Fujiyama (2009: 1129), for the period 2001 – 2006 the NT Indigenous rate for children under 15 years old was 5 times the Australian rate (with no cases recorded for NT non-Indigenous children), and the rate for young people from 15-24 years was 3.5 times the Australian rate. The most recent data provided by the NT Department of Health (Table 1) clearly shows an increasing rate of child and adolescent deaths over the last decade; while much lower than the rate for young adults it is possible that it is continuing to increase.

Table 1: NT suicide rates per 100,000 by Indigenous status and age

	Age	2001-2005	2006-2010
Indigenous	10-17	18.8	30.1
	18-24	99.9	69.9
Non-Indigenous	10-17	4.1	1.3
	18-24	21.5	13.0

Sources: NCIS deaths data; ABS population data; Health Gains Planning Branch, NT DoH.

There is evidence of clustering of suicides by community, and in groups within communities, especially in Top End communities (Davidson, 2003; Hanssens, 2008b; Parker and Ben-Tovim, 2002). For example, based on an audit of coronial records, Parker (1999) documented a steep rise in completed suicide among males on the Tiwi Islands in the late 1990s. These included four cases of suicide at Nguuu, Bathurst Island in a single year that were the subject of coronial inquest in 1999 (Northern Territory Coroner, 1999).

Davidson's (2003: 30) study of emergency presentations for near-hanging to Royal Darwin Hospital found that, in the context of an 800% increase of admissions for near-hanging among Indigenous males since the 1980s, Tiwi males from Bathurst and Melville Islands constituted 62% of the total number of near-hangings among 45 cases from rural-remote areas. In fact, the data understate the prevalence of self-harm and suicide attempts on the Tiwi Islands. For example, attempted suicide by electrocution was at least as frequent as attempted hanging during much of this period (until devices to prevent climbing electricity pylons were installed), although not necessarily leading to hospitalisation with the same frequency. A recently published report indicates that there has been a doubling of reported suicide attempts and self-harm in scheduled communities of the NT Emergency Response from 2007/8 – 2010/11 (FaCHSIA, 2011). However, self-harm and suicide attempts remain under-reported, so that it is difficult to know to what extent these changes reflect increased gathering of information and whether they reflect any degree of change in underlying incidence of attempted suicide and self-harm.

Overall, the picture has clearly emerged of a widespread increase of suicide and self-harm across the Indigenous population of the NT, with peaks or clusters in specific communities or regions. In the last decade, this has included a significant increase in suicides by persons 17 years and younger. There is concern that the prevalence of suicide in young adulthood has produced tendencies to imitation or contagion affecting children and youth and that clustering may reflect the coincidence of other factors affecting vulnerable children in many communities for example, high levels of alcohol or drug abuse, and abuse or neglect affecting children. These concerns are in the main based on practical knowledge in the field and have not yet been systematically studied. There is a need for more thorough investigation of mechanisms underlying the aggregation of suicide risk in communities and populations, especially in relation to suicides and other deaths by external causes among adolescent and preadolescent children.

3. Overview of Evidence

This section offers a selective summary of evidence pertinent to an understanding of child and youth suicide. It draws on international research on general patterns and risk relating to child and youth suicide that provides important guidance for understanding Indigenous suicide.

3.1 Child and Youth Suicide

Beautrais' (2000) review of research on risk factors for child and youth suicide showed that the following factors increase the risk of suicidal behaviour in youth: social and educational disadvantage; childhood and family adversity; impaired parenting; psychopathology; individual and personal vulnerabilities; exposure to stressful life events and circumstances; and social, cultural and contextual factors. A suicide rate is the result of combinations or interactions between a number of these risk domains for a population that may show considerable variation across contexts and within subgroups or communities (Beautrais, 2000). In a 10 year retrospective study of 61 suicide deaths of children under 15 in New Zealand coronial records, Beautrais noted that "the impression of young adolescent suicide was of a disadvantaged, vulnerable and distressed group of adolescents growing up in extremely difficult circumstances" (2001: 647). She noted that males (72.1%) and Maori (57.4%) predominate in this group, with evidence of clustering (Beautrais, 2001). She concludes that there is a need for "in-depth investigation of the familial and social circumstances of young adolescents who die by suicide" (Beautrais, 2001: 651).

3.2 Families and Suicide

International research is now clear about which family factors amplify the risk of child and youth suicide: suicides, suicide attempts and suicide ideation among family members; family psychopathology and conduct disorder; abuse and neglect; family violence; substance abuse and socio-economic status. According to Brent, "family studies have conclusively shown that suicidal behaviour runs in families" (2010: 260). This has been demonstrated both in large scale population studies and studies of clinical populations. Both suicide completion and suicide attempts by family members contribute to increased risk of suicide among youth. Moreover, the higher the family suicide loading, in terms of frequency of suicide attempts and threats, the higher the risk (Brent, 2010). In a large scale population register study (n=14,440; matched controls, 144,400), Mittendorfer-Rutz (2008: 28) found that among the strongest independent familial risk factors for youth suicide attempts were a suicide attempt by sibling (OR 3.4; 2.8-4.1), mother (OR 1.9; 1.6-2.3) and father (OR 1.9; 1.7-2.1). Other familial factors included substance abuse, conduct disorders and psychopathology of family members, and "strong interactions were observed between psychopathology in index subjects and familial suicidality" (Mittendorfer-Rutz et al., 2008: 28). A study of 365 parents with mood disorders followed up over 6 years found that suicide risk is multifactorial, and that not only parents' history of suicide attempts, but parents' own history of sexual abuse also independently contribute to suicide risk in children (Brent and Melhem, 2008; Melhem et al., 2007).

The contribution of family suicidal behaviour exists independently, even when adjustment is made for the transmission of mental illness (Brent, 2010; Goodwin et al., 2004; Mittendorfer-Rutz et al., 2008). In a study of US National Comorbidity

Survey data, Goodwin and colleagues tested a causal chain “in which (a) parental suicidal ideation is associated with increased mental health problems in offspring; and (b) increased mental health problems are associated with increased risk of suicidal ideation and suicide attempt” (Goodwin et al., 2004: 163). According to this explanation, there should be no correlation between parent suicidality and suicidality in children when adjustment is made for mental health problems. In fact, this is not the case. While there is some effect when adjustment is made for mental illness, such that a component of the transmission of suicidality from parent to offspring is likely to be mediated by intervening mental health factors, the evidence suggests that there is “a specific association in which suicidality of the parent leads to suicidality in the offspring” (Goodwin et al., 2004: 163). Suicide ideation and suicide attempt in a parent increases the likelihood of suicide ideation and attempt in offspring; while parental suicide ideation by itself has a weak association with suicide attempts in the young (Goodwin et al., 2004).

There is evidence that certain factors contribute to early onset of suicide attempts, and thus may be relevant for a rise in rates of suicide among the young. According to Melhem, et al. “precursors of early-onset suicidal behaviour include mood disorder and impulsive aggression as well as parental history of suicide attempt, sexual abuse, and self-reported depression” (2007: 1364). A higher loading of family suicidal behaviour contributes to early onset of suicidal behaviour in offspring; and sexual abuse in either parent or child are each important causes of early onset of child suicide attempts (Bronisch and Lieb, 2008; Roy and Janal, 2005). Impulsive aggression is highly associated both with early onset and with the experience of sexual abuse and early trauma (Bronisch and Lieb, 2008; Zalsman et al., 2008).

3.3 Childhood Trauma and Intervention

Other dimensions of family risk are clearly implicated in both the risk and onset of suicidality in youth and are reflected in studies of the impact of exposure to trauma, neglect and abuse and experience of out-of-home care (Beautrais, 2001). In a national register study of over one million people, Vinnerljung and others (2006) found that former child welfare clients were four to five times more likely than peers in the general population to have been hospitalised for suicide attempts and five to eight times more likely to have been hospitalised with psychiatric disorders in their teens as well as in young adulthood, with those in long term foster care having the worst outcomes. Even adjusting for parent mental illness, substance abuse and socio-economic status, the excess risks remained about twofold. The authors conclude that irrespective of causality, former welfare clients are a high risk group for suicide attempts and psychiatric morbidity, with implications for prevention.

Numerous studies have shown that early onset of suicidality may be influenced by childhood trauma. Based on a study of 280 substance dependent patients, Roy concluded that “the combination of a family history of suicide and childhood trauma may represent a correlate of increased risk of attempting suicide, attempting earlier and making more attempts” (2011: 205). Another study of 1553 prisoners identified 200 with a history of suicide attempts (Mandelli et al., 2011). The latter group had significantly higher scores on an assessment of childhood trauma, and childhood trauma was significantly associated with early onset of suicide behaviour. Early onset of suicide behaviour was in turn associated with repetition of suicide attempts (Mandelli et al., 2011). A longitudinal population study of new onset cases of suicide ideation and suicide attempts showed that both childhood abuse and multiple childhood adversities are strongly associated with future suicidal behaviour, after

controlling for the effect of mental disorders (Enns et al., 2006). A case-control study of adolescent suicide attempters found that factors such as number of residential relocations (living with relatives, foster-carers, neighbours or an institution), lack of an emotional significant other, number of fail grades (probably as an indicator of instability in living) accounted for 77% of variance between cases (attempters) and controls; the authors conclude that "the early life experiences of suicidal adolescents were more chaotic and disruptive than those of the non-suicidal adolescents" (Grossi and Violato, 1992: 412).

Strong associations between sexual abuse and later suicide attempts – independent of or mediated by the presence of psychopathology – are well established: in an analysis of US National Comorbidity Survey data, the highest probability of a first attempt during early adolescence was among those with both a history of sexual abuse and lifetime disorder (affective disorder or PTSD), with suicide attempt occurring 8-12 years later for those suffering abuse only (Molnar et al., 2001). In a study of 1889 substance-dependent patients, Roy and Janal (2005) found that female sex, childhood trauma and a family history of suicidal behaviour are each independent and non-interacting risk factors for attempting suicide. There is firm evidence that child abuse in the parents' childhood contributes to the risk of suicide by their children, either through the elevated risk of sexual abuse of the children, or through parental suicidal behaviour and psychopathology, or both (Melhem et al., 2007). The relationship between sexual abuse, homelessness, substance misuse and suicidal behaviour in both female and male adolescents is strongly supported both in general and in Indigenous populations (Molnar et al., 2001; Browne and Finkelhor, 1986; Pearce et al., 2008).

3.4 Family Functioning, Psychopathology and School Drop-out

These findings point to the importance of the quality of family environments in relation to suicide outcomes. Although an association between parenting styles and suicide risk has not been demonstrated at the population level (Enns et al., 2006), numerous studies have pointed to the significance of parenting among at risk populations. A case-comparison study of adolescents in a clinical population showed that suicidal and non-suicidal adolescents differentiated in terms of attachment and developmental histories and that certain patterns of early insecure attachment were related to suicidality in adolescence (Violato and Arato, 2004). Links between fearful and preoccupied internalised attachment patterns and suicidality have been identified (Lessard and Moretti, 1998). A number of research studies of clinical populations show that characteristics of family environments affect suicidal behaviour among adolescents and preadolescents. Affectionless control and unempathic maternal parenting were associated with suicide risk in a New Zealand study (Fergusson and Lynskey, 1995). Suicide attempters were found to have families with blurred intergenerational boundaries in which children are exposed to suicidal tendencies in others. Their families were chaotic or disengaged and ineffective in acknowledging much less managing children's withdrawn or externalising behaviours. For children with externalising tendencies there were often violent escalations that preceded suicidal behaviour (Pfeffer, 1981; Violato and Arato, 2004).

A longitudinal study of a community sample in New York showed that maladaptive parenting and childhood maltreatment were associated with severe interpersonal difficulties during middle adolescence and for suicide attempts during later adolescence and young adulthood (Johnson et al., 2002). The authors maintain that "children who experience high levels of maladaptive parenting or child abuse may

have difficulty in developing social skills that are essential for the maintenance of healthy relationships with peers and adults” (Johnson et al., 2002: 747). They suggest that it is possible “to develop improved interventions for individuals who are at high risk of suicide by identifying combinations of risk factors that are associated with the onset of suicidal behaviour” (Johnson et al., 2002: 744).

Aggressive-impulsive behaviour is an important feature of both parent and adolescent psychopathology and conduct underlying suicidal behaviour. In a study by Pfeffer and others (1989), suicidal-only children were characterised by depression and suicidal-assaultive children were characterised by anger and violence. A recent study of internalising and externalising behaviours showed that impulsivity leads to suicide ideation and attempts indirectly, through a path from aggression to depression, so that the effects of impulsivity and aggression are not limited to impulsive, unplanned suicide without ideation or intent (Greening et al., 2008). A controlled study of the familial aggregation of adolescent suicide attempts concluded that not only did transmission of suicidality occur independently of affective and psychotic disorders in the parent, but that assaultiveness and personality disorder were related to the familial aggregation of suicide attempts (Johnson et al., 1998). The findings of many studies point to strong associations between conduct disorder, violence or assaultiveness and impulsive acting out that interact with mental illness of parents and offspring to produce elevated suicide risk. The evidence is increasingly clear that suicide is strongly associated with externalising psychopathology: substance abuse disorders and antisocial personality disorders (Hills et al., 2005).

For adolescents, school performance and school failure represent important dimensions of experience. Studies show that children with learning and reading disorders are at higher risk of suicide (Daniel et al., 2006). Studies of young people at high risk of failure or drop-out, based on attendance, achievement and behaviour, have shown parent-child conflict and stressors related to family functioning to be highly predictive of suicide risk for this population: “the higher the level of perceived family conflict, family depression, and family AOD [alcohol and other drug] use, the greater the level of suicide-risk behaviour. Correspondingly, the higher the perceived amount of support for school, support availability for feelings of depression and suicidal thoughts, and general support satisfaction, the lower the level of risk for suicide” (Randell et al., 2006: 264). In the NT context, it should not be assumed that lower school retention, achievement levels and low expectations about academic success in some communities necessarily reduce the significance of school drop-out and related conflict with families. On the contrary, a lack of support through the transition from school almost certainly constitutes a source of risk for youths vulnerable to suicide.

