# "Echo Clusters" – Are they a Unique Phenomenon of Indigenous Attempted and Completed Suicide?

**LEONORE HANSSENS**

*BN, Grad Dip PHC, Grad Cert HP, MPHC (Flinders Uni), PhD Researcher - Indigenous Suicide, Northern Territory.*

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**Abstract**

*Background:* During the analysis of coroners records there appeared to be intensive clustering of completed suicide resulting from contagion. "Echo clusters" have been statistically verified by previous analysis but to what extent attempted suicide and contagion effect were stimulating the phenomenon was yet to be explored.

*Method:* Review of Coroners reports 1991 – 2007, academic studies, reports from committees of inquiry, grey literature and interviews with front line workers were explored for further evidence of the "Echo cluster" phenomenon.

*Results:* Twelve clusters involving two to three suicides per cluster, resulting in thirty-three deaths, were identified on one remote island community demonstrating "Echo cluster" phenomenon. They occurred in just over a decade 1997 – 2007, but were in the context of multiple suicide attempts, as many as seven per week, at the height of the contagion. Other regions experienced the same intensity of suicidal activity, for shorter periods of time, but resulting in the same clustering of attempted suicides around a completed suicide, which in turn were part of a cluster of completed suicides. Familial and imitative behavioural contagion was identified in most Indigenous settings contributing to clusters of attempted and completed suicide. Familial contagion was identified as a factor for suicide occurring in town camps surrounding a remote large town and links were established between four families who together lost fifteen members of their family to suicide from 1998 to 2007. A common factor for nearly all deaths was alcohol and substance abuse, with many of the victims either intoxicated or in severe withdrawal when attempting or completing suicide; other main factors were ubiquitous unemployment, and poverty.

*Conclusion:* Suicides have echoed through communities in the Top End of Australia and it appears from the research that contagion, both familial and imitative behavioural contagion, is integral to the process of clustering for both attempted and completed suicides. "Echo clusters" of completed suicide appear when the intensity of attempted suicide reaches a critical threshold and when the community is no longer able to contain the contagion and respond to the frequency of attempted suicide. Therefore suicide clustering may be considered a risk factor for suicide in Indigenous settings which distinguishes suicide clustering from all other clusters of fatal diseases or illness. Postvention support and response plans are necessary to respond to contagion and prevent cluster suicides.

**Background**

Clustering of suicides is dramatically impacting on Indigenous towns and communities in urban, rural and remote Australia [1,2,3]. A suicide cluster refers to an excessive number of suicides, usually two or more, which occur in close temporal and geographic proximity [4]. McKenzie (2005) states that assuming the temporal, geographic and interpersonal proximity for reach of news of suicide, these factors can precipitate imitative suicidal behaviour [5]. A new phenomenon has been identified through this research into Indigenous suicide in the Northern Territory (NT) referred to as 'Echo clusters', which are subsequent but distinct clusters of completed suicide occurring after the initial suicide cluster [3].

Together with McKenzie (2007) data of completed suicide from Australian Bureau of Statistics and National Coroners Information System was analysed and showed time-space and time-space-method clustering and imitative suicides [6,3]. The time-space cluster analysis found imitation at 12.5% but if method is included, (hanging method used by 86% of Indigenous suicide victims) time-space-method clustering rises to about 21% at 360 days and still rising at 540 days, providing indirect evidence of the cluster phenomenon. The still rising estimated percentage of imitative suicides as the time extends beyond 360 days when one would expect it to begin to level off, indicates further imitative suicides and thus persuasive evidence of the 'Echo cluster' phenomenon [7, 6, 3].

There is now evidence emerging that while completed suicides are clustering in Indigenous settings, they occur within a backdrop of intensive clusters of attempted suicide which may contribute to the 'Echo cluster' phenomenon. Gould & colleagues (1994) suggest that the extent to which clusters of attempted suicide occur is a significant problem which requires further research on the nature of clustering of attempted suicides [8]. Other factors of concern are the post suicide event violence within communities which is reaching a critical point, often fuelled by alcohol and substance abuse, with women and children often the main recipients. Suicide contagion appears to be intergenerational and emergent in imitation of suicide method, particularly in the very young [9, 10, 11]. McKenzie (2005) suggests the extent to which clusters of completed suicide occur is complementary to the clustering of attempted suicide [5, 8].

