Research into the Clustering Effect of Suicide Within Indigenous Communities, Northern Territory, Australia.

LEONORE HANSSSENS
PhD Student Charles Darwin University

PETER HANSSSENS
Charles Darwin University

Paper Presented at Postvention Conference May 24-26th Sydney, 2007

Objective: From recent studies we know that Indigenous suicide began to escalate rapidly in the Northern Territory (NT) in the mid-1990s but we don’t as yet know what triggered that rapid increase. This research paper examines whether clusters of suicide have always been a feature of suicide in Indigenous communities in the NT and if so whether they are the reason for the rapid increase. This phenomenon is unique, discrete and contained within a short time frame and by answering this question it may shed light onto the escalating physical, social and economic impacts that suicide is having within some communities in the NT and provide an evidence base for future interventions and policies.

Methods: The paper reports on first stage results from the full study, which has three stages. Data from 1996-2005 has been collected on all Indigenous suicides from the National Coroners Information System and Northern Territory Coroners Office records retrospectively to identify clusters. The statistical collation and analysis of this data is already completed. Future stages will conduct a psychological autopsy interview with family of the deceased and a control group identified. Discourse analysis of focus group interviews with elders in the final stage of the research will also assist in maintaining cultural integrity of the data collected.

Results: The results of the first stage show that the clustering of suicide far exceeds the normal distribution of suicide clusters across a population. In the ten-year period from 1996 to 2006 in the NT seventy-seven per cent of Indigenous suicides are identified within clusters. Between 2000 and 2005 ninety-one per cent of Indigenous suicides were male. Eighty-two per cent of Indigenous suicides were aged 15 to 64 years and seventy per cent were unemployed. It also shows that risk and protective factors are different, for example, there were no Indigenous suicide victims 50 years or older for the same period and that half the Indigenous suicide victims were married or in de facto relationships. Fifty per cent of total Indigenous suicides in the Northern Territory were potentially preventable from 1996-2005. A unique phenomenon referred to as “echo clusters” is apparent in one community.

Conclusions: Suicide clusters appear to be intensified within some discrete communities in the Northern Territory. Why and how this phenomenon has occurred continues to be the subject of the larger three-year research project of which this paper is reporting the first stage results. What is obvious is that Indigenous suicide does not fit the classic risk and protective factors that we see in other populations. Issues related to rapid social change appear to be impacting on a subgroup of the Northern Territory’s population who are young, Indigenous and male and who are married and unemployed.

Research into the clustering effect of suicide within Indigenous communities, Northern Territory, Australia.

The rate of Indigenous suicide is known to be higher than non-Indigenous suicide in Northern Territory (NT) for both male and female. What is also known is that the NT suicide rates have increased since the late 1980s and are now double the national rate. There is well-documented evidence that suicides can occur in clusters. This paper reports on the investigation of clusters of suicide in Indigenous communities, which may also explain and be related to the sudden increase in Indigenous suicide in the NT. It also reports on some risk and protective factors for suicide and aims to determine whether they are different for Indigenous people in the NT compared with the rest of Australia. From initial examination of National Coroners Information System (NCIS) data and an audit of Northern Territory coronial records the proposed clustering appears to be an ongoing feature of Indigenous suicide in the NT since the middle of the 1990s when suicide in NT Indigenous communities began to escalate rapidly. Gould et al suggest that temporal and geographic clustering of suicides does occur and represents the excess of suicides that would otherwise not have featured had not the clustering occurred and are suicides which could be prevented. In their studies among youth, cluster suicides account for at least five to ten percent of suicides although this is probably an underestimate.

Suicide clusters are defined as a group of suicides that occur closer together, than would normally be expected, in a given community. This study is part of a three-year investigation of suicide in Indigenous communities in the NT and will identify whether
there is a clustering of suicides occurring. The larger study will investigate whether a suicide contagion effect is operating within those clusters. The study will also explore the nature of the phenomenon referred to as “suicide contagion” within Indigenous communities and whether it is a risk factor for suicide. It will also identify other risk factors that are indicators of likely completed suicide within these Indigenous communities, for example, is hanging, as a method a behavioural risk factor? Finally, it will identify the role played by unresolved, traumatic grief and loss as a risk factor for suicide. The investigation will take place in the context of the role or relationship between community social cohesion, suicide contagion and cultural vulnerability within Indigenous communities in the Northern Territory, which are currently being subjected to major social changes.