3.5 Developmental Considerations and Precipitants of Suicide

Child or pre-adolescent suicide is uncommon (Cantor and Neulinger, 2000; Gould et al., 2006; Steele and Doey, 2007). Between 1969 and 1978 the annual rate of suicide for children under 14 in Australia was 0.3 per 100,000 (Kosky, 1982). In the US, the rate of suicide for children aged 5 to 14 years in 1996 was 0.8 per 100,000 (Pfeffer, 2000). The pre-adolescent male to female ratio for completed suicides in Australia, the USA and Canada ranged from 4:1 to 2:1 suggesting that gender differences in suicides may be less pronounced for children compared to adolescents (Dervic et al., 2008: 272; Kosky, 1982; Pfeffer, 2000). Steele & Doey (2007: 24S) cite studies suggesting that deliberate self-harm is 4-5 times more common for girls than for boys under the age of 15 years, indicating that there may be different relationships

between ideation, threats and attempts for boys and girls. Risks rise with age as suicidal behaviour becomes part of a life pattern: "Children and adolescents who attempt suicide are at risk for completed suicide, violent death, or a poor psychosocial outcome 5 to 10 years after the first attempt, with boys having worse outcomes" (Steele and Doey, 2007: 29S). The peak years for youth suicide attempts are 16-18, after which the frequency of attempts, particularly by females, declines (Steele and Doey, 2007: 24S). Among males, externalising behaviours including substance abuse rise from 11 through 21, coinciding with rising suicide risk; disruptive behaviour disorders are less clearly associated with rising suicide risk (Conner and Goldston, 2007). For internalising behaviours (depression, anxiety and social withdrawal) the prevalence of depression increases from 11 to 16 years, while onset of anxiety disorder is more likely to be in later adolescence, with a less clear association to suicide risk. The potential for lethal violence rises during adolescence and is associated with suicide attempts; critical factors include the availability of lethal means (Conner and Goldston, 2007). Suicide risk is shaped throughout adolescence into young adulthood by an interaction between developmental failures – such as educational failure or school drop-out, failed transition to work or other post-school employment, inability to realise romantic relationships – and both substance abuse and depression.

Among children and young adolescents, precipitants are less easily identifiable and childhood suicide is often characterised by a brief stress-suicide interval (Dervic et al., 2008: 277). In an audit of 30 suicides by 12-14 year olds, Shaffer (1974) found that the most common precipitants (11 cases, 36%) were a 'disciplinary crisis', such as punishment or trouble with teachers or police with impending disclosure to parents; fights or conflict with peers (4 cases) with close friend of opposite sex (3 cases); or conflict with a parent (3 cases), with 2 further cases of conflict with a psychotic parent. For older children 15 and above, symptoms of depression, anxiety disorders and suicide ideation are increasingly present (Gould et al., 2006), while for older adolescents and young adults, significantly challenging life course developments, such as a stigmatised sexual identity, interpersonal conflict and loss, or conflict in love relationships, along with comorbidity of mood disorder and substance abuse are common precipitants of suicide (Graham et al., 2000: 6). Stressors including lawbreaking, school failure, bullying or humiliation may be among the precipitating circumstances for older youth and young adults (Steele and Doey, 2007: 26S-7S).

Some forms of clustering of suicide are interpreted to reflect the influence of "contagion" as a precipitating influence on suicides and suicide attempts (Steele and Doey, 2007). Gould has reviewed the evidence for impacts of media representations of suicides: these are mainly encountered among teenagers and young adults. The evidence suggests that suicide contagion has a real, if modest effect (Gould et al., 1989; Gould et al., 1990a; Gould et al., 1990b). However, it is important to consider other dimensions of contagion or clustering than media representation. Kreitman (1969) analysed the over-representation of suicides among kin and social networks in Edinburgh and concluded that suicide attempts may constitute a 'language' of distress that resonates through social networks, contributing to higher risk of similar action in others who are vulnerable. These effects may amplify the impacts of suicidal behaviour and deaths in families of adolescents across and within generations of related persons. Studies in the general population suggest that proximal exposure to suicide in family and in peer social networks is the most important mechanism of suicide clusters (de Leo and Heller, 2008; Hazell, 1993: 659; Robbins and Conroy, 1983; Wilde, 2000: 253).

4. Indigenous Suicide

In countries like Australia, New Zealand, Canada and The United States of America, not only are there similarities in the overall patterns of suicide (Cantor et al., 1996), but their histories as post-colonial nations gives them a common concern for Indigenous suicide (Hunter and Harvey, 2002). In Australia, Canada, the USA and New Zealand, the highest youth suicide rates occur in the Indigenous population and have been increasing as rates flattened or declined for the mainstream youth population (Gould et al., 2006; Beautrais, 2001; Hunter and Milroy, 2006). The clustering or aggregation of suicides in NT communities and families has been confirmed by analysis of records and statistical analysis (Hanssens, 2010; 2008b; 2008a). This is now a pressing public health concern.

4.1 Explaining the Rise in Indigenous Child and Youth Suicides

The Royal Commission into Aboriginal Deaths in Custody (RCIADIC) was the catalyst for concern about suicide among Aboriginal youth in Australia. However, the increasing rate of Indigenous suicide can not be explained by policing and the over-representation of Aboriginal youth in jails. Hunter's study of suicide in the Kimberley emphasised the influence of rapid social change in the 1970's including rising cash incomes and mobility, and above all a rapid increase in access to alcohol (Hunter, 1988; 1991). This produced a serious deterioration in the quality of childrearing, parenting and early object relationships, leading to a higher incidence of psychopathology and elevated risk of suicide in these children as they reached adolescence (Hunter, 1999; Hunter, 1993). In his analysis of NT suicides, Parker (1999) concurred with the centrality of the impact of alcohol use on parenting and family relationships experienced by the generation of adolescents and young adults committing suicide on the Tiwi islands. At a community level, this trend established and reproduced conditions of vulnerability followed by what Hunter and colleagues called a pattern of "widespread heavy drinking and its attendant endangering behaviours among the most vulnerable" (1999: 87). In these circumstances, early vulnerability led to heightened risk of suicide.

The pattern of risk established in early childhood is compounded by ongoing stress within families related to alcohol and cannabis misuse by parents and young adults within many households, ongoing family violence and the failure of many youth to sustain social connection through education, work or other productive activity. All of these factors condition the prevalence of suicide across communities. Demographic trends coupled with breakdown of traditional patterns of family authority contribute to the stressors: rising fertility rates at younger ages put additional stress on childrearing and parenting, and eventually contribute to increased destructive competition for diminished social resources among members of larger adolescent cohorts (Hunter and Harvey, 2002; Robinson, 2005b). Young parents command less social resources within families and are less able to support their children within unstable household situations. Substance misuse among teenage parents contributes to the deterioration of childrearing quality for many children. Current demographic trends indicate that although fertility rates are falling, there will continue to be a secular increase in births to young females, producing increasing pressure on the capacities of young parents and families to care for children (Silburn et al., 2011).

The strength of evidence about family transmission of suicide suggests that it may be possible to specify mechanisms for the rapid increases in rates of suicide and the clustering of suicides within Aboriginal communities. These include the following:

1. Exposure of Indigenous people to multiple sources of adversity, beginning in early child development and including impaired parenting, neglect and abuse, early loss, chaotic family situations and changes of caregiver, with adversities recurring throughout later development;
2. Exposure to high levels of early stress related to impaired impulse control and poor tolerance of stress;
3. Exposure of children to family and network burden of suicide: suicide threats, attempts and completions by parents and other related kin;
4. Adolescents attempting suicide impulsively reacting to criticism, rejection or attack by kin (including refusal to meet demands for money or other items); reacting to conflict in relationships with boy- or girlfriends;
5. Adolescents and young adults, including young parents, threatening suicide in the course of conflicts relating to demands over access to money, alcohol or marijuana;
6. Young males mainly in 20-35 year age group in crises of attainment relating to failure in relationships, lack of employment and opportunity, trouble with police and other issues in contexts of chronic heavy drinking and substance abuse.

As the burden of suicide grows among young adults, there is increasing exposure of children to suicide threats and attempts in the course of daily conflict, commonly relating to alcohol and marijuana, but extending to love relationships and even seemingly petty domestic quarrels. In the course of an early intervention program on the Tiwi Islands attended by over 100 parents and children from 4 – 10 years, Robinson reported that referrals to the program for behavioural problems in one year in a single community included over five children whose fathers had committed suicide in previous years. He also recorded numerous cases in which children as young as four years threatened to hang themselves (Robinson, 2005b; 2008; Robinson and Tyler, 2006; Robinson et al., 2009). In all cases in which children threatened suicide, there was evidence that parents had threatened suicide in the presence of their children. Some parents disclosed that, when under stress, they had used suicide threats as an attempt to control or discipline children. Threats of abandonment by parents under stress were common. These children had also witnessed older siblings, cousins and uncles threaten or attempt suicide.

In numerous cases reported by Robinson, suicides threats made by children were attempts to control parental behaviour, including parents' drinking, violence between parents, a parent's entry into sexual relationships with a new partner after separation from or the death of the child's other parent (Robinson, 2005a). Numerous children verbally threatened suicide in an apparent echo of their parents' threats to commit suicide (Robinson and Tyler, 2006). Although suicidal intent, in the sense of the intent to die on the part of the young child may not be present, such actions should be counted as a form of suicidal behaviour that provides an indication of risk for future impulsive acting out. It should not be taken for granted that the consequences of suicide and the absoluteness of death are not unknown to young Aboriginal people so frequently exposed to death, mourning and the permanent absence of people lost to suicide.

While general exposure to suicide in communities creates the conditions for modelling and imitation of suicidal behaviour among young people, it is suggested that the rapid escalation of suicide rates among youth and preadolescent children

already exposed to some degree of neglect or trauma may be most powerfully influenced by the frequency of suicide threats and attempts within families and households, and of suicide completions in families and within related social networks. In such circumstances of risk, clustering of suicide and suicide among young people over time may not always require imitation of specific “index” suicides. In fact, perhaps seemingly paradoxically, a suicide within a family network may not only increase risk; it may also increase vigilance in the deceased person’s family and social network, at least for a time. Prior experience of suicidal behaviour in interpersonal conflict combined with the many antecedent difficulties in individuals, families and their relationships may be the most important general preconditions of serious suicide attempts by young people.

The echoing of suicide threats and attempts between parents and children has also been observed in desert communities (McCoy, 2008: 114-5). Further, McCoy has pointed out that contemporary suicide for young Aboriginal males reflects a breakdown of protective features of traditional male relationships of authority and control which no longer “hold” – contain, direct, channel – young men’s conflicted strivings for autonomy. This includes a breakdown of the roles of fathers in social and family life (McCoy, 2008; Robinson, 1990). Self-harm and suicide attempts involve coping mechanisms in which overt and dramatic emotional expression is a form of appeal for response on the part of significant others, senior figures within kin and family groupings; they can be a cry for justice when a person has been publicly wronged (Robinson, 1990; 1995; Sansom, 1980). In early adulthood, the possibility of childbearing and motherhood undoubtedly becomes a protective factor for young females, notwithstanding reported instances of suicide threats by young Tiwi mothers (Robinson et al., 2009). Moreover, there is ample evidence that traditional controls over adolescent sexuality are in conflict with emerging patterns of youthful love relationship.

Patterns of expressive action involving self-harm can not be understood solely as breakdown or discontinuity, but may still reflect continuity with traditional social forms. Numerous authors have noted that suicide may become an idiom of communication of distress that may include many traditional contributing elements (Reser, 1991: 76). Contemporary self-harm, including suicide attempts, represents some degree of persistence of traditional elements of self-expression and communication that may resemble traditional mourning practices. They include both personal expressions of distress and the ritualisation of self-harmful gestures in the course of open public display. The persistence of traditional elements and motivations has been described in many contexts, both in remote communities in NT, QLD and WA and in longer settled areas of NSW (Robinson, 1990; Hunter et al., 1999; McCoy, 2007; 2008; Farrelly and Francis, 2009; Cox, 2010). These styles of communication and interaction within familial, peer and social networks contribute to the mechanisms of transmission of ideas and practices that lie behind the “contagion” described by numerous authors (Hanssens, 2008b; Parker, 1999). However, while contributing to elevated vulnerability of members of communities, social networks and families, these communicative patterns do not by themselves explain the suicide trend, or the causes of suicide in the individual case.

4.2 Distribution of Suicide

It has been observed that suicide in Indigenous communities is unevenly distributed across place and time: significant differences in incidence within communities have been noted in British Columbia, Canada (Chandler and Lalonde, 1998; Kirmayer et

al., 2000; Chandler et al., 2003), Native American subgroups (Novins et al., 1999), Far North Queensland (Hunter et al., 1999) and the Top End of the Northern Territory (Parker, 1999; Parker and Ben-Tovim, 2002).

In a study of suicide in British Columbia, Canada, Chandler and Lalonde (1998; Chandler et al., 2003) found that the occurrence of suicide in communities negatively correlated with the presence of factors associated with what Kirmayer (2000) called “local control”. The more local control – in community governance, services, education, as well as cultural factors such as language use – the less suicide occurred in a community. The findings do not appear to explain the Northern Territory’s experience, in that many communities with high suicide rates could be seen as being high in cultural continuity and local control, at least in terms of language, land rights and other factors identified by Chandler and Lalonde. What the authors refer to as cultural continuity or discontinuity may need to be found in other dimensions of social change and community empowerment, rather than in obvious indices of political self-determination, rights and community governance. While the language of cultural continuity is appealing, the political epidemiology of local control may not identify important causes or mechanisms of aggregation of risk of suicide.

In a study based on a report commissioned by a Canadian Royal Commission into Aboriginal Peoples, Kirmayer (1994) pointed out that not only were there marked regional variations in suicide rates among Indigenous Canadians across the nation but also marked variations between communities in the same regions. There also appear to be wide variations in salience of some determinants: demographic factors such as the size of adolescent cohorts (which is correlated with suicide risk in national populations), appear to be associated with high rates of suicide in some Indigenous regions but not clearly so in others (Kirmayer, 1994: 14-5); neither the degree of traditional orientation nor of acculturation is associated with suicide, *per se*, while closeness to and integration with major mainstream populations are associated with high suicide rates in some contexts but not in others. In short, the influences of persisting cultural tradition, acculturation and social change and social disorganisation are multi-layered, and interact in complex ways; they can not be reduced to simple factors correlated with the presence or absence of suicide risk in populations or communities (Kirmayer, 1994: 25-30). Associations with “culture” often mask associations with familial and other relationships and specific histories of adversity that are more directly linked to causal determinants of risk in individuals. Further studies have suggested that a culturally grounded and developmentally informed notion of social capital, identifying social networks and social isolation, trust and reciprocity and other dimensions of material and symbolic resources within families and communities may account for much of the variation in suicide rates between Indigenous communities (Mignone and O’Neil, 2005).