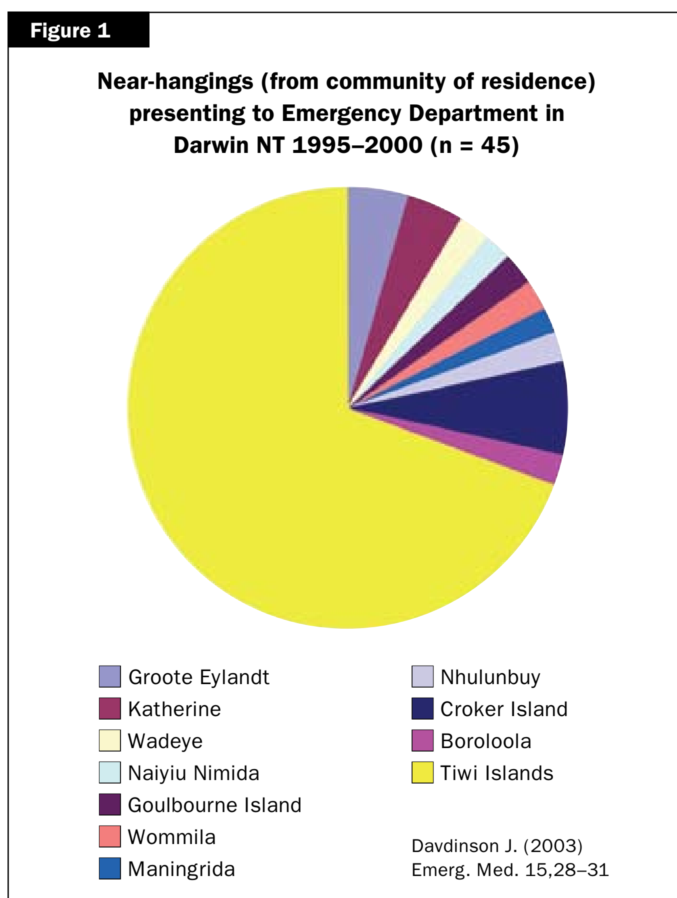
The research into clusters of suicide and contagion effect within Indigenous communities in the Northern Territory is a tragic account reflecting the impact of social and cultural change for Indigenous families and communities. It has identified several "hotspots" for echo clusters emerging in both the Top End and Central Australian towns and communities in

the NT. For example, from the mid-1990s the Tiwi Islands had a dramatic increase in the number of completed suicides, many occurring in clusters, demonstrating the suicide "echo cluster" phenomenon. There have been 43 completed suicides on the islands but suicide attempts were far more numerous and appear to be the result of a convergence of several factors. The analysis of Indigenous suicide in the Northern Territory offers an explanation for the observed clustering, contagion and imitation in relation to Indigenous suicide, but the converging factors such as geographical isolation, poverty and deprivation, alcohol and illicit drug supply and demand, family and community violence, unremitting 'sorry business', have contributed to these echo clusters [3, 9, 10, 11, 12, 13]. These factors exist within the broader context of the social, emotional, physical, cultural, spiritual, economic determinants of Indigenous suicide. Kickbusch (2008) describes determinants as what predispose, enable and reinforce the social, physical, environmental lifestyle and living conditions impacting on wellbeing and may also reinforce suicidal behaviour [14, 15].

Parker (1999) in his RANZCP dissertation recommended that tracking and monitoring the trends of "Northern Territory suicides through coronial records using a system of surveillance similar to the Western Australian Coronial database" should occur [16]. Measey, Parker et al (2006) in a follow-up study, reported that Indigenous male suicide had increased by 800% in two decades [17]. The National Coroners Information System (NCIS) electronic database system was developed in 2000 and by utilising this system the recommended surveillance of suicide trends has begun. An Access Agreement from 2006 to 2009 was granted for this research by the Victorian Institute Forensic Medicine (VIFM), which has allowed access to NICS data and the monitoring of Indigenous suicide in the Northern Territory [18]. The research also includes retrospective data from 1992 to 2000 from the NT Coroners Office (NTCO). Hunter et al (1999) and (2003) suggests that as the "phenomenon of Indigenous suicide moves rapidly through traditionally-orientated communities of the Northern Territory" a clearer understanding of Indigenous suicide is required to tailor intervention, prevention and postvention strategies "to specific community need" [2, 19]. The Commonwealth Government's Select Committee on Substance Abuse (2003) recommended that "more research is urgently required to ascertain the correlation between substance abuse and suicide in NT communities" [20].

**Figure 1**

**Near-hangings (from community of residence) presenting to Emergency Department in Darwin NT 1995–2000 (n = 45)**




Davdinson J. (2003) Emerg. Med. 15,28–31

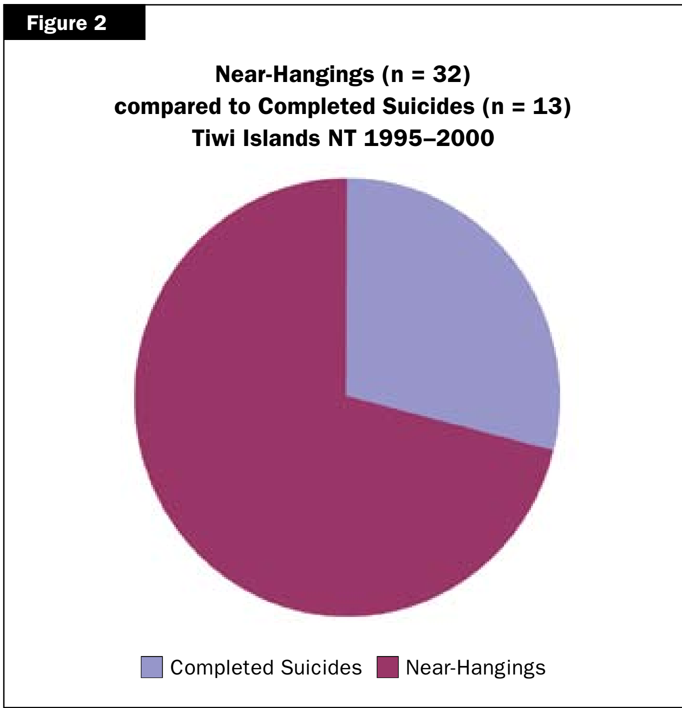
## Methods

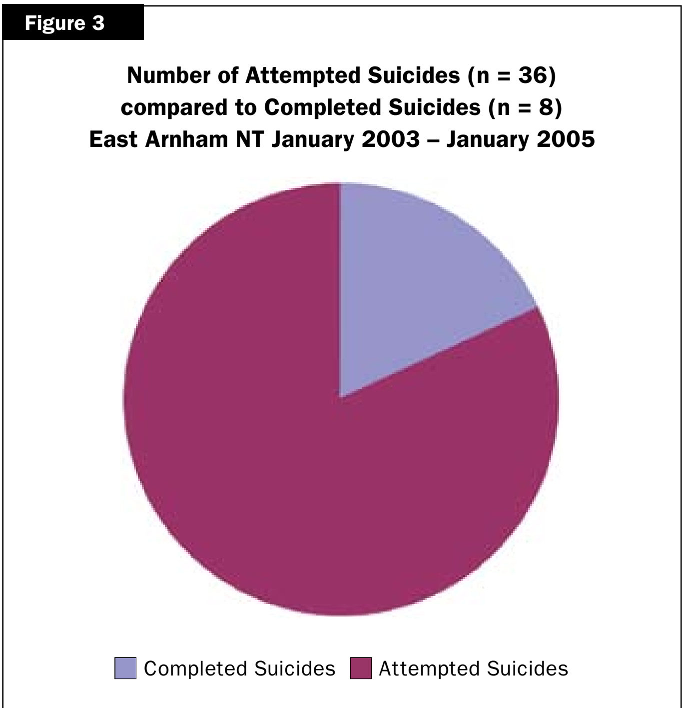
Exploration of the nature of suicide clustering and whether it is closely connected to the clustering of attempted suicides is being considered by the review of several relevant academic studies, reports and grey literature. The admission of suicide attempters to psychiatric wards often mirrors local experiences in NT Indigenous communities; therefore hospital admission and separation data from various regions in the NT will be examined. The relationship between the clustering of attempted suicides and completed suicides will be explored by tracking attempted and completed suicide data from police reports, coroners' records and interviews. Suicide contagion and its effect on Indigenous families and communities will be identified through coronial records from NTCO and NCIS to track and identify trends in Indigenous suicide, patterns of clustering and the process of contagion of suicide over time. Personal communications from community leaders and interviews with frontline staff in communities where "echo clusters" have occurred is provided as supporting evidence.

## Review of results

Parker (2005) identified Mental Health Inpatient hospital separation data (HSD) for attempted suicide or deliberate self-harm (DSH) per annum for the period between 1992 and 2002. The Barkly region's rate (including Tennant Creek) was 300 per 100,000; East Arnhem and Central Australian region's rate was 150 per 100,000 and Darwin Rural rate (including Tiwi Islands) was 100 per 100,000. Here it is important to note that an anomaly exists in the relationship between high rates of attempted and completed suicide on the Tiwi Islands and low rates of admission to the psychiatric inpatient unit at a 100 per 100,000. Parker (2005) also noted in NT urban and rural locations, for example East Arnhem, the significant association between self harming behaviour and completed suicide [21]. Overall, the hospital separation data for the period between 1992 and 2002 showed that Indigenous deliberate self harm hospital separations had increased from 100 per 100,000 to 500 per 100,000 in the NT. Since 2002/2003 the Mental Health Inpatient hospital separation data by Indigenous status per 100,000 for mental and behavioural disorders has increased from 67% (700 per 100,000) to an estimated 86% (1100 per 100,000) by the end of June 2005. The NT Government Submission to the Commonwealth Senate Select Committee on Mental Health (2005) demonstrated that the level of consumption of public mental health services by Indigenous people in the NT had increased by 53% from 1999/2000 to 2004/2005 [21, 22].

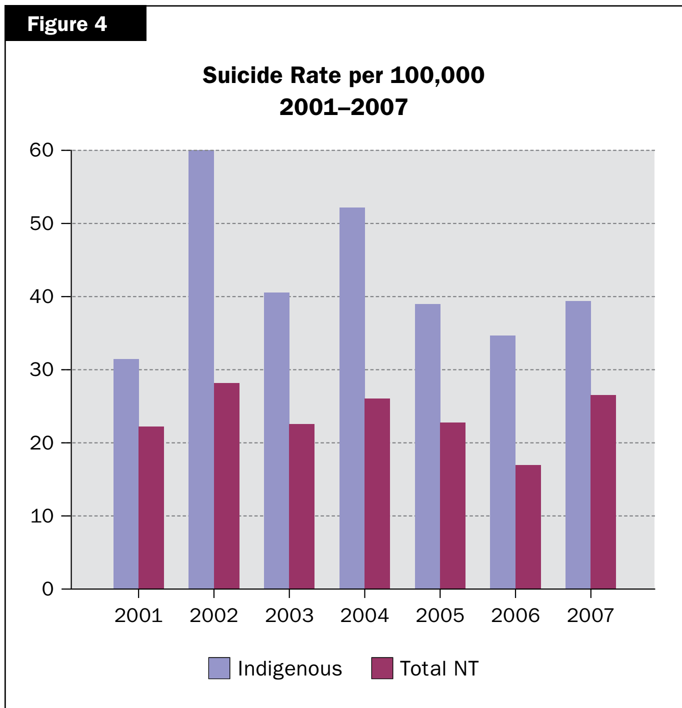
Davidson (2003) investigated near-hangings in the Top End of the Northern Territory from 1996 to 2000 and reported 45 near-hangings of which 32 were from the Tiwi Islands. She examined




the medical evacuations received into Royal Darwin Hospital over the five-year period and was alarmed at the number of near hangings from the Tiwi Islands compared to other Indigenous communities. Analysis of data (NTCO & NCIS) showed that there were 13 completed suicides of Tiwi Islanders for the same period 1995 to 2000, in the context of 32 near-hangings or serious attempted suicides, requiring medical evacuation [23]. (See Figures 1 and 2)