Population-wide trends to increasing risk of suicide may thus mask significant differences in processes of change at the community level that need further investigation. These trends reflect an interaction between demographic pressures within cohorts in periods of high fertility and changing patterns of family organisation and child-rearing, along with impacts of the cash economy on personal mobility and consumption and their consequences for family life. As Taylor’s (2010) demographic study of Wadeye shows, these influences affect opportunity structures available to adolescents and young adults. Suicide risk arises at the population level through interactions at multiple phases of the life cycle.

4.3 Hanging and Indigenous Suicide

Hanging as a method used by males had been rising in Australia from 1974 to 1994 (Cantor and Neulinger, 2000: 379). It is now the most common method among male youth and by far among Indigenous youth and young adults in Australia, New Zealand, Canada and the USA (Cantor and Neulinger, 2000: 380; Hunter and Harvey, 2002: 18; Kosky and Dundas, 2000: 838; Beautrais, 2001; Kirmayer, 1994; Middlebrook et al., 2001).

Both culture and availability play a role in the choice of method of self-inflicted death (Kosky and Dundas, 2000: 839). For example, much higher rates of self-inflicted death by firearms in the USA and Canada reflects both ease of availability and the cultural acceptability of firearms. According to Beautrais (2001), hanging was a prevalent method of suicide amongst New Zealand children aged 15 or younger, including children of Maori descent. Some authors have ascribed particular cultural significance to hanging for Indigenous people against the background of colonial history (Hunter, 1990; Hunter and Milroy, 2006; Hunter et al., 1999). Against this, must be counted simple ease of availability and lethality of the method of hanging: in part because of its unambiguous lethality, a public threat to hang oneself is a dramatically effective demonstration of intent that is likely to draw some kind of immediate preventive response by others, while completion of suicide requires deliberate withdrawal from public scrutiny. A completed suicide by hanging may occur after numerous public threats and attempts: others then fail to notice the withdrawal that precedes the eventual completed suicide. From the 1980s up until around 2004, a prevalent method on the Tiwi islands was to climb electricity poles and attempt suicide by electrocution (Robinson and Tyler, 2006; Robinson, 1990). A campaign to limit access to this method by installing barriers on poles was instituted around 2003 and almost certainly resulted in substitution by hanging and may have contributed to an escalation of completed suicides in the next two years.

'Hanging games' reportedly played by children in many settings are almost certainly a reflection of the modelling and social transmission of suicidal behaviour in circumstances of elevated suicide risk. Children are at increased risk when playing such 'hanging games' alone (Andrew and Fallon, 2007: 305; Egge et al., 2010). Surveillance and monitoring of young children by family members and others in communities of high suicide risk is therefore an important factor in the mitigation of risk of accidental death by hanging or other means.

The lethality of hanging and the ease of availability of the method may by themselves contribute to the increase in suicide deaths and of "accidental" deaths through any kind of suicide-imitating behaviour. Lethality of hanging and availability of means almost certainly contribute to the close to equal male to female proportions of self-inflicted deaths among Indigenous children and youth. The phenomena of transmission by modelling and imitation present a challenge for prevention strategies and programmes that aim to promote improved recognition and response to suicidal behaviour (Cantor and Baume, 1998: 12).

5. Results of the Audit of Cases

An audit was conducted of 18 child and adolescent deaths from 2006 to 2010, inclusive. The results of the audit of records and linkage of additional data are presented below.

5.1 Summary of Demographic and Suicide Event Data

Table 2: Demographic details, scene of death and residence for audited cases, 2006-2010

Year	Sex	Age	Scene of Death	Residence ²
2006	Male	12	Home	Victoria Daly
2006	Female	17	Park/Playground	Greater Darwin
2006	Male	14	Relative's home	Greater Darwin
2006	Female	15	Bush	MacDonnell
2006	Male	15	Home	Greater Darwin
2007	Female	16	Home	Greater Darwin
2007	Male	17	Home	Greater Darwin
2007	Female	14	Home	Roper Gulf
2007	Male	17	Bush	Victoria Daly
2007	Male	15	Home	MacDonnell
2007	Female	17	Home	West Arnhem
2008	Female	14	Home	Greater Darwin
2008	Male	17	Home	Greater Darwin
2008	Male	16	Park/Playground	Greater Darwin
2008	Male	16	Home	Barkly
2010	Male	15	Park/Playground	Alice Springs
2010	Male	17	Home	East Arnhem
2010	Female	14	Home	East Arnhem

Source: Audited coronial files.

Ages ranged from 12 to just under 18 years; 11 were male and 7 female. In all cases but one, the individuals were identified as Indigenous and in all cases but one the method of suicide was hanging; only one, by an Indigenous person, was by firearm. The average age of victim in the study population was 15.44 (sd = 1.464) with male ($x = 15.55$; $sd = 1.57$) and female ($x = 15.29$; $sd = 1.38$) suicides similarly distributed by age. In the large majority of cases, the act of suicide took place in or near the deceased person's own home. There were no cases of death in custody in the study population.

Suicide notes were present in 2 cases. In both cases there was a written message: a note referring to family members and, in one case, friends. In one of these cases, an extensive personal diary revealed a growing concern with death. In the other case,

² The regions referred to throughout this document are based on the Northern Territory Local Government Areas (LGA). For each case the LGA was identified from the suburb using the ABS Australian Standard Geographical Classification (ASGC) (2006). To simplify discussion of the small number of cases audited and their distribution, the LGAs of Darwin, Tiwi, Belyuen, Coomalie, Litchfield, Wagait, Palmerston and Unincorporated Top End LGAs are combined in the region "Greater Darwin".

the note was accompanied by an explicit expression of anger at police. In 2 other cases, there were verbal statements to witnesses suggesting that the deceased would soon be gone.

The deaths occurred in communities of all sizes and types across the NT, from tiny family outstations to larger centres. The greatest number was in Greater Darwin, including deaths in Palmerston and rural centres in outer Darwin. According to the definition of remoteness as measured by the Australian Standard Geographic Classification (ASGC) developed by the ABS (2006), there were 8 (44.4% of cases) in Outer Regional areas (Greater Darwin), 1 (5.6% of cases) in Remote and 9 (50.0% of cases) in Very Remote locations. Thus 55.6% of cases occur in Remote and Very Remote NT communities.

Table 3: Distribution of youth and adult suicides by region and Indigenous status across the NT, 2006-2010

Region	Indigenous				Non-Indigenous			
	Youth		Adult		Youth		Adult	
	n	%	n	%	n	%	n	%
Greater Darwin	8	47.1%	16	20.5%	0	0.0%	78	84.8%
West Arnhem	1	5.9%	4	5.1%	0	0.0%	1	1.1%
East Arnhem	1	5.9%	16	20.5%	1	100.0%	1	1.1%
Victoria Daly	2	11.8%	3	3.8%	0	0.0%	0	0.0%
Katherine	0	0.0%	3	3.8%	0	0.0%	2	2.2%
Roper Gulf	1	5.9%	2	2.6%	0	0.0%	1	1.1%
Central Desert	0	0.0%	3	3.8%	0	0.0%	0	0.0%
Barkly	1	5.9%	9	11.5%	0	0.0%	1	1.1%
Alice Springs	1	5.9%	12	15.4%	0	0.0%	7	7.6%
MacDonnell	2	11.8%	4	5.1%	0	0.0%	0	0.0%
Tiwi Islands	0	0.0%	5	6.4%	0	0.0%	1	1.1%
Interstate	0	0.0%	1	1.3%	0	0.0%	0	0.0%
Unknown	0	47.1%	4	20.5%	0	0.0%	4	84.8%
Total	17	100.0%	82	100.0%	1	100.0%	96	100.0%

Source: Audited coronial files (youth under 18 years); NCIS (adults 18 or over at time of death).

The distribution of young adolescent suicides by region does not appear to obviously coincide with the distribution of adult suicides across regions. There are some communities with high numbers of adult suicides and no (or very few) child or youth suicides, such as the East Arnhem (one only), MacDonnell, the Tiwi Islands and Alice Springs, and vice versa, regions with low numbers of adult suicides and similar numbers of child and youth and adult suicides, such as West Arnhem, Roper Gulf and the Central Desert. This suggests that more investigation of aggregation of suicide risk at different ages in different settings is needed.

5.2 Documented Evidence of School Enrolment and Attendance

The coronial files usually contained some mention of school enrolment status and attendance patterns for each case. This information is not routinely gathered in standard form and the source of reference is not always clear in the files. In one case, investigation warranted contact with the deceased's school so that enrolment status and attendance patterns were obtained from the principal. In most other cases, it was mentioned in witness statements, typically by the parents of the deceased.

Table 4: Evidence of school enrolment status and attendance in audited records by gender

	Male	Female
Enrolled and attending school regularly	0	4
Enrolled and attending school irregularly	0	2
Enrolled, but attendance pattern unknown	1	0
Enrolled, but not attending	4	0
Not enrolled	5	1
Unknown	1	0

Source: Coronial Files.

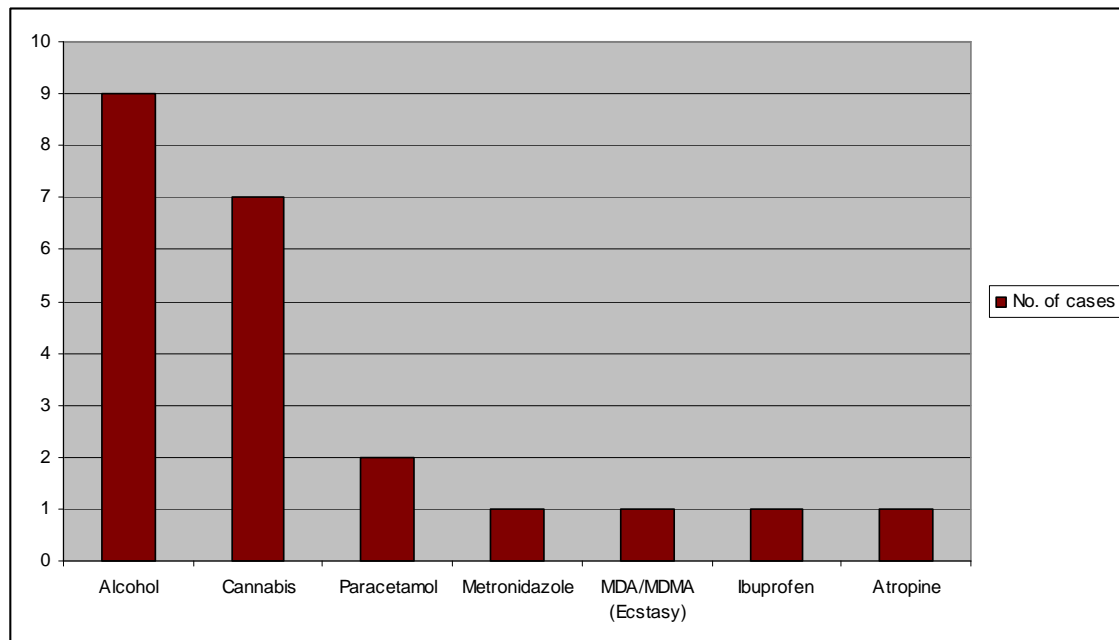
The data suggest that there may be a different relationship between males and females who committed suicide and attendance and enrolment at school. Females may be more likely to be at school and to have attendance difficulties; males may be more likely to be not attending at all, although in some cases still enrolled. Nine cases were over the age for compulsory schooling in the Northern Territory at the time of the study (16 years or older). With respect to males, there were four cases of non-attendance and 5 not enrolled at all; in 4 or more of these there appeared to be intent to leave school. Those not enrolled included a non-Indigenous youth in full time employment and two Darwin youths who had left school or intended to leave school. If such a differential distribution of risk reflected a consistent pattern, it would have implications for prevention for females and males.

5.3 Documented Evidence of Drug and Alcohol Use

Toxicology reports are a primary source for identifying the presence, level and, therefore, possible influence that various substances may have had on a death. Of the substances mentioned in toxicology reports, alcohol was present in 9 cases (50%), in 1 case at a potentially harmful level (0.201 mgm/100ml) and 7 others at levels sufficient to impair judgement to some degree (>0.05 mgm./100ml). The age of the youngest person found with alcohol in the system at the time of death was 14. Estimates of the contribution of putrefaction to alcohol levels detected based on time of death were not provided.

The screening test used to detect cannabis assesses its presence or absence only and therefore provides at most limited indication of the link between cannabis use and the circumstances of death. In 4 cases cannabis was present with alcohol at time of death; in one case cannabis was present with Ecstasy.