The coronial inquest into four deaths on the Tiwi Islands in 1998 cites a Northern Territory Police Sergeant, who provided evidence at the inquest, "that in the past twelve months he has been called out to over 50 suicide attempts". Of the four deaths, three were by hanging and one from falling from a power pole. In the same twelve months "the power station at Nguiu had to be shut down on over 40 occasions" because of suicide threats or attempts to climb power poles. Kantilla, cited by Apuatimi (2007), stated that on the Tiwi Islands during the height of suicide contagion on the islands between 2000 and 2004, the police, Aboriginal Health Workers and community were responding to seven attempted suicides per week [24]. Bates 2006 from SBS *Living Black*, interviewed a Tiwi Island Aboriginal Community Police Officer who corroborates these statements where he states that many of his own family had attempted suicide multiple times before completing [25]. DeLeo (2005) supports this statement where his research found that suicide risk can last a lifetime after the initial suicide attempt [26]. Persistently high rates of Indigenous suicide have continued in the Northern Territory, compared with all suicides. (See Table 1) (See Figure 4)




The Tiwi Islands, with a population of almost 2,500 islanders, considers the whole Indigenous community to be related as they are "one people", therefore familial contagion may always be a confounding factor contributing to clustering. From a review of coronial records familial contagion has contributed to forty-four suicides (n = 44) in less than two decades 1989–2008 with the majority thirty-eight (n = 38) occurring in just over a decade, between 1996–2006 [9]. The first two index suicides on the Tiwi Islands occurred prior to 1990 and Robinson (1990) states that the suicide of one of the young men led to a number of suicide attempts by his close friends and relations. Familial contagion occurred sometime later, with the brother of one of the suicide victims attempting suicide by climbing a power pole and was electrocuted, but survived [27]. This method was then to be copied multiple times either seriously or as a cry for help for many years to come. A completed suicide followed in 1992 and another in 1993, in the context of a significant increase in self-harm and suicide attempts of young men on the Tiwi Islands [16]. The fifth suicide in 1996 was a 'Death in Custody' and appears to be a defining moment for suicide on the Tiwi Islands.

The first cluster occurred in 1997 when two suicides occurred; one of the victims was the result of, and produced familial contagion. The victim's father had attempted suicide

**Table 1 ECHO CLUSTERS TIWI ISLANDS (Population 2,400) Indigenous Suicides (n = 44)**

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| FEB | | | | | | | | | | | | ◆*◆* | |
| JAN | ▲▲ | | | | | | | | | ▲ | | ▲* | ▲ |

**Legend:** Clustering of Completed Suicides on Tiwi Islands communities

▲ Nguiu
◆ Milikapiti
▲ Wuranku
◆ Pirlimgimpi

* did not complete suicide on Tiwi Islands but contagion verified
** non-Indigenous partnered with Indigenous Tiwi Islander
*** Tiwi youth grew up in Darwin but completed suicide on Tiwi Islands
# body found in December

earlier in the day and later that same day the victim completed, and his cousin subsequently completed suicide five years later. The second cluster occurred in 1998 with the deaths of the "Tiwi Four", and a unique phenomenon developed that required a new definition to describe the pattern of cluster suicides now referred to as "echo clusters"[3]. In 1999 the third cluster occurred, a cluster of three suicides, one producing familial contagion in the family of a relative the following year. In 2000 the fourth cluster of two suicides occurred, including the contagion suicide. During this period from 1996 to 2000 there were 32 "near-hangings" medically evacuated from the Tiwi Islands. Only one suicide occurred in 2001, a prominent coach of a Tiwi football team, after which alcohol restrictions were imposed on the Nguiu Social Club. In January and February, the first two months of 2002, the fifth cluster occurred with three Tiwi Islanders completing suicide. Contagion was established as all three were well known to each other, having grown up together on Tiwi Islands, and with long problematic histories of alcohol and cannabis use. In May 2002, the sixth cluster occurred, with a further two suicides in the context of seven suicide attempts per week. In July/August the seventh cluster occurred with a further two suicides by hanging. In September 2002, within four days of each other, the eighth cluster occurred with another two suicides by hanging, and both victims were heavily intoxicated with both alcohol and cannabis. In January 2003, a Tiwi Islander completed suicide by hanging and in July another suicide by the same method providing evidence of contagion effect. From September to December 2003 the ninth cluster occurred with the suicides of three Tiwi Island men, all in the context of heavy intoxication of both alcohol and cannabis with intense violence surrounding their deaths. From September to November 2004, the tenth cluster occurred with three suicides, all by hanging, within a backdrop of escalating and unremitting suicide attempts on the islands. The eleventh cluster of three young men under 25 who completed suicide from June to November 2005 occurred; all being fit young men but heavily intoxicated with alcohol and cannabis at the time of their deaths. From late 2005 to April 2006 the twelfth cluster occurred when three Tiwi Islanders completed suicide in the context of numerous suicides attempts occurring on the islands. While there have been forty-four (n = 44) suicides of Tiwi Islanders since 1989, thirty-three (n = 33) were directly involved in clusters providing evidence of the 'Echo cluster' phenomenon, and almost all could be considered due to contagion. There has been one suicide death of Tiwi Islanders each year in 2007 and 2008, since major reductions in per capita supply and demand of alcohol and cannabis initiated by the Tiwi Islanders, an increased police presence and an increase in psychiatric services, with a psychiatric nurse located on the island and a regularly visiting psychiatrist. (See Table 1)

Scott-Clark & Levy (2006) cite the example that after a completed suicide in June 2005, within three weeks there were sixty (n = 60) "copycat" attempts. Threats and attempts to complete suicide continued with a completed suicide in October. Another suicide in November was the result of familial contagion, with the deceased's cousin completing suicide the previous year, and he disclosed to a friend just prior to his death that he "wanted to be like his cousin". Another suicide victim in November was not discovered until December and in the following January there were five attempted suicides, then a completed suicide followed by another six attempts in early February[28]. This pattern of contagion and imitative suicide attempts punctuated by a completed suicide is exemplified when in 2002 there were five suicides in five months in the context of unremitting attempts (approximately seven attempts per week). The experience on the Tiwi Islands provides evidence of widespread suicide contagion producing "echo clusters", and appears common during an extreme suicide crisis which continues to exist in some Indigenous communities in regional parts of Australia. Professor Diego DeLeo, quoted by Toy (2009), suggests that the fear is, that "one event influences the other and the end result is to normalize suicide in that particular group, and suicide should never be normalized at any level"[29]. (See Table 1)

| 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
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Examples of Clustering of Attempted Suicides in 2002 and July 2005 – April 2006:

▲ 7 attempts per week

60 60 attempts in July 2005

Fuller (2005) reported data on police interventions for attempted and completed suicide in a remote town in East Arnhem in the NT between 2002 and 2003. His data showed the intensive clustering of attempted suicide around each of the completed suicides. The numbers of attempted suicides were as many as six or seven, clustering around a completed suicide, which in turn were part of a cluster of completed suicides. An unusually dramatic contagion effect, imitation and clustering of suicides occurred after the significant death by motor vehicle accident, of a traditional land owner, a young man who would be the future leader of his people in the region. The outpouring of grief after this young man's death was profound and the concomitant suicide attempts and completed suicides persisted in clusters for some nine months after his death[30]. In late 2004 early 2005 suicides escalated yet again and included two suicides on the same day when the uncle of a suicide victim completed suicide by firearms after hearing of the suicide by hanging of his nephew that morning. The Select Committee on Substance Abuse (2003) reported that Nhulunbuy had an alcohol-related crime rate of 94% during 2001 and most suicides were in the context of high levels of alcohol and cannabis intoxication[20]. Families were dealing with overwhelming grief, not only losing their sons to suicide but tragically to motor vehicle accidents through alcohol abuse[31]. (See Figure 3) (See Table 2)

In the Katherine region there were three child deaths by hanging under the age of twelve years, with six suicide deaths by hanging in the 10 to 14 year age group for the period of the study. Mishara (1999) suggests that children learn about suicide by watching or discussing suicide with others[32]. Attempted suicide by children has been a feature of Indigenous suicide in all regions of the Northern Territory with children as young as eight and nine years attempting to hang themselves. Hunter & Harvey (2002) suggest that:

> "Given the cluster occurrence of suicide and the circumstances of Indigenous communities, many people, including children, will have witnessed the aftermath of a suicide, such as a hanging body. In this context, suicidal behaviour must necessarily be considered communicative (in life and in death)"[33]. (See Table 3)

Familial contagion has been observed within four interrelated and extended families in Alice Springs town camps and adjacent communities over a decade from 1998 to 2007. It resulted in fifteen suicide deaths (n = 15) providing evidence of the persistence of risk for suicide in some Indigenous families. The familial contagion occurred in the context of increasing number and frequency of Indigenous suicide in the region from 1993–2007, with a total of eighty (n = 80) completed suicides for the region. The suicides also occurred in the context of increasing high per capita consumption of alcohol in Alice Springs, as elsewhere in the NT. Chikritzhs et al (2007) stated that the NT was consuming 17.3 litres of pure alcohol per capita (15 years and over) and was 70% higher than the rest of Australia[34].