Figure 1: Drugs detected by post-mortem examination³



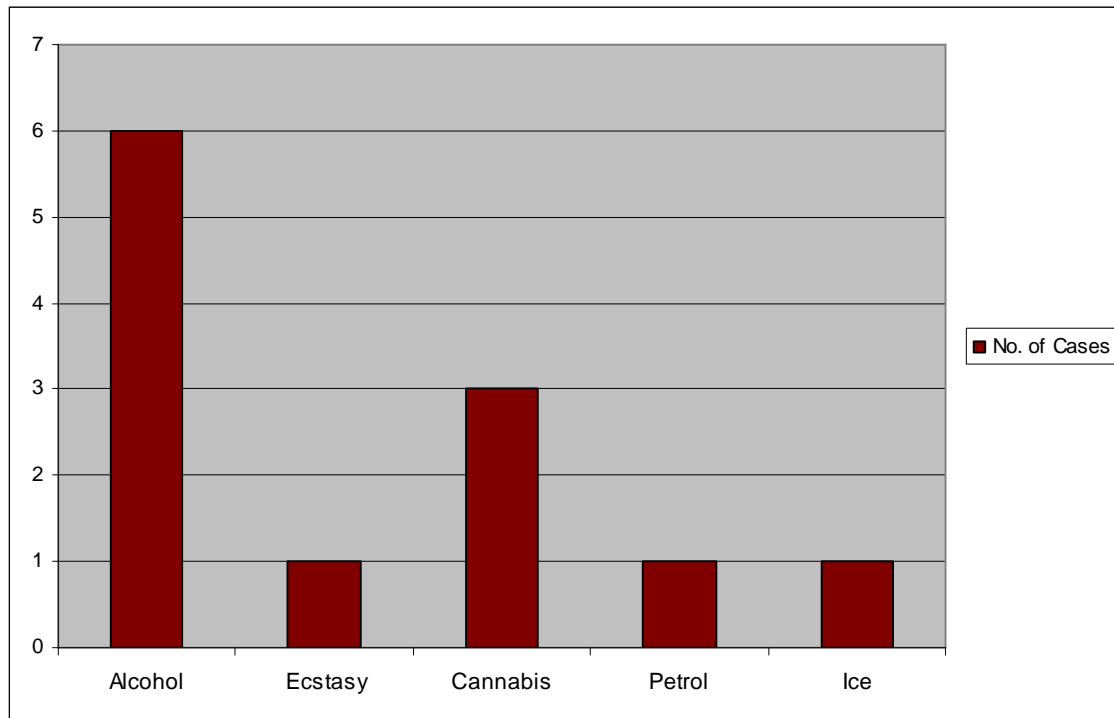
Source: Coronial Files.

In addition to information from toxicology reports, the audit collated references to drug and alcohol use in witness statements, both by police and health professionals, if available, and by family members and other lay sources. In these statements, 3 cases were identified as having histories of abuse of multiple substances. There was 1 case with extensive documentation of a confirmed psychiatric disorder involving frequent episodes of treatment and medication at the time of death. Of the 8 cases where a history of drug abuse was mentioned there was no indication of any detoxification having been undertaken. In 1 case alcohol and drug rehabilitation services had been engaged; in 1 case there was counselling for alcohol abuse in a

³ N.B. The total number of detections is greater than the number of cases because more than one drug was detected in some cases.

Youth Diversion Program. In 6 cases, statements from various sources, including family or community members, police, medical or mental health professionals directly linked drinking problems to the suicide.

Figure 2: Mentions of drug abuse (lay and professional assessments) in records



Source: Coronial Files.

5.4 Documented Evidence of Psychological Difficulties

Evidence of other psychological difficulties was identified in lay mentions and professional records contained within the coronial files. The professional records of psychological difficulties refer both to diagnoses and to other mentions by a medical professional. Lay mentions of psychological difficulty were sourced from witness statements about atypical or problematic behaviour of the deceased based on their experience and knowledge of them. Lay observations were considered if found in a witness statement by a person who knew the deceased well (e.g. a parent); in some less clear cases, corroborating mention of a difficulty by more than one witness was accepted as sufficient indication.

At least one type of psychological difficulty was mentioned by lay or professional sources in 16 of the 18 cases (89%). Indication of a depressed mood was identified in 61% of cases, while aggression (50% of cases) and social withdrawal (39% of cases) were the other most frequently mentioned indications of psychological difficulty. Such retrospective witness statements are not reliable indicators of specific psychological difficulty, and are influenced by the suicide itself and the striving to create meaning after the fact. The number of professional mentions is influenced by the very patchy access to service characteristic of young persons of this age across Territory communities.

Table 5: Number of cases where a psychological difficulty was mentioned by source⁴

	Lay Mentions	Professional	Total Cases
Depression	10	1	11
Aggression	8	4	9
Social withdrawal	6	2	7
Conduct problems	4	2	5
Unusual behaviour	3	0	3
Excessive risk	3	2	3
Impulsivity	3	1	3
Sleep disturbance	1	1	1
Directionless	1	0	1
Borderline Personality Disorder	0	1	1

Source: Coronial Files.

The number of psychological difficulties indicated per case was quite compact ($x = 2.72$, $sd = 1.99$): in 2 cases no reference to psychological difficulties was found; in 1 case there were 8 references to specific psychological difficulties.

Depressed mood and aggression co-occurred in 6 cases, depressed mood and social withdrawal co-occurred in 5 cases, social withdrawal and aggression co-occurred in 5 cases and all three of these psychological difficulties co-occurred in 3 cases. For the most prevalent difficulties mentioned – aggression, depression and social withdrawal – there was a bias towards males. It is possible that males use more readily identified and overt expressions of distress, and that females are less heavily scrutinised even when they do manifest symptoms of distress.

Table 6: Number of cases with the three most common psychological difficulties

	Male	Female	Total
Depression	8	3	11
Aggression	7	2	9
Social Withdrawal	6	1	7

Source: Coronial Files.

⁴ Psychological difficulties associated with adult Indigenous suicide – hallucinations, delusions, sorcery and somatisation – were not found and were omitted from the table.

5.5 Documented Evidence of Life Stressors

Life stressors are situations or events which give rise to psychological difficulties. The audit protocol sought to identify life stressors known to influence child/youth and Indigenous suicide. These references to life stressors are interpretations of precipitating circumstances made both from witness and investigator perspectives after the fact and from records of difficulty contained in medical files, child protection files or files from other services. Information in coronial files is often ambiguous concerning the extent of distress and their significance in relation to the suicide. The audit does not distinguish short- and long-term stressors, or acute and chronic stressors.

The life stressor most frequently mentioned in the files was general family conflict, including domestic violence (13 cases). In a number of cases, there were histories of severe and chronic domestic violence between parents. In addition, there was reference to specific conflict between the deceased and a family member or members in 12 cases, so that together, family-related stressors were by far the most frequently mentioned – at least one of these stressors was found in 16 out of the 18 cases and both family-related stressors were found in 9 cases. Drug abuse was mentioned in 7 cases and the death of someone close was mentioned in 6 cases.

In 5 cases there was mention of only 1 life stressor; 2 life stressors were mentioned in 2 cases; 3 life stressors were mentioned in 2 cases, and; in 9 cases, there were 4 or more life stressors noted, with 1 person each recording 6, 7, 8 and 9 life stressors. It is not suggested that this is an accurate assessment of cases: it reflects information as gathered at investigation only.

Table 8: Number of cases with mention of a life stressor⁵

	No. of cases
General family conflict/domestic violence	13
Conflict with family	12
Drug abuse	7
Death of someone close	6
Childhood maltreatment	5
Relationship breakup	4
Trouble with the law ⁶	4
School problems – teachers	3
Physical illness	3
Loneliness	2
Disapproved partner	2
Sexual orientation	2
School problems – peers	1
Psychiatric illness	1
FACS notifications	1
Unsettled lifestyle/shifting home	1
Sick father	1

Source: Coronial Files.

⁵ The audit did not find any instances of the following life stressors often associated with suicide: Financial problems, Lost job/Unemployment, Bullying, Chronic pain.

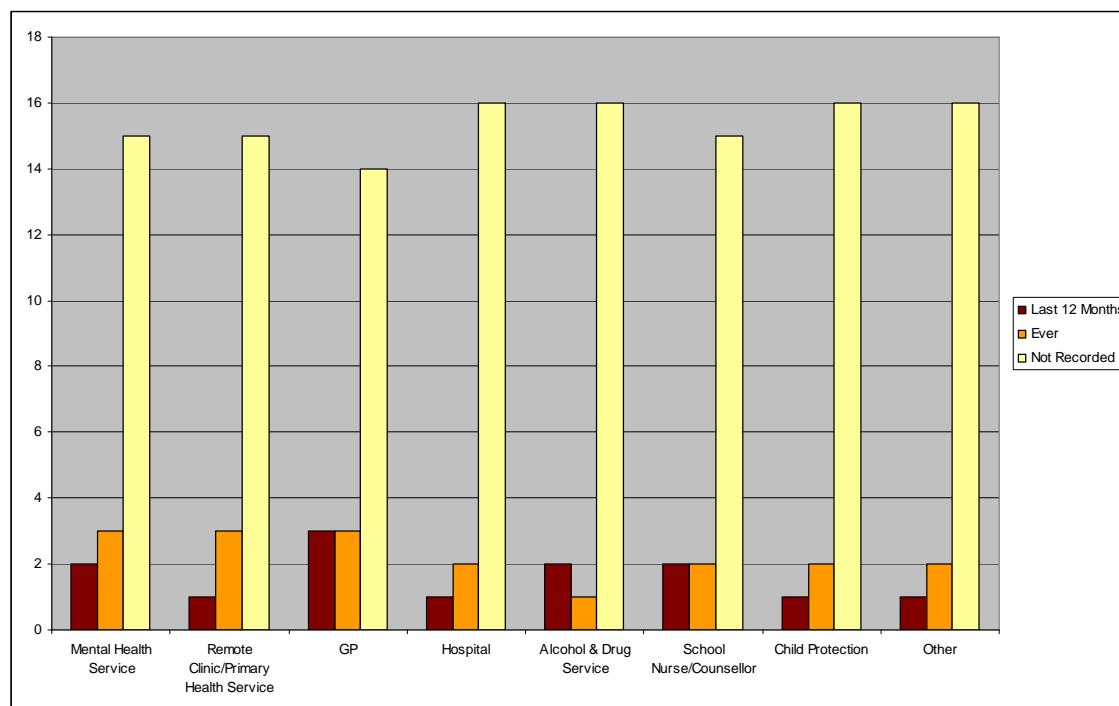
⁶ The audit did not find evidence of cases with current or pending charges.

As expected, there is a significant positive correlation between the number of psychological difficulties and the number of stressors ($r = .762$, $n = 18$, $p \leq 0.01$). While this may be an artefact of the limited scope of records of investigation, it reflects a plausible association between social difficulty and psychological wellbeing. Note that the intensity and duration of life stressors or of psychological difficulties could not be reliably ascertained for all cases accessed in this audit.

5.6 Documented Evidence of Contact with Health Services and Other Agencies

Only 8 out of the 18 cases (44%) had information on contact with health care services or government welfare agencies. Of these 8 cases, 6 had been in contact with a health care service or government agency in the 12 months prior to their death. It is likely that this reflects very low levels of service usage by these persons in connection with health, social, psychological or mental health problems. There is a higher frequency of contact with services in town centres: 62.5% of cases from Greater Darwin had sought or received help compared to 37.5% from remote and very remote areas. This also reflects the lack of a standardised protocol for provision of information on recent healthcare use to the Coroner on every case of possible suicide reported. Such information is likely to be present either upon subpoena by the Coroner's Office or if provided in witness statements by health personnel to police on initial investigation; there is thus wide variation in extent from case to case.

Figure 3: Documented evidence of contact with health care services or other agencies



Source: Coronial Files.

With few exceptions, more problems – psychological difficulties and/or life stressors – are mentioned in records of the cases of suicide in Greater Darwin than in remote/very remote locations. However, these differences may be taken to partly reflect lower levels of exposure to services outside of the major centres. In part as a consequence of low service use, there is generally less extensive documentation of cases available to inform investigation in remote and very remote settings. Psychological problems or stressors are rarely mentioned in medical and other records of services held in coronial files. The few records available suggest that health services in remote and very remote locations do not routinely make assessments of psychological problems or difficulties, much less conduct actual mental health assessments.

Coronial records contain limited – but nevertheless useful – information on psychological difficulties and life stressors in witness statements, including statements by family and friends as well as statements by healthcare staff or teachers in remote and very remote locations. The recording of such information by investigators in different socio-cultural settings may be limited by cultural, language and communication barriers as well as factors such as concern about distress of relatives of the deceased.

5.7 Documented Evidence of Suicidal Behaviour

The audit protocol sought to identify evidence of a history of suicidal behaviour, where it existed in the coronial files. The information concerning suicide threats – current and previous – were obtained through examination of witness statements and other records from health services, police, etc. Previous attempts were mostly recorded in witness statements. Only 2 cases were identified in medical records of hospitalisation for a suicide attempt.

Table 9: Number of cases where evidence was found of past suicidal behaviour

	No. of cases
Current threat (last 12 months)	6
Previous threat	4
Previous attempt	5

Source: Coronial Files.

Suicide attempts and threats were distinguished. In 3 cases there had been 1 previous suicide attempt and in 1 case there had been 3 previous suicide attempts. There was no clear indication in any case that suicide threats directly or indirectly led to a preventive service response.

5.8 Evidence of the Social Transmission of Suicide

Contagion refers to the modelling, imitation and social transmission of suicidal behaviour. It is often interpreted as an underlying mechanism of suicide clusters – suicide deaths that have occurred close together in space and time. Even where no clustering is evident, social transmission of some kind may have been present. Contagion was taken to be implied where there was some evidence of social connection between two or more cases and/or where evidence existed indicating the deceased was preoccupied in some way by the suicide death of another person. It is for these reasons that it is only possible to refer to suspected contagion.

For the purpose of the audit, the social transmission of suicide was distinguished along a spectrum between direct and indirect transmission, with an intermediate category to capture possible community-level influences on the clustering of suicide (Hazell, 1993). In addition to this categorisation, it was also noted whether or not such transmission occurred through a family link or history of suicide, although this may overlap with other kinds of suspected contagion.

Table 10: Number of cases where different types of contagion were implied

	No. of cases
Contagion suspected	6
A family link/history with suicide	3
Direct contagion suspected	5
Intermediate contagion suspected	2
Indirect contagion suspected	2

Source: Coronial Files.

There were at least 3 cases where the victim had mentioned or seemed pre-occupied by another suicide. In 2 of these there was preoccupation with the suicide death of a peer, also identified within this study.

With one exception, all cases identified as possibly influenced by these means of social transmission were male, had alcohol present at the time of death and were considered to have had problems with alcohol. All of the male cases suspected of contagion, except for one, lived in the Greater Darwin area. All cases suspected of contagion had been identified with an above average number of stressors for the study sample. Two cases suspected of contagion had problems with cannabis; 2 were conflicted about sexual orientation and 4 had attempted suicide at least once.

6. Discussion of Findings

The picture of suicides in this study varies according to age, social location and origins of the deceased. However, in important respects it differs from the picture of heavy drinking subcultures among young adult males frequently in trouble with the police, unemployed and residents of remote communities common in accounts of Indigenous suicide (cf. Hunter and Harvey, 2002). These differences are partly questions of age, but also of the social origins and life-histories of the subjects in this study.