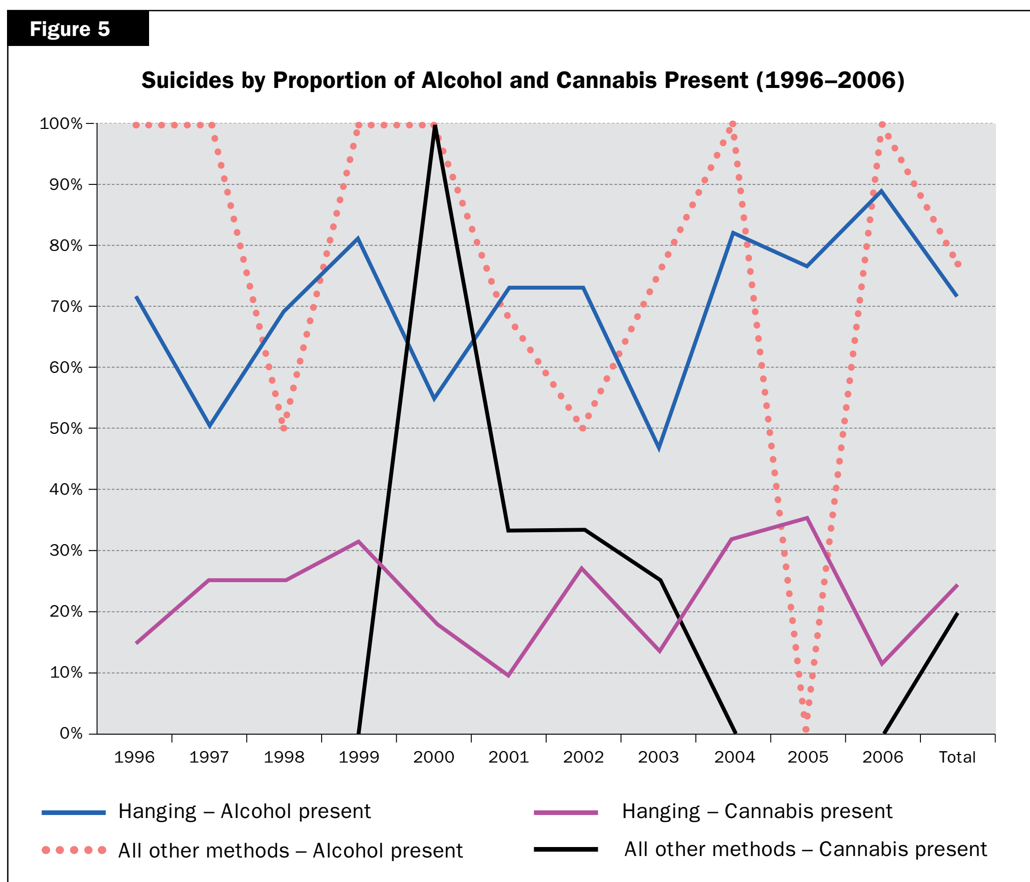

**Table 2 TRACKING CLUSTERS OF ATTEMPTED AND COMPLETED SUICIDE IN ARNHEM LAND**

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|
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| NOV | | | | | | | | | | | ◆ |
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**Legend:**

▲ Nhulunbuy Completed Suicides

▲ Nhulunbuy Attempted Suicides 2003–2004

◆ East Arnhem Suicide

◆ West Arnhem Suicide

+ MVA of young male but Traditional Land Owner

The "Alcohol Toll Reduction Bill" Senate Community Affairs Committee began tackling the rising per capita consumption of alcohol in the NT by investigating the use of restrictions and prohibitions [35]. (See Table 4)

Hanssens & Hanssens (2007) analysed NCIS data for completed suicides for the five year period from 2000–2005, with Tiwi Islands completed suicide rate at 112 per 100,000; Nhulunbuy 46 per 100,000; Central Australia 55 per 100,000. Hanssens (2007) also provided analysis of ABS CURF data and found that for the period from 1997–2000 and 2001–2005, death by external causes of mental and behavioural disorders relating to substance abuse, particularly alcohol, had increased in all categories. Hanssens (2007) found a relationship between hanging and alcohol use with 70% of hangings in the context of alcohol use, with 86% of all Indigenous suicides by hanging [9,10,11]. A similar relationship has been established between cannabis use and hanging with 25% of hangings in the context of cannabis use. Senior & Chenhall (2008) suggest that cannabis use among Indigenous males can be as high as 76%, and intensive and prolonged use with periods of drought contributing to the harmful physical and psychological effects of cannabis [36]. (See Figure 5)

## Discussion of results

"Echo Clusters" refers to a phenomenon of subsequent but distinct clusters of suicide occurring after the initial suicide cluster and is original research. A detailed analysis of Indigenous suicide data has been conducted with evidence of suicide clusters and "echo clusters" within various Indigenous settings including urban, rural and remote regional communities. The evidence of clusters within Aboriginal communities around the world is not new and clusters emerge when the breakdown of culture and community infrastructure reaches a critical threshold and Durkheim (1952) suggests that the presence of anomie in certain vulnerable people can be apparent [37]. When considering the past four decades of research around the world investigating similar populations and patterns of suicide, that is, fourth world peoples within first world countries, the following researchers: Ward & Fox (1977) [38]; O'Carroll & Mercy (1990) [39]; Davies & Wilkes (1993) [40]; Gould, Petrie, Kleinman & Wallenstein (1994) [41]; Malchy, Enns, Young, Cox (1997) [42]; Wilkie, Macdonald & Hildahl (1998) [43]; Tousignant (1998) [44]; Tatz (1999) [1]; Hunter, Reser Baird & Reser (1999) [2]; Hunter & Harvey (2002) [33], Wissow, Walkup, Barlow, Reid & Kane (2001) [45]; Coloma, Hoffman & Crosby (2006) [46]; Johansson, Lindqvist & Eriksson (2006) [47], refer to suicide clustering as a constantly reoccurring theme in the literature. Some researchers have referred to waves of suicide, but in this research, a difference was noticed in the patterning of the suicide clusters, in that distinct clusters persisted in the same location and over significant periods of time 3. Hence the term suicide "echo clusters" was used to describe the pattern of suicide in Indigenous communities in the Northern Territory [3].

The echo clusters within Indigenous communities, a recent phenomenon, began simultaneously in several hotspots, some more dramatically than others, in the Northern Territory. As the suicides echoed through the community they were almost impossible to contain, with the shock, disbelief and fear factors confounding even the most resilient within these communities

| 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
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to respond. From the early 1990s, suicides continued in the context of a significant increase in self-harm and suicide attempts of young men on the Tiwi Islands [16]. The fifth suicide in 1996 was a 'Death in Custody' but the recommendations from the Coronial Inquest were that it:

> *"Did not justify, on the grounds of relevance, an investigation into the excessive consumption of alcohol within the community, and in particular the problems being generated by the Nguiu Social Club on Bathurst Island".*
> (Transcript of Coronial Inquest 1999)

The Nguiu council president in 1996 was known and respected for his strong leadership and gave evidence at the Coronial Inquest in 1999 that alcohol abuse substantially contributed to the increasing suicide attempts at Nguiu. The council president called for an urgent "reduction in alcohol availability on the Tiwi Islands and in particular from the Nguiu Social Club". The evidence was ignored along with the request for an increased police presence at Nguiu. It was also 'not recommended' at the inquest that a non-Indigenous Police Officer be stationed at Nguiu to support the Aboriginal Community Police Officers, a community based scheme, because of issues relating to "self-determination and self-management" of the Tiwi people. This recommendation was not reversed until many years later when domestic violence, homicide and suicide rates escalated dramatically on the island community.

Familial contagion within Indigenous families, spanning more than ten years, has been identified as a feature of NT Indigenous suicide and suggests that for some Indigenous families there is a lifetime and intergenerational risk for suicide [3]. Coleman (1987) supports this finding in his study which revealed some families are particularly vulnerable to suicide contagion and Jones & Jones (1995) suggest the risk for behavioural contagion increases if someone in the person's vicinity exhibits the contagious behaviour [48, 49]. In 1998 the index suicide for the familial contagion was a male juvenile 'death in custody'. His death began a decade of familial contagion, with the Coronial Inquest in 1999 revealing that "underlying the death of this juvenile are the great social problems in Alice Springs caused by alcohol and cultural stress". The coroner continued, what "was absolutely alarming, ... he should never have been in custody" ... "Surely we have not reached the stage of sending children to prison ... to be cared for ... when there is no one else prepared to accept that responsibility". The contagion effect which subsequently occurred may be as much related to the determinants of suicide, for example, high levels of substance abuse in the context of severe social dysfunction and economic deprivation and others, as the suicide death itself. For example, the NT Select Committee on Substance Abuse Interim Report (2003) found that during 2001, Alice Springs had an alcohol related crime rate of 78% in the context of high Indigenous unemployment [50]. The clustering of suicide attempts around completed suicide depends on the family and communities' capacity to respond to attempted and completed suicide and their level of vicarious trauma and burnout [12].

Familial contagion was referred to by NT Indigenous representatives and families who had lost two generations of loved ones to suicide, at the Inaugural Postvention Conference in May 2007 Sydney, and again at the Aboriginal Suicide Prevention & Capacity Building Workshop June 2007 in Alice Springs. They were appealing for answers to the contagion effect within their families where loved ones had been so tragically lost to suicide. There was also a re-occurring appeal from the same representatives for steady, realistic, sustainable employment for Indigenous people, in whatever form that takes, so that Indigenous men and women can retrieve and retain their dignity and lift their families out of poverty [50].

There is a strong argument for increased postvention resources in Indigenous settings after suicide, or any trauma, whether it involve collectives within urban, rural or remote towns, Aboriginal communities, prisons, Indigenous tertiary institutions or (boarding) schools. Aboriginal people and families have cumulative grief, loss and trauma which are concurrent with acute bereavement, so cluster suicides may be both the result of, and a risk for, a complicated grief experience, and are often in the context of co-morbid depression, substance use, addictions and other chronic disease conditions. Families and communities need to have the opportunity to resolve the loss through a spiritual ritual and cultural processes to be able to then move on with strength [12].

## Healing the family by healing the community

Jiwa, Kelly & Pierre-Hansen (2008) suggest the only way to heal the individual is to heal the community, with Canadian first nation's communities implicating alcohol in 80% of suicide attempts and 60% of violent episodes [51]. Similarly, 77% of completed Indigenous suicides in the Northern Territory were in the context of alcohol, and many Indigenous people dying from alcohol-related injuries or conditions [10, 11, 34]. "Healing circles" are supportive of expressing grief in a safe environment but often families and communities are so traumatised after a suicide or cluster of suicides that the family and community may not be

**Table 3 TRACKING CLUSTERS INDIGENOUS SUICIDE – KATHERINE & TOP END WEST REGION**

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | | | ▲▲ | | | ▼ |
| NOV | | | | | | | | (▲)* | | | |
| OCT | | | | | | | | | | | |
| SEP | | | | ● | | | | | | | |
| AUG | | | | | | | | ✖ | | | ✖ |
| JUL | | | | ◆ | | | | | | | |
| JUN | | | | | | ▼ | | | | | |
| MAY | | | | | | | | | | | |
| APR | | | | | | | | | | | |
| MAR | | | | | | | | | | | |
| FEB | | | | ◆ | | | | | | | ▼ |
| JAN | | | | | | | | ● | | | |

**Legend:** Completed Suicides

- ◆ Daly River
- ■ Timber Ck/Lajamanu
- ● Katherine
- ▲ Bulman / Beswick
- ✖ Ngukurr
- ▼ Borroloola

(▲) Serious suicide attempt, jumped from top of power pole – survived as a paraplegic but died some time later.
* Katherine floods had an immediate impact on attempted and completed suicide
** Adelaide River completed suicide of 14-year-old male child by hanging
*** Outstation via Daly River completed suicide of male child on his 12th birthday
**** Katherine Aboriginal Alcohol Rehabilitation, accidental death by hanging of a 9-year-old female child, witnessed by a group of children.
***** Aboriginal community via Katherine, accidental death by hanging of a 6-year-old male while playing with another child, witnessed by family.