6.1 Geographic Distribution, Indigeneity and Social Origins

Both in general and Indigenous populations, non-metropolitan areas commonly exhibit a higher rate of suicide while metropolitan areas contain a greater number of suicides (Graham et al., 2000: 12; Qi et al., 2009). The suicides in this study are distributed widely across the NT, with a relatively high proportion in remote or very remote locations, but of all locations, the largest number in Greater Darwin. The following section outlines circumstances of young persons whose cases were reviewed for this study. In this discussion, cases are grouped into those in the Greater Darwin area and those in remote or very remote communities.

6.2 Suicides in Greater Darwin

The social origins and precipitants of death of the cases in Greater Darwin give an indication of differences between families and young people from diverse social backgrounds. Four young males were born elsewhere, one from interstate.

For 3 of these youths who committed suicide in Greater Darwin, their similar situations reflect the reality of young people caught between fragmented families with origins in remote communities, experiencing family breakup and separation of parents and unstable movement between remote communities and Darwin. They were not well connected with Darwin life – except through kin living there – and there was little prospect that any resolution to their struggle for an orientation would be possible in Darwin. For a fourth youth, the shift to Darwin from interstate was caused by a long history of family problems, including police and welfare involvement. All of these youths drank heavily and had experimented with other substances.

Of the cases of suicide occurring in the Greater Darwin region, 5 were raised in Darwin. In almost all cases there was difficulty remaining at school. In some cases there were conflicts with parents about attendance and missing days at school. In other cases, the young person had indicated difficulty continuing as a student, and had decided to leave school. Other indications of adolescent adjustment difficulty entailed drinking and experimentation with drugs and in some cases indications of conflicted sexual identity. Almost all were vulnerable on the basis of past or recent family difficulties, including parental separation or conflict with family members.

As distinct from the young people from remote communities who were recently arrived, the young people born or raised for much of their lives in Darwin participated in distinctive social networks that to some extent overlapped and had many common elements, based on shared school histories, friendships, sport, and other contacts. There was evidence of a cluster of suicides in Darwin involving some young people who had known each other – that is, two later cases were directly acquainted with a

person and aware of that person's death. This kind of occurrence draws particular attention to the need for identification of at risk youth and for appropriate postvention after suicide deaths.

Even with the possibility of clusters of suicides or suicide attempts among peers and consociates, there may be no typical Darwin scenario for youth suicides. The cases show instances of depression, sadness and despair, with heavy drinking already in their mid-teens by 7 of the 9 young people in Greater Darwin. In 5 of the 9 cases there was a history of family breakdown or conflict that left the young person in crisis about where they belong, in some cases acting out acute conflict with family members at the time of death. There were indications in some cases of trans-generational family issues, with histories of child removal and foster-care in the parents' generation, followed by difficult or failed relationships with spouses and possibly leading to formal or informal kinship care for their children.

These cases thus describe unsettled young lives, with instances of challenging and sometimes violent behaviour and withdrawal by the young people that families struggled to cope with. In all but one case, there were open threats or suicide attempts that had been communicated to or witnessed by others. There may have been some missed opportunities for engagement by services, either through police called out to incidents, or during time in youth crisis accommodation. By the time these young people were at imminent risk, most of them (especially the males) had already dropped out of school and were not within reach of school-based counselling or support. However, there appears in no case to have been any active assessment of risk associated with their absence from school. There was no evidence in coronial files of postvention follow-up after any of the suicides in Greater Darwin. The three cases of suicide by friends known to each other give an indication that such follow-up would have needed to engage the youths, their families and possibly their schools to have had any effect. Together, these cases present a challenge to rethink how prevention might work in the varying social and family circumstances of young people in Darwin.

6.3 Adolescent Suicides in Remote Locations

The coronial records examined described 9 deaths that occurred in small, remote and very remote communities and outstations. These suicide deaths were widely distributed, occurring in central Australia, Victoria-Daly Rivers region, northeast Arnhem Land and near Katherine. Direct evidence of clustering within this group of suicides through references to adult suicides in these remote and very remote communities or surrounding regions is not yet available and would need to be confirmed through further investigation including investigation of adult cases. Although there were possible links between some cases there was nothing to suggest a close connection.

The classification of child and adolescent deaths as suicides can present challenges. According to other studies, there are risks, both of under-reporting and of over-reporting of suicides as a result of misclassification of accidental deaths of young people (Andrew and Fallon, 2007; Grøholt and Ekeberg, 2003). However, although a self-inflicted death is correctly classified as accidental, this may not mean an absence of suicidal motivation of any kind (Pfeffer, 1981; Shaffer, 1974). Moreover, it does not indicate the absence of risk in the young person's community, in his or her family situation and in the precipitating circumstances. The existence of multiple sources of risk, combined with exposure to suicidal behaviour by others and adoption

of lethal means observed add complexity to the judgement of intent and classification of a young person's death as suicide.

In many of the contexts described in audited cases, there is evidence of repeated exposure of young people to public suicide threats or attempts involving hanging by family or community members. The behaviour of young people may thus be influenced, prompted by or learned through observation of overtly suicidal behaviours by others. For example, police reported the existence of a "hanging game" played by children in one area. Records did not provide sufficient information to determine whether this game was simply childish imitation of suicidal acts, or an asphyxial game intended to cause a physiological effect (Andrew and Fallon, 2007). The prevalence of suicide thus creates an additional risk of both accidental and intentional imitative deaths. It is evident that vulnerable adolescents who committed suicide by hanging have already been exposed to suicidal behaviour involving hanging from a young age.

Children and youths act out reactions to disciplinary incidents, situations of threat or stress in key relationships in the course of risky play with peers, without this necessarily leading to anything resembling a suicide attempt. The risk is buffered by the presence of others. Andrew and Fallon (2007) argue that an increase in deaths resulting from asphyxial games appears likely to be associated with the increasing use of ligatures in solitary play. Given that children's play and experimentation may include risky games the lack of monitoring and vigilance regarding play of children and young adolescents in some contexts is an important risk factor.

It is significant that 6 of the deaths examined in this study occurred in very remote communities with small populations including very small outstations. These are all community settings with very limited service provision, virtually no services directly engaging families and children, and where very isolated families lack access to supportive social capital.

In light of the recently high Tiwi suicide rate and consequent frequent exposure of children to suicidal behaviour, one might expect to have seen cases of child or adolescent deaths by hanging on the Tiwi Islands. Reports from mental health staff indicated that Tiwi children have played imitative and asphyxial games (Norris, 2005; Robinson and Tyler, 2006). However, there were no Tiwi child and adolescent suicides among the cases audited. This may suggest that in communities of high risk, an intensification of informal vigilance and monitoring of children's behaviour (even among peer groups themselves) can take place that provides some protections to children and young people, while not removing the already accumulated sources of risk that manifest themselves in suicides among older adolescents and young adults. In addition there is likely to be some contribution from the comparatively high level of services on the Tiwi Islands, including a family-focused early intervention program and mental health and life promotion services that were implemented as preventive strategies in response to the very high suicide rate from 1999-2005.

Based on findings of this study, for the suicides in remote areas it is important to identify the specific circumstances of each case: these are very often isolated young people, dependent on families, reacting to family conflicts and adult criticisms, jealous of young partners, some of them with possible underlying depression, and in the main manifesting internalising behaviours in response to stress or anxiety, criticism or physical assault. All but 2 of these young people had left school and most had little social connection beyond their immediate families. There were conflicts with families and relationship difficulties with young spouses or boy- and girlfriends. Of

these cases, only two had been drinking heavily at the time of death and one had used marijuana heavily the day before.

If one includes those suicides among youths from remote communities in Greater Darwin, there were exceptions to the socially withdrawn, internalising profile; these cases showed some evidence of externalising, aggressive or confrontational patterns, overt conflict with family and in some cases defiance of public authority, combined with heavy drinking. The single case of suicide by a non-Indigenous youth had echoes with these cases in terms of antecedent risk factors and patterns of behaviour. This death occurred in a remote location and there was some indication of awareness of recent suicides by Indigenous persons in the local community. The possibility of both commonalities and interactions between risk and protective factors for young people across ethnic groupings and social contexts should be explored. Such commonalities may have implications for identification of risk, engagement of youth and prevention in different settings.

The relationship problems of young people in remote locations reflected two tendencies: there were cases in which love or friendship relationships met severe disapproval from kin leading to a crisis. In other cases, young persons were in arranged or semi-traditional marriages that were highly supported by kin but involved some emotional conflict. In such cases suicides occurred after a dispute between young spouses. These may have been marriages they were under some pressure to maintain. In cases involving the death of a young partner after a dispute, the risk of a serious suicide attempt by the surviving partner, in the immediate aftermath and in following months is very high. There were thus 2 cases in which suicide attempts by the surviving partner were reported.

There is sufficient indication in the cases reviewed to indicate that traditional means of exerting control over adolescent sexual relationships and the emerging modified traditions that represent contemporary family expectations about marriage are in some tension with contemporary adolescent love relationships. The latter involve “free choice” and are increasingly communicated by the new online social media over mobile phones. There is avid participation by peers who communicate much more directly about their relationships through these media, than do parents or elders who do not access them. These emerging conflicts about love and relationships are a part of the profile of risk for vulnerable young persons. It is evident that encouraging positive community responses to these issues are a potential field for prevention.

This review of suicides included the death by hanging of a young adolescent female in a central Australian community in 2006. An inquest into the case was concluded in 2009 (Northern Territory Coroner, 2009). The suicide occurred in the context of intense media interest in the community fuelled by a *Lateline* report in June 2006 into sexual abuse and petrol sniffing in very remote communities. This attention impacted on policy responses to the *Little Children are Sacred* Report (Wild and Anderson, 2007). The young woman was followed up by the child protection Task Force (Police and NT DCF) established by the NT Government. Her suicide occurred despite efforts to contact her by multiple agencies. An Inquest was held in order to investigate the conduct of agencies involved with the girl before her death; to consider whether her death could have been prevented; and to hear evidence of recent relevant policy changes since her death. The Coroner’s findings highlight issues that are of relevance to other cases discussed in this study, and issues of critical significance for suicide prevention in the Northern Territory generally.

Among the cases reviewed in this study, this young woman presented the most extreme example of multiple risk factors for suicide. These included recent diagnosis

with an STI and records of sexual activity with adults from her very early teens. In addition to sexual abuse and repeated episodes of treatment for STIs, there was ongoing substance misuse, mainly petrol, with symptoms including hair loss and weight loss. She was unsettled and shifted from outstation community to community. She had previously attempted suicide in a nearby community. The risk profile further included a history of chronic neglect, domestic violence and substance misuse in her family. Her situation at the time of death was marked by conflict including assaults committed by and against her. Thus on the day of her death, there had been a physical fight over money followed by an ostensible suicide threat after which she ran away. She was later found hanging in the bush on the outskirts of the community.

The inquest found that there were serious failures of co-ordination and follow up by agencies: FACS (DCF) case workers lacked and did not insist on direct access to health records to check documentation of STIs, so the sexual abuse remained “unsubstantiated”. A visiting consultation with the mental health team had been asked to address the issue of school attendance only; there was no contact with the health service or with FACS and as a result no awareness of or action on the full risk profile, which included a recent suicide attempt. Records of GP consultations in communities visited by her were missing. There had been ineffective attempts to engage the girl by Reconnect (Alice Springs), Central Australia Youth Link Up Service (CAYLUS), Ngaanyatjarra Pitjantjatjara Yankunytjatjara (NPY) Women’s Council and Alcohol and Drugs Service of Central Australia (ADSCA).

It was argued in submissions that FACS (DCF) should have taken the lead in case management and should have convened a case conference. It was evident that health services had failed to provide any kind of coordination of or support for attempts to monitor and follow up the girl. There was thus compelling evidence of “community dysfunction” and the failures of coordination between services and the poor functioning of separate services, including the health centre. It was striking that there was no capacity to undertake any joint case management for an adolescent who was patently at risk and had been at risk over a number of years.

The Coroner’s recommendations focused on resources and timeliness of investigation and the need for introduction of an Adolescent Health Service for the Northern Territory. The Coroner’s findings suggest that for such a service to be effective a range of systemic issues need to be confronted and overcome:

- a) Integration and coordination of targeted preventive, clinical and supportive services across agencies;
- b) Clear lines of responsibility for integrated case management, referral, follow-up and continuity of care for high risk adolescents along with shared access to some levels of client information about risks;
- c) Investment in services able to support community prevention strategies for remote locations, with proactive identification and outreach to at risk youth.

Such an investment in services would need to have regard for the limited infrastructure available in the many very remote locations in which young people live. This inevitably means that an adolescent health or wellbeing strategy must combine some investment in community resources and programs linked to health and education with an effort to optimise the effectiveness of visiting, mobile services. Young people in family outstations and very small communities outlined in many cases are likely to continue to “fall through the cracks” between very limited available services.

Some of the key objectives of the establishment of the Task Force and other actions taken under the NT Emergency Response were formed in direct response to

situations like that of the central Australian girl. It would be a matter of some importance to evaluate whether measures implemented since this girl's death have indeed produced an improved response to these concerns. On all the dimensions of integration, coordination, shared information, joint case management and development of preventive strategies, the cases audited in this report suggest that there may have been little progress in communities in which these suicides occurred.

7. Issues for the Prevention of Suicides of Young People

This section summarises the findings of this study with a view to outlining their significance for the prevention of child and youth suicide in the Northern Territory. It covers three main areas: identifying the antecedents and risk factors for child and youth suicide; identifying gaps in services and systemic issues, and assessing some relevant evidence relating to the effectiveness and efficiency of suicide prevention in the NT. Our concern is to draw attention to the themes arising from this study. We do not seek to assess or comment on the many existing initiatives that are part of the current NT suicide prevention plan.

7.1 Antecedents of Suicide and Suicide Prevention

This study has identified a range of antecedent circumstances for youth suicide that are indicative of different prevention priorities. Forensic investigation does not necessarily prioritise these determinants, so that the evidence for their significance in case records varies in extent and completeness. Although some degree of family difficulty is present in all cases, forensic investigation is not tasked with disentangling these influences on the young person's vulnerability to suicide.