**Table 4 TRACKING SUICIDE CLUSTERS & FAMILIAL SUICIDE CONTAGION – CENTRAL AUSTRALIA**

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | | | | | ▲ | | | | | |
| NOV | | | | | | | | ▲▲▲ | | | ▲ |
| OCT | | | ▲ | | | | ▲ | | ▲ | ▲ | |
| SEP | | | | ▲ | | | | | ▲ | ▲ | |
| AUG | | | | | | | | | ▲▲ | | |
| JUL | | | | | | ▲▲ | ▲ | | | | ▲ |
| JUN | | | | | | | | | | | |
| MAY | | | | | | | | ▲ | | ▲ | |
| APR | | | | | | | | ▲ | | | |
| MAR | | | | | | | | 1 | ▲ | | ▲ |
| FEB | | | | | | | | ▲ | | | |
| JAN | | | | | | ▲▲ | | ▲ | | ▲▲ | |

**Legend:**

- ▲ Suicides – Alice Springs / Central Australia
- Family 1, 2, 3 & 4 Completed Suicides and Familial Contagion
- 1* Girlfriend of deceased male of Family 1
- 2* Female homicide victim of Family 2
- 2** Non-Indigenous female of Family 2

ready for healing or bereavement support [12]. Often the social, emotional, cultural, spiritual and political determinants of suicide preclude the resolution of grief and lead to a permanent state of "sorry business" and "sense of hopelessness" within communities [12]. This collective depression resulting from complicated grief results in dysfunctional communities and leads to ineffective decision making and cultural restitution. Chandler & Lalonde (1998) suggests providing "a hedge against suicide" in Canada's first nation's peoples through cultural continuity [52]. Jiwa, Kelly & Pierre-Hansen (2008) examined the inverse relationship between suicide rates and community efforts towards cultural preservation and community governance and found that as empowerment and self-efficacy increased, the suicides rates declined [51].

Too often attempts to heal communities and support families through bereavement and complicated grief in Indigenous settings are fraught with difficulties, because the level of trauma is so extensive, or unknown [53, 54]. But there is a moral imperative to respond and offer bereavement support for Indigenous families and communities who have lost many lives to suicide.

| 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| | | ● | | ◆** | |
| ■ | | | ◆ | ◆*** | |
| | | | | ● | ◆◆ |
| ● | ● | | | | |
| ▲ | | ■ | | | ◆ |
| | | ● | | | ▲ ● |
| | | ● ■ | | ▲ | |
| ◆ | | | | | |
| | | | | | |
| | ✖ ● | ◆ | | | |
| | | ● | | | ● |
| | | | | | |

| 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| ▲ | 1* | | ▲ | ▲▲ | ▲ |
| ▲ 3 | 1 | | | ▲ | |
| ▲▲▲ 3 | 3 | ▲▲ | | ▲ | |
| ▲ | | | 2 (3/4) | ▲ | ▲ |
| | | | ▲ (2/3) | ▲ | 1 |
| | | | | | ▲ |
| | | 3 | | | |
| ▲▲▲ | ▲ | | ▲ | ▲ | |
| | ▲ | ▲ 2 3 2* | | ▲ | |
| ▲ | 2 | ▲ | | ▲ | |
| 4 | ▲ | | | | |
| ▲ | | ▲▲ | 2** | | ▲ |

The "Promote Life" – Indigenous Postvention model presented at the recent 2nd Postvention Conference in Melbourne, May 2009, provides a platform for further development of suicide postvention[12]. In reality, few models of Indigenous suicide postvention support exist for Indigenous families and communities. Exploration and support of current models would be a practical response to suicide clusters and contagion. The determinants for Indigenous suicide are as complex as they are multi-faceted but are not incomprehensible, as human nature and suffering is the same for all peoples. What is lacking is the courage to address the determinants of Indigenous suicide with compassion and healing, and the underlying social disadvantage and poverty which results in so much despair[55].

## Conclusion

The research suggests that contagion, both familial and imitative behavioural contagion, is integral to the process of clustering for both attempted and completed suicides. "Echo clusters" of completed suicide appear when the intensity of attempted suicide reaches a critical threshold and when the community is no longer able to contain the contagion and respond to the frequency of attempted suicide. The shattering experience of "echo clusters", a unique phenomenon of Indigenous suicide particularly on the Tiwi Islands, appears to occur within a backdrop of intense attempted and completed suicide. Clustering of suicides, imitation of method and familial contagion, particularly in Alice Springs, has been a trial by suffering and acutest trauma for Indigenous families and communities in the Northern Territory, Australia. Alcohol and substance abuse appears to be a common factor in suicide-afflicted communities and from personal observation, communities where the suicide phenomenon is rare, are commonly alcohol restricted communities. Bereavement support for families and close friends and community members of the suicide victim, to prevent subsequent suicides and contain clusters and contagion is urgently required, and needs to be incorporated within a comprehensive postvention response for the bereaved. A cultural and family lens is required to be applied to decisions that affect Indigenous families and communities to heal Indigenous people.


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