Table 11: Common antecedents of child and adolescent suicide evident in records

Antecedents	No. of cases
Impaired early development; neglect and/or abuse; impaired childrearing	8
Parental separation or breakup (early & recent)	10
Current family difficulty	14
Family suicidal behaviour	4
Relationship difficulties with partner/friend	6
Substance abuse in adolescence	9
Antisocial behaviour & disciplinary crises	11
School drop-out & social withdrawal	11

Source: Coronial Files.

In Table 11, risks for adolescent suicide reflected in the cases studied are organised in four main groupings. These are heuristic groupings based on content analysis of individual records; factor analytical procedures could not be used to identify factors for a sample of this size. Individual cases may contain more than one group of antecedents.

Firstly, there was evidence of risk established in early childhood through the effects of neglect and abuse, impaired parenting and poor family functioning, and of child development under the influence of parent and family suicidality and psychopathology. In some cases this involved parental separations and chronic domestic conflict that impacted on quality of care, and that were reflected in contacts with child welfare services.

Secondly, family risk factors are evident in the current or recent situations of adolescents completing suicide. These include family dysfunction involving domestic

violence and parent-child conflict, including conflict over drinking and behaviour, as well as over school attendance, dropping out and associations with peers. These kinds of family risk factors may follow somewhat different courses for young people from remote and from urban settings.

Thirdly, social disconnection and substance abuse constitute important areas of symptomatic difficulty for adolescents. This includes separating from or troubled interactions with families, risk-taking, alcohol and drug misuse and school drop-out.

Fourthly, very small communities and outstations which lack services and in which there may be insufficient monitoring by socially isolated families. There is a need to develop resources to promote adolescent wellbeing in remote regions and communities of the NT.

Each of these four main groupings of risk has their own distinct set of implications for prevention:

1. *Childhood risk factors and prevention.* The rate of child protection notifications and substantiations, and resulting episodes of child removal and out-of-home care in the Northern Territory continue to rise (Northern Territory Government, 2010). The institutional response to these problems of itself may contribute to risk of suicide and self harm among adolescents and young adults in some cases. There is a need to investigate the contribution of early childhood adversity to suicide outcomes in order to target child protection intervention and for improvements in prevention targeting early childhood and the ongoing functioning of families.

Many young persons at risk of suicide have been raised in adverse circumstances, with poor quality or disrupted parental care, in some cases amounting to maltreatment and abuse. Many of them will have been the subject of actions by child protection services in early childhood and later in life. Currently available therapeutic services need to be augmented by strategies aiming to improve the quality of parenting and family environments in early childhood. This approach could target parents at high risk that are identified through the child protection system (including parents with past histories of neglect and abuse).

2. *Ongoing difficulties in the adolescent's family.* Recent parental separations and associated ongoing family stress were prominent in the background in many cases. These clearly contributed to heightened vulnerability of young people; anger and profound doubt about where they belonged was a critical problem for some. Unhappiness with current family arrangements affected both Darwin-born youths as well as young people from remote communities, some of whom were temporary residents in Darwin.

Adolescents and children in families in which there is a history of suicide and suicide attempts are particularly at risk. For children and adolescents, the prevalence of suicidal behaviour in families renders early onset of suicide risk for children and young adolescents more likely. Parents under stress in their marital relationship or struggling to sustain their family commitments may themselves be at risk of suicidal behaviour and have made threats and attempts to commit suicide. Indeed such suicidal behaviour on the part of the parent may be exacerbated by their difficulties managing young household members, unwittingly adding to the young person's guilt, hopelessness and sense of expendability and exacerbating risk of suicide. In the contexts of preventive strategies targeting parenting and/or family wellbeing, these risks should be identified and brought into the scope of counselling or treatment of adults for depression or anxiety or of

interventions that aim to improve parental responsiveness and parents' awareness of the qualities of communication with the adolescents and within their families generally.

3. *Substance abuse and social disconnection.* In some cases drinking was at fairly heavy levels and coupled with experimentation with other drugs. Some young people became withdrawn after heavy drinking with friends, while others violently enacted conflict with family immediately preceding their suicides. For some, heavy drinking had been linked with antisocial behaviour and disciplinary crises occasioning trouble with police. The young person who puts family members under pressure through difficult behaviour may be at risk of a spiral of anger and lashing out, rejection by kin and peers, followed by life adrift between communities or on the streets.

Coupled with substance misuse and experimentation with drugs, school drop out was clearly evident both among urban-born youths and those from remote communities. In Darwin, there appears to have been little or no follow-up from school-based or other services regarding the young person's wellbeing. The possibility of clusters of suicides in urban settings should serve to focus attention on the gaps in capacity to reach at risk adolescents who may share common problems and experiences within their social networks, and who remain out of reach of school-based counselling, mental health services and social supports. Clearly, even in communities with varying levels of literacy and generally low retention in secondary school, the transition from school to life after school is fraught with risk for vulnerable youths with few competencies and exposed to multiple sources of risk.

4. *Social isolation and resources for youth wellbeing in remote communities.* A significant number of deaths occurred in very small remote and very remote communities and outstations. There was evidence of insufficient monitoring of children and youths by socially isolated and in some cases poorly functioning families. These communities have very few services that are able to support adolescent wellbeing and are in themselves very limited in terms of supporting social capital to support young people, provide options for involvement, work and social participation. Reaching young people in these communities is a challenge both for improvement of services capable of identifying and monitoring young people at risk and for improvement of opportunities for social participation through sport, training and employment.

7.2 Gaps in Services and System Deficiencies

The risk factors outlined point to a number of prevention priorities for which services and interventions have yet to be developed. In addition, there is a need to overcome failures of coordination and collaboration between services that potentially have a responsibility to support vulnerable children and adolescents. These gaps are summarised as follows:

School-based services and outreach for at risk adolescents and their families. The cluster of suicides in Darwin illustrated some critical gaps in school-based services or post-school services that identified and responded to the risks associated with these young persons' attendance difficulties. These difficulties very often interact with problematic patterns of communication with parents, or with parent and family difficulties (family stress, marital break-up and parent depression or suicidality) that

greatly add to the vulnerability of the young person. Interventions that work with families or parents of youth at risk of school drop-out have shown promise in reducing suicide risk. They can have the effect of transferring positive outcomes through the young peoples' peer networks.

In remote communities, while school drop-out at younger ages may be more common than in Darwin, it nevertheless signifies a transition in which young people formerly at boarding college, for example, may encounter a difficult social adjustment. This may not be amenable to intervention by school-based services, but rather by a community level response.

Community responses to self harm and antisocial behaviour. The normalisation of suicide threats and attempts in some communities, combined with family resistance to difficult, often aggressive, if not frankly antisocial behaviour may lead to a tendency to under-respond to suicide threats which come to be seen as either extravagant attention-seeking or coercive manipulation. This was evident in a number of cases in different ways and can contribute to a powerful tendency to under-respond to the young person's behaviour and to avoid the person in the context of repeated confrontations. A kind of helpless under-response was evident in cases in Darwin and in remote communities. Families may need external support to overcome a negative spiral of confrontations and withdrawals that can escalate to suicidal action by the adolescent. Police call-outs to emergencies – as occurred in a number of cases studied – may be the only recourse of these families. The Police response may function as a circuit-breaker in a crisis, but by its very nature does not address the underlying issues in family-adolescent interaction.

Community suicide prevention initiatives can support families by providing an external response to adolescents in crisis, ensuring that there is some follow-up when family members may be distressed and tend to withdraw from the young person. A community prevention strategy needs to recognise the seriousness of a young person's threats of suicide and violence and to develop the capacity to ensure that there is some level of contact or follow-up in circumstances where family or community members may not feel able to respond. It should be able to recognise the damage done by recurrent negative interactions between the young person and his or her family.

Failures of service coordination and follow-up. In remote communities, the inquest into the suicide death of a central Australian girl demonstrated that there was not only a lack of services dedicated to supporting adolescent wellbeing but also that there were failures of coordination between the various agencies with responsibility for child and youth welfare. Given that this young person was in the highest category of risk, the lack of any kind of connection between health, mental health, substance abuse and child protection services was striking.

The Coroner's recommendation in that case, namely that an Adolescent Health Service be established in the Northern Territory appears to be amply justified. However, based on the findings of this study, such a service needs to have a broad focus on wellbeing and to be able to recognise the many sources of risk in terms of family dysfunction and family suicidal behaviour. Improved coordination between a wider range of services available through education support, community mental health teams and therapeutic services available through NT DCF should be a high priority. At risk youth need to be supported and engaged by services – even where they resist them. Coordination of existing services without improving the capacity to actively engage youth will achieve little.

In summary, it must be noted that this study included only cases classified as suicide by the Coroner's Office. It is well established that many suicides may be disguised in as deaths by misadventure and other accidental deaths, including car accidents and pedestrian fatalities, for example. The extent to which this applies to child and adolescent deaths, compared with adult deaths is unclear, and might be the focus of further research into age-specific causes of death.

7.3 Evidence for the effectiveness of suicide prevention

Evidence for the effectiveness of suicide prevention measures is at best highly variable and often entirely lacking (Gould et al., 2003; Gould and Kramer, 2001). Burns and Patton (2000) have reviewed the evidence across a range of preventive interventions for youth suicide, focusing on individual, family, community, school and peers and found that stringently designed trials of efficacy or effectiveness are few, and mainly limited to clinical interventions and treatment programs. The effectiveness of such interventions is limited by the degree to which they reach members of target groups. This may rely on screening and assessment measures that in themselves present substantial investments and whose benefits are difficult to assess.

Clinical interventions targeting affective disorder and psychopathology among young people have demonstrated efficacy in mitigating suicide risk factors (Burns & Patton, 2000). Selective and universal interventions targeting alcohol and substance abuse have demonstrated impacts on risk factors. However, interventions targeting antisocial behaviour among the young through both selective and universal interventions have demonstrated perhaps the most promising evidence of efficacy on risk factors. Parent education programs have been shown to reduce suicide risk factors among high school students (Toumbourou and Gregg, 2002). Interventions targeting child conduct disorder and antisocial behaviour in early childhood include programs that address parenting and family functioning. These have shown sustained effects on risk factors associated with adolescent suicide. It is suggested that, in part because they are able to influence a range of risks and outcomes, they may represent the most substantial value for money if implemented widely enough and sustained over time (Burns and Patton, 2000). However, both variable implementation quality and a lack of sustainability at scale limit the capacity to effectively implement many programs.

There are some challenges integrating preventive approaches with clinical services. Fortune and Clarkson (2006), referring to the New Zealand context argue that expectations that mental health services are the primary site for suicide prevention are often unrealistic. The pressure on mental health services to take on the role of suicide prevention can distort clinical practice and undermine the quality of services – that is, high quality clinical interventions – they are best placed to deliver. In line with the conclusions of this report, prevention of youth suicide and the promotion of adolescent wellbeing need to be premised on engagement across sectors responsible for primary prevention and family support as well as youth mental health and wellbeing.

“Gatekeeper” programs have received increasing attention and support as a mainstay of suicide prevention (Isaac et al., 2009), especially with respect to Indigenous peoples (Capp et al., 2001). “Gatekeeper” training provides instruction to personnel and officials that young people are in regular contact with. Training focuses on recognition of suicide risks, signs and symptoms along with training in referral and diversion of young people to treatment and support – it emphasises

changes in the behaviour and responses of those in contact with young people. Reviews of evidence show that gatekeeper training can significantly change the attitudes, understandings and skills of the gatekeepers. However, there is almost no reported evidence of its effectiveness in reducing risk factors in young people (Burns and Patton, 2000; Isaac et al., 2009). Isaac et al (2009) cited studies showing that the effects of training disappear if not sustained. There are also suggestions that increased referral activity without increasing capacity to provide effective treatment or social response may increase pressure on mental health services at the expense of quality, by promoting a checklist approach to assessment and treatment rather than assisting clinicians and practitioners to sustain quality therapeutic relationships with young people at risk (Isaac et al., 2009; Fortune and Clarkson, 2006).

It cannot be determined whether gatekeeper training could have helped the young people in this study. It is plausible that to enhance the effectiveness of gatekeeper training, it would need to be linked with strategies of active engagement of young people in their peer social networks and in situations of risk, such as school drop-out and living on the streets. However, in many cases, this will lead to contact with families experiencing difficulty as a result of marriage breakup, parental mental illness or other problems. These links between family difficulty and adolescent risk suggests the need for more effective targeting of preventive services to reach beyond the individual at risk, rather than provision of general training across existing service arrangements.

Burns and Patton conclude their review of evidence with the following: "An important consideration is that the costs and consequences of intervention (or failure to intervene) are borne not simply by mental health services, but by other government (e.g. education and social services) and non-government sectors.... Available information suggests that the economic benefits of early childhood interventions and early intervention with juvenile offenders are likely to be substantial" (2000: 402).

Community prevention initiatives may combine a number of the above elements within a strategy that is "owned" by communities affected by suicides and that seek to mobilise comprehensive responses that extend beyond the provision of services. In New South Wales, for example, an Indigenous community prevention program effectively combined elements of gatekeeper-style training with other approaches to clinical treatment, life skills training for young people, promotion of mental health and wellbeing and building social capital through community development (Capp et al., 2001). These approaches can and certainly should include early intervention and prevention targeting family wellbeing, parenting and the early life determinants of suicide risk.

Most discussion of suicide prevention for Indigenous peoples emphasises community-based approaches, both because of the way suicide has appeared to strike at communities, and because they provide the opportunity to mobilise a collective response that appeals to local values and histories of members of the Indigenous communities. There is a need to counter discourses within communities that reinforce helplessness and resignation to these deaths (Allen et al., 2009; Chavoshi et al., 2009; LaFromboise and Lewis, 2008; Middlebrook et al., 2001; Wexler, 2006). However, in Australia, there is limited evidence for the effectiveness of community-based suicide prevention initiatives in Indigenous communities. Some are not evaluated at all, or have been evaluated from ideological starting points that appear to assume that community participation and mobilisation equate to effectiveness (McKay et al., 2010). In other cases, such as the Tiwi Islands, where a serious escalation in the number of suicides was accompanied by growing preventive activity in a context of generally high levels of service provision, there was limited

evaluation of the strategy. It can be difficult to ascertain the respective contributions of community adjustments to the epidemic or the impact of services and interventions to the subsequent decline in the number of suicides.

Indigenous community initiatives potentially draw on a range of symbolisms and approaches, some emphasising healing, others recovery from historical trauma, some emphasising spirituality, with others focusing on life skills for adolescents in conjunction with sport and recreation, or youth leadership frameworks (Kirmayer et al., 1999). Effective, culturally competent prevention needs to be underpinned by evidence concerning the determinants of suicide risk. They need to be supported by well-coordinated services that can provide the infrastructure to sustain the capacity for intervention and prevention as well as building the capacity to promote wellbeing. Frameworks for community participation and leadership that enable communities to take responsibility for the problem of suicide and self harm may be an important part of an overarching strategy. However, this study shows that low levels of social capital and social isolation are realities faced by many of the families, children and adolescents who are most at risk. For them, grand gestures of community leadership and control may be less important than measures that can build social capital and directly assist young people to achieve social connection in and beyond their communities.

8. Conclusions

The rate of suicide in the NT's Indigenous population has risen steeply over the last four decades. This is widespread across the Territory, but also occurs with significant peaks or clusters in specific communities. There is clear evidence that the incidence of child and adolescent deaths has risen over the last ten years, and every indication that this may continue to rise. These deaths are also widely distributed, with evidence of clustering in some contexts.

A review of international evidence highlights the importance of familial transmission of suicide risk. Suicidal behaviour and completed suicides of parents and siblings are strongly linked to suicide attempts in adolescence. Moreover, early trauma including maltreatment and sexual abuse are associated with early onset of suicide attempts and with repeated attempts among young people. Adolescents subject to early trauma and abuse, and adolescents whose parents have been subject to trauma and sexual abuse are at risk of suicide. Intervention studies in the NT provide evidence of suicidal behaviour by parents and siblings in families of young children. Ongoing family stress including violence and substance misuse, as well as family suicidal behaviour contribute significantly to the risk profile for young people. The review of evidence indicates that the increasing rate of suicide in the Indigenous population is likely to be influenced by the family transmission of suicide combined with other modes of social transmission through peer networks and with patterns of drinking and substance misuse in communities.

This qualitative study of child and adolescent suicides was based on an audit of 18 cases of suicide by persons under 18 years of age from 2006 to 2010. All deaths but one were hanging deaths, and all but one were by Indigenous persons. They are widely distributed across the NT, ranging from very small very remote communities to larger towns and to Darwin, which had the largest number of cases. They do not necessarily occur in communities or regions with very high incidence of adult suicide. The study identifies a number of distinctive patterns of risk in children's early development, in the functioning of their families and the community contexts in which the young people live. School drop-out or transition from school is highlighted as a common concurrent issue for half of the cases, albeit with some differences in manifestation in remote communities and Darwin. It was evident that there are few if any services able to address the combination of transition from school, poor family functioning and substance misuse for high risk adolescents. In many communities, there is evidence of under-response to suicide risk, that is partly a product of the severity of ongoing conflict in families and the strain associated with the adolescents' behaviour. A number of cases demonstrated that there are tensions associated with traditional mechanisms for regulating marriage, adolescent sexuality and peer relationships that may place young people at risk of suicide responses to assault, humiliation or inappropriate punishment.

The study highlights a number of issues. Suicide prevention should be the business of all agencies that deal with child and youth development and wellbeing – there is evidence of ongoing poor coordination between them. Further, there is a need to consider better targeted school based prevention that not only reaches at risk youth, but also their families. There is also scope to develop community approaches to prevention that can strengthen family and community capacity to respond to young peoples' distress and to find alternatives to counterproductive responses. Finally, there is a need to further investigate the early life and familial determinants of suicide risk in order to develop effective early intervention strategies that target parenting, neglect and other adversities in the lives of young people.

References

- Allen, F. (2000) 'Suicide: What Is to be done?', *Australian Psychologist* 35(1): 29-31.
- Allen, J., G. Mohatt, C.C.T. Fok, D. Henry and T. People Awakening (2009) 'Suicide Prevention as a Community Development Process: Understanding Circumpolar Youth Suicide Prevention Through Community Level Outcomes', *International Journal of Circumpolar Health* 68(3): 274-91.
- Andrew, T.A. and K.K. Fallon (2007) 'Asphyxial games in children and adolescents', *American Journal of Forensic Medicine and Pathology* 28(4): 303-7.
- Australian Bureau of Statistics (ABS) (2006) *Statistical Geography Volume 1 - Australian Standard Geographical Classification (ASGC)*. Canberra: ABS (cat no. 1216.0).
- Beautrais, A.L. (2000) 'Risk factors for suicide and attempted suicide among young people', *Australian & New Zealand Journal of Psychiatry* 34(3): 420-36.
- Beautrais, A.L. (2001) 'Child and young adolescent suicide in New Zealand', *Australian and New Zealand Journal of Psychiatry* 35(5): 647-53.
- Brent, D. (2010) 'What family studies teach us about suicidal behavior: Implications for research, treatment, and prevention', *European Psychiatry* 25(5): 260-3.
- Brent, D.A. and N. Melhem (2008) 'Familial Transmission of Suicidal Behavior', *Psychiatric Clinics of North America* 31(2): 157-77.
- Bronisch, T. and R. Lieb (2008) 'Maternal Suicidality and Suicide Risk in Offspring', *Psychiatric Clinics of North America* 31(2): 213-21.
- Browne, A. and D. Finkelhor (1986) 'Impact of child sexual abuse: A review of the research', *Psychological Bulletin* 99(1): 66-77.
- Burns, J.M. and G.C. Patton (2000) 'Preventive interventions for youth suicide: a risk factor-based approach', *The Australian And New Zealand Journal Of Psychiatry* 34(3): 388-407.
- Cantor, C. and K. Neulinger (2000) 'The epidemiology of suicide and attempted suicide among young Australians', *Australian & New Zealand Journal of Psychiatry* 34(3): 370-87.
- Cantor, C.H., A.A. Leenaars, D. Lester, P.J. Slater, A.M. Wolanowski and B. O'Toole (1996) 'Suicide trends in eight predominantly English-speaking countries 1960–1989', *Social Psychiatry and Psychiatric Epidemiology* 31(6): 364-73.
- Cantor, C.H. and P.J. Baume (1998) 'Access to methods of suicide: what impact?', *Australian & New Zealand Journal of Psychiatry* 32(1): 8-14.
- Capp, K., F.P. Deane and G. Lambert (2001) 'Suicide prevention in Aboriginal communities: application of community gatekeeper training', *Australian and New Zealand Journal of Public Health* 25(4): 315-21.
- Chandler, M.J. and C. Lalonde (1998) 'Cultural Continuity as a Hedge against Suicide in Canada's First Nations', *Transcultural Psychiatry* 35(2): 191-219.
- Chandler, M.J., C.E. Lalonde, B.W. Sokol and D. Hallett (2003) *Personal persistence, identity development, and suicide : a study of native and non-native North American adolescents*. Boston, Mass.: Blackwell.
- Chavoshi, N., M. Teegee, W. Adam, W.M. Christian, E. Henderson, K.J.P. Craib, M.T. Schechter and P.M. Spittal (2009) 'The Cedar Project: Correlates of Attempted Suicide Among Young Aboriginal People Who Use Injection and Non-injection Drugs in Two Canadian Cities', *International Journal of Circumpolar Health* 68(3): 261-73.
- Conner, K.R. and D.B. Goldston (2007) 'Rates of suicide among males increase steadily from age 11 to 21: Developmental framework and outline for prevention', *Aggression and Violent Behavior* 12(2): 193-207.
- Cox, L. (2010) 'Queensland Aborigines, Multiple Realities and the Social Sources of Suffering Part 2 Suicide, Spirits and Symbolism', *Oceania* 80(3): 241-62.

- Daniel, S.S., A.K. Walsh, D.B. Goldston, E.M. Arnold, B.A. Reboussin and F.B. Wood (2006) 'Suicidality, school dropout, and reading problems among adolescents', *Journal of Learning Disabilities* 39(6): 507-14.
- Davidson, J.A. (2003) 'Presentation of near-hanging to an emergency department in the Northern Territory', *Emergency Medicine* 15(1): 28-31.
- de Leo, D. and T. Heller (2008) 'Social modeling in the transmission of suicidality', *Crisis: The Journal of Crisis Intervention and Suicide Prevention* 29(1): 11-9.
- Dervic, K., D.A. Brent and M.A. Oquendo (2008) 'Completed Suicide in Childhood', *Psychiatric Clinics of North America* 31(2): 271-91.
- Egge, M.K., C.D. Berkowitz, C. Toms and L. Sathyavagiswaran (2010) 'The Choking Game A Cause of Unintentional Strangulation', *Pediatric Emergency Care* 26(3): 206-8.
- Enns, M.W., B.J. Cox, T.O. Afifi, R. De Graaf, M. Ten Have and J. Sareen (2006) 'Childhood adversities and risk for suicidal ideation and attempts: a longitudinal population-based study', *Psychological Medicine* 36(12): 1769-78.
- FaCHSIA (2011) *Closing the Gap in the Northern Territory Monitoring Report: January – June 2011, Part Two*. Canberra: Department of Families, Housing, Community Services and Indigenous Affairs, Australian Government.
- Farrelly, T. and K. Francis (2009) 'Definitions of Suicide and Self-Harm Behavior in an Australian Aboriginal Community', *Suicide and Life-Threatening Behavior* 39(2): 182-9.
- Fergusson, D.M. and M.T. Lynskey (1995) 'Childhood Circumstances, Adolescent Adjustment, and Suicide Attempts in a New Zealand Birth Cohort.', *Journal of the American Academy of Child & Adolescent Psychiatry* May 34(5): 612-22.
- Fortune, S. and H. Clarkson (2006) 'The role of child and adolescent mental health services in suicide prevention in New Zealand', *Australasian Psychiatry* 14(4): 369-73.
- Goodwin, R.D., A.L. Beautrais and D.M. Fergusson (2004) 'Familial transmission of suicidal ideation and suicide attempts: evidence from a general population sample', *Psychiatry Research* 126(2): 159-65.
- Gould, M.S., S. Wallenstein and L. Davidson (1989) 'Suicide Clusters: A Critical Review', *Suicide and Life-Threatening Behavior* 19(1): 17-29.
- Gould, M.S., S. Wallenstein and M. Kleinman (1990a) 'Time-Space Clustering of Teenage Suicide', *American Journal of Epidemiology* 131(1): 71-8.
- Gould, M.S., S. Wallenstein, M.H. Kleinman, P. O'Carroll and J. Mercy (1990b) 'Suicide clusters: an examination of age-specific effects', *American Journal of Public Health* 80(2): 211-2.
- Gould, M.S. and R.A. Kramer (2001) 'Youth Suicide Prevention', *Suicide and Life-Threatening Behavior* 31: 6-31.
- Gould, M.S., T.E.D. Greenberg, D.M. Velting and D. Shaffer (2003) 'Youth Suicide Risk and Preventive Interventions: A Review of the Past 10 Years', *Journal of the American Academy of Child & Adolescent Psychiatry* 42(4): 386-405.
- Gould, M.S., T. Greenberg, D.M. Velting and D. Shaffer (2006) 'Youth suicide: a review', *Prevention Researcher* 13(3): 3-7.
- Graham, A., J. Reser, C. Scuderi, S. Zubrick, M. Smith and B. Turley (2000) 'Suicide: An Australian psychological society discussion paper', *Australian Psychologist* 35(1): 1 - 28.
- Greening, L., L. Stoppelbein, P. Fite, D. Dhossche, S. Erath, J. Brown, R. Cramer and L. Young (2008) 'Pathways to suicidal behaviors in childhood', *Suicide & Life-Threatening Behavior* 38(1): 35-45.
- Grøholt, B. and Ø. Ekeberg (2003) 'Suicide in young people under 15 years: Problems of classification', *Nordic Journal Of Psychiatry* 57(6): 411-7.

- Grossi, V. and C. Violato (1992) 'Attempted suicide among adolescents: A stepwise discriminant analysis', *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement* 24(3): 410-3.
- Hanssens, L. (2008a) 'Imitation and Contagion Contributing to Suicide Clustering in Indigenous Communities: Time-space-method Cluster Analysis', *Aboriginal and Islander Health Worker Journal* 32(3): 28-35.
- Hanssens, L. (2008b) 'Clusters of Suicide ... : The Need for a Comprehensive Postvention Response to Sorrow in Indigenous Communities in the Northern Territory', *Aboriginal and Islander Health Worker Journal* 32(2): 25-33.
- Hanssens, L. (2010) 'Echo Clusters' - Are they a Unique Phenomenon of Indigenous Attempted and Completed Suicide?', *Aboriginal and Islander Health Worker Journal* 34(1): 17-26.
- Hawton, K. and K. Heeringen (2000) *The International Handbook of Suicide and Attempted Suicide*. Chichester, England: John Wiley & Sons, Ltd.
- Hazell, P. (1993) 'Adolescent Suicide Clusters: Evidence, Mechanisms and Prevention', *Australian and New Zealand Journal of Psychiatry* 27(4): 653-65.
- Hillman, S.D., S.R. Silburn, S.R. Zubrick and H. Nguyen (2000) *Suicide in Western Australia, 1986 to 1997*. Perth, WA: Youth Suicide Advisory Committee, TVW Telethon Institute for Child Health Research Centre for Child Health Research, Faculty of Medicine and Dentistry, The University of Western Australia.
- Hills, A.L., B.J. Cox, L.A. McWilliams and J. Sareen (2005) 'Suicide attempts and externalizing psychopathology in a nationally representative sample', *Comprehensive Psychiatry* 46(5): 334-9.
- Hunter, E. (1990) 'Using a Socio-Historical Frame to Analyse Aboriginal Self-Destructive Behaviour', *Australian and New Zealand Journal of Psychiatry* 24(2): 191-8.
- Hunter, E. (1999) 'Considering the changing environment of Indigenous child development', *Australasian Psychiatry* 7(3): 137-40.
- Hunter, E., J.P. Reser, M. Baird and P. Reser (1999) *An Analysis of Suicide in Indigenous Communities of North Queensland: The Historical, Cultural and Symbolic Landscape*. Cairns: University of North Queensland.
- Hunter, E. and D. Harvey (2002) 'Indigenous suicide in Australia, New Zealand, Canada and the United States', *Emergency Medicine* 14(1): 14-23.
- Hunter, E. and H. Milroy (2006) 'Aboriginal and Torres Strait Islander Suicide in Context', *Archives of Suicide Research* 10(2): 141 - 57.
- Hunter, E.M. (1988) 'On Gordian Knots and Nooses', *Australian and New Zealand Journal of Psychiatry* 22(3): 264-71.
- Hunter, E.M. (1991) 'An Examination of Recent Suicides in Remote Australia: Further Information from the Kimberley', *Australian and New Zealand Journal of Psychiatry* 25(2): 197-202.
- Hunter, E.M. (1993) *Aboriginal health and history : power and prejudice in remote Australia*. Cambridge ; New York: Cambridge University Press.
- Isaac, M., B. Elias, L.Y. Katz, S.L. Belik, F.P. Deane, M.W. Enns and J. Sareen (2009) 'Gatekeeper training as a preventative intervention for suicide: a systematic review', *Canadian Journal Of Psychiatry* 54(4): 260-8.
- Johnson, B.A., D.A. Brent, J. Bridge and J. Connolly (1998) 'The familial aggregation of adolescent suicide attempts', *Acta Psychiatrica Scandinavica* 97(1): 18-24.
- Johnson, J.G., P. Cohen, M.S. Gould, S. Kasen, J. Brown and J.S. Brook (2002) 'Childhood Adversities, Interpersonal Difficulties, and Risk for Suicide Attempts During Late Adolescence and Early Adulthood', *Arch Gen Psychiatry* 59(8): 741-9.
- Kirmayer, L.J. (1994) 'Suicide Among Canadian Aboriginal Peoples', *Transcultural Psychiatry* 31(1): 3-58.

- Kirmayer, L.J., L.J. Boothroyd, A. Laliberté and B.L. Simpson (1999) *Suicide Prevention and Mental Health Promotion in First Nations and Inuit Communities*. Montreal: Culture & Mental Health Research Unit, Institute of Community & Family Psychiatry (9).
- Kirmayer, L.J., G.M. Brass and C.L. Tait (2000) 'The Mental Health of Aboriginal Peoples: Transformations of Identity and Community', *Canadian Journal Of Psychiatry* 45(7): 607-16.
- Kosky, R.J. (1982) 'Suicide and attempted suicide among Australian children', *Medical Journal of Australia* 1(3): 124-6.
- Kosky, R.J. and P. Dundas (2000) 'Death by hanging: implications for prevention of an important method of youth suicide', *Australian & New Zealand Journal of Psychiatry* 34(5): 836-41.
- Kreitman, N., P. Smith and E.-S. Tan (1969) 'Attempted suicide in social networks', *British Journal of Preventative and Social Medicine* 23(2): 116-23.
- LaFromboise, T.D. and H.A. Lewis (2008) 'The Zuni Life Skills Development Program: A School/Community-Based Suicide Prevention Intervention', *Suicide and Life-Threatening Behavior* 38(3): 343-53.
- Lessard, J.C. and M.M. Moretti (1998) 'Suicidal ideation in an adolescent clinical sample: attachment patterns and clinical implications', *Journal of Adolescence* 21(4): 383-95.
- Mandelli, L., V. Carli, A. Roy, A. Serretti and M. Sarchiapone (2011) 'The influence of childhood trauma on the onset and repetition of suicidal behavior: An investigation in a high risk sample of male prisoners', *Journal of Psychiatric Research* 45(6): 742-7.
- McCoy, B. (2007) 'Suicide and desert men: the power and protection of kanyirninpa (holding)', *Australasian Psychiatry* 15(s1): S63-S7.
- McCoy, B. (2008) *Holding men : kanyirninpa and the health of Aboriginal men*. Canberra: Aboriginal Studies Press.
- McKay, K., K. Kólves, H. Klieve and D. de Leo (2010) *Building Bridges: Learning from the Experts. Evaluation Report*. Cairns: Centre for Rural & Remote Mental Health.
- Measey, M.-A., S.Q. Li, R. Parker and Z. Wang (2006) 'Suicide in the Northern Territory, 1981-2002', *Medical Journal of Australia* 185(6): 315-9.
- Melhem, N.M., D.A. Brent, M. Ziegler, S. Iyengar, D. Kolko, M. Oquendo, B. Birmaher, A. Burke, J. Zelazny, B. Stanley and J.J. Mann (2007) 'Familial Pathways to Early-Onset Suicidal Behavior: Familial and Individual Antecedents of Suicidal Behavior', *Am J Psychiatry* 164(9): 1364-70.
- Middlebrook, D.L., P.L. LeMaster, J. Beals, D.K. Novins and S.M. Manson (2001) 'Suicide Prevention in American Indian and Alaska Native Communities: A Critical Review of Programs', *Suicide and Life-Threatening Behavior* 31: 132-49.
- Mignone, J. and J. O'Neil (2005) 'Social capital and youth suicide risk factors in First Nations communities', *Canadian Journal Of Public Health. Revue Canadienne De Santé Publique* 96 Suppl 1: S51-S4.
- Mittendorfer-Rutz, E., F. Rasmussen and D. Wasserman (2008) 'Familial clustering of suicidal behaviour and psychopathology in young suicide attempters', *Social Psychiatry and Psychiatric Epidemiology* 43(1): 28-36.
- Molnar, B.E., L.F. Berkman and S.L. Buka (2001) 'Psychopathology, childhood sexual abuse and other childhood adversities: relative links to subsequent suicidal behaviour in the US', *Psychological Medicine* 31(06): 965-77.
- Norris, G. (2005) *Tiwi Island asphyxial games*. Personal communication.
- Northern Territory Coroner (1999) *Case no. 9817541, 9817544, 9823271, 9825948: Inquest into the deaths of GARY PETER TIPUNGWUTI, PATRICK RAYMOND KERINAIUA, NOELENE PUANTULURA & JOHN GERARD ORSTO*. Darwin: Northern Territory Coroner.

- Northern Territory Coroner (2009) *Inquest into the death of KUNMANARA FORBES [2009] NTMC 024*. Darwin: Northern Territory Coroner.
- Northern Territory Government (2010) *Growing them Strong, Together: Promoting the safety and wellbeing of the Northern Territory's children*. Report of the Board of Inquiry into the Child Protection System in the Northern Territory 2010, M. Bamblett, H. Bath and R. Roseby. Darwin: Northern Territory Government.
- Novins, D.K., J. Beals, R.E. Roberts and S.M. Manson (1999) 'Factors Associated with Suicide Ideation among American Indian Adolescents: Does Culture Matter?', *Suicide and Life-Threatening Behavior* 29(4): 332-46.
- NT CDRPC (2010) *Annual Report 2009-2010, Northern Territory Child Deaths Review and Prevention Committee*. Darwin: Child Deaths Review and Prevention Committee, Office of the Children's Commissioner.
- Parker, R. (1999) *An audit of coronial records for the "Top End" of the Northern Territory comparing factors in Aboriginal suicide against other suicides in the region* Dissertation, Royal Australian and New Zealand College of Psychiatrists.
- Parker, R. and D.I. Ben-Tovim (2002) 'A study of factors affecting suicide in Aboriginal and 'other' populations in the Top End of the Northern Territory through an audit of coronial records', *Australian & New Zealand Journal of Psychiatry* 36(3): 404-10.
- Pearce, M.E., W.M. Christian, K. Patterson, K. Norris, A. Moniruzzaman, K.J.P. Craib, M.T. Schechter and P.M. Spittal (2008) 'The Cedar Project: Historical trauma, sexual abuse and HIV risk among young Aboriginal people who use injection and non-injection drugs in two Canadian cities', *Social Science & Medicine* 66(11): 2185-94.
- Pfeffer, C.R. (1981) 'The Family System of Suicidal Children', *American Journal of Psychotherapy* 35(3): 330.
- Pfeffer, C.R., J. Newcorn, G. Kaplan, M.S. Mizruchi and R. Plutchik (1989) 'Subtypes of Suicidal and Assaultive Behaviors in Adolescent Psychiatric Inpatients: A Research Note', *Journal of Child Psychology and Psychiatry* 30(1): 151-63.
- Pfeffer, C.R. (2000) 'Suicidal Behaviour in Children', pp. 237-48 in K. Hawton and K. Heeringen (eds) *The International Handbook of Suicide and Attempted Suicide*. Chichester, England: John Wiley & Sons, Ltd.
- Pridmore, S. and H. Fujiyama (2009) 'Suicide in the Northern Territory, 2001-2006', *Australian and New Zealand Journal of Psychiatry* 43(12): 1126-30.
- Qi, X., S. Tong and W. Hu (2009) 'Preliminary spatiotemporal analysis of the association between socio-environmental factors and suicide', *Environmental Health* 8(1): 46.
- Randell, B.P., W. Wen-Ling, J.R. Herting and L.L. Eggert (2006) 'Family Factors Predicting Categories of Suicide Risk', *Journal of Child & Family Studies* 15(3): 247-62.
- Reser, J. (1991) 'Aboriginal mental health: conflicting cultural perspectives', in J. Reid and P. Trompf (eds) *The Health of Aboriginal Australia*. Sydney: Harcourt Brace Jovanovich.
- Robbins, D. and R.C. Conroy (1983) 'A cluster of adolescent suicide attempts: Is suicide contagious?', *Journal of Adolescent Health Care* 3(4): 253-5.
- Robinson, G. (1990) 'Separation, Retaliation and Suicide: Mourning and the Conflicts of Young Tiwi Men', *Oceania* 60: 161.
- Robinson, G. (1995) 'Violence, social differentiation and the self', *Oceania* 65(4): 323.
- Robinson, G. (2005a) 'No Way to Be: Violent and Suicidal Youth', in T. Lea and B. Wilson (eds) *The state of the north : a selection of papers from the 2003 Charles Darwin Symposia*. Darwin: Charles Darwin University Press.

- Robinson, G. (2005b) 'Anthropology, Explanation and Intervention: Risk and Resilience in a Parent- and Child-Focused Program', *Anthropological Forum* 15(1): 3-25.
- Robinson, G. and B. Tyler (2006) *Ngaripirliga'ajirri: An early intervention program on the Tiwi Islands, Final Evaluation Report*. Darwin: School for Social and Policy Research, Charles Darwin University.
- Robinson, G. (2008) 'Vulnerabilities, Families and Child Development: Crises affecting the young in a north Australian community', in G. Robinson, J. Goodnow, I. Katz and U. Eickelkamp (eds) *Contexts of Child Development: Culture, Policy and Intervention*. Darwin: CDU Press.
- Robinson, G., S. Zubrick, S. Silburn, W. Tyler, Y. Jones, A. D'Aprano, K. McGuinness, C. Cubillo, M. Bell and C. Stock (2009) *Let's Start: Exploring Together. An early intervention program for Northern Territory children and families*. Darwin: School for Social and Policy Research, Charles Darwin University.
- Roy, A. and M. Janal (2005) 'Family history of suicide, female sex, and childhood trauma: separate or interacting risk factors for attempts at suicide?', *Acta Psychiatrica Scandinavica* 112(5): 367-71.
- Roy, A. (2011) 'Combination of family history of suicidal behavior and childhood trauma may represent correlate of increased suicide risk', *Journal of Affective Disorders* 130(1-2): 205-8.
- Sankey, M. and R. Lawrence (2005) 'Brief report: Classification of adolescent suicide and risk-taking deaths', *Journal of Adolescence* 28(6): 781-5.
- Sansom, B. (1980) *The camp at Wallaby Cross : Aboriginal fringe dwellers in Darwin*. Canberra: Australian Institute of Aboriginal Studies.
- Shaffer, D. (1974) 'SUICIDE IN CHILDHOOD AND EARLY ADOLESCENCE', *Journal of Child Psychology and Psychiatry* 15(4): 275-91.
- Silburn, S.R., G. Robinson, F. Arney, K. Johnstone and K. McGuinness (2011) *Early childhood development in the NT: Issues to be addressed*. Darwin: Northern Territory Government.
- Steele, M.M. and T. Doey (2007) 'Suicidal Behaviour in Children and Adolescents. Part 1: Etiology and Risk Factors', *Canadian Journal of Psychiatry* 52: 21S-33S.
- Taylor, J. (2010) *Demography as destiny: Schooling, work and Aboriginal population change at Wadeye*. Canberra: Centre for Aboriginal Economic Policy Research.
- Toumbourou, J.W. and M.E. Gregg (2002) 'Impact of an empowerment-based parent education program on the reduction of youth suicide risk factors', *Journal of Adolescent Health* 31(3): 277-85.
- Vinnerljung, B., A. Hjern and F. Lindblad (2006) 'Suicide attempts and severe psychiatric morbidity among former child welfare clients – a national cohort study', *Journal of Child Psychology and Psychiatry* 47(7): 723-33.
- Violato, C. and J. Arato (2004) 'Childhood Attachment and Adolescent Suicide: A Stepwise Discriminant Analysis in a Case- Comparison Study', *Individual Differences Research* 2(3): 162-8.
- Ward, B.W. and A.D. Nelson (2008) *A Science of "Suicide": Classifications and Circumstances of Violent Poisonings*. Sheraton Boston and the Boston Marriott Copley Place, Boston, MA.
- Wexler, L.M. (2006) 'Inupiat youth suicide and culture loss: Changing community conversations for prevention', *Social Science & Medicine* 63(11): 2938-48.
- Wild, R. and P. Anderson (2007) *Ampe Akelyernemane Meke Mekarle "Little Children are Sacred": Report of the Northern Territory Board of Inquiry into the Protection of Aboriginal Children from Sexual Abuse*. Darwin: Northern Territory Government.

- Wilde, E.J.d. (2000) 'Adolescent Suicidal Behaviour: a General Population Perspective', pp. 249-60 in K. Hawton and K. Heeringen (eds) *The International Handbook of Suicide and Attempted Suicide*. Chichester, England: John Wiley & Sons, Ltd.
- Zalsman, G., T. Levy and G. Shoval (2008) 'Interaction of Child and Family Psychopathology Leading to Suicidal Behavior', *Psychiatric Clinics of North America* 31(2): 237-46.



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