Method

The full study involves a three-stage methodology but this paper reports on only the first stage. The researcher has used a combination of retrospective data from Northern Territory Coroner’s Office (NTCO) data 1996–2000 and National Coroners Information System (NCIS) data 2001–2005 to develop a database of all Indigenous suicides in the NT for the ten-year period. In stage two, a combination of both qualitative data from coroner’s narratives, quantitative data from both the NTCO and NCIS and interviews with the deceased using a psychological autopsy schedule will be undertaken. A control group of sudden deaths will be used to identify cultural differences relating to bereavement in each community where suicide clusters have occurred. In stage three a focus group of community elders will also be interviewed to gain greater insight into Indigenous suicide. The three-tiered mixed methodology is being used due to the complexity of the cultural component of the study.

Ethical Approval

Ethics approval has been gained from Charles Darwin University (CDU) the Human Research Ethics Committee (HREC) for the study with particular concern for the Indigenous culturally sensitive issues that are related to the research. Letters of support from Indigenous families, communities and senior representatives of Indigenous organisations in the NT have been sourced to begin this research. An Indigenous Reference Group is also supervising all stages and publications of the research. Permission was sought from the Deputy Coroner, NTCO (Northern Territory Department of Justice) to use data extracted from Coroner’s files with strict adherence to privacy and confidentiality. The Victorian Department of Justice, Victorian Institute of Forensic Medicine (VIFM), Human Research Ethics Committee has granted approval to gain access to the National Coroners Information System. An NCIS Access Agreement containing NCIS Privacy Protocols has been formally signed between CDU and VIFM. VIFM has provided the researcher access to the NCIS database for the duration of the study as an authorised user and as such is the first to use NCIS for research purposes in the NT. The NCIS is a world first in providing an internet accessible database of coronial information that is comprehensive, accurate, relevant, reliable, valid, and contemporary. It provides a “means of accessing quality data in a timely way that increases the potential for coronial information to contribute to a reduction in preventable death in Australia that will reduce both the emotional and financial burden of lost life in our community”.12

Stage 1 – Data Sources

Part 1 – Identifying clusters

In this first stage, data was compiled and collated from the Northern Territory Coroner’s Office (NTCO) and National Coroners Information System (NCIS). The data collected from the NTCO for the years 1996–2000 was in a raw form and an Excel database had to be developed with basic demographic data, Indigenous and non-Indigenous status, date of death, location of death and normal residence. The same data was extracted from NCIS 2001–2005 and entered into an Excel database and these were combined to give the ten year snapshot. Both NTCO and NCIS coronial records had to be examined manually to identify Indigenous status because NCIS data does not, at this point in time, provide demographic data on Indigenous status. The Indigenous status of the deceased suicide victim was identified and verified by examining each coronial record that was recorded as a suicide from 1996–2005, that is, the paper-based record from NTCO and the electronic record from NCIS. The date of death, location of death and normal residence data was examined to identify clusters of suicides.12 Other demographic data was extracted from NCIS 2001–2005 on age, gender, marital and employment status to identify trends, risk and protective factors.4

The “cell method”, developed by Ederer, Myers and Manuel (1984) cited in Gould et al.14 was used for analysis of data (date and location of death) to identify clusters and is a modified version of the time-space model.14 The time-space clustering method, that is, the “Cell method” is based on the maximum number of suicides within a “cell” defined by a combination of time and space units.14 It uses a classification of relative closeness in “time”, that is, two or more suicides occurring within three, six and twelve months of each other, and “space”, that is, within the same community or group of relatively homogenous communities, for example, a group of islands. Within the same location as clusters, we will identify a ‘sudden death’ control, which will be either a death caused by MVA, homicide, or other form of sudden death.11

The decision by the researcher on what constitutes a realistic time frame and space unit to locate and identify a cluster is explained. The social networks in Indigenous communities are close-knit with the population of larger communities ranging from approximately 500 to 2,500, the smaller outstations from 50 to 100 and town camps that vary in size.13 The space units therefore are identified as a main Aboriginal community with outstations, that is, a group of communities with the same language group, tribal affiliations or geographical boundaries, for example, the Tiwi Islands, or urban ‘Aboriginal town camps’ within a township, for example, Alice Springs.15 The “index” or first suicide to occur within the cluster is known to subsequent suicide victims within the cluster either directly, often related through family or indirectly known as a visitor to a community.14

Gould et al.14 cite a major limitation of this method, that is, the time units within which a cluster occurs are fixed, so to
make allowances for this limitation and because we are dealing
with such small populations, the time units are not fixed but
are instead flexible. Therefore, some smaller communities
have longer time units where suicide clusters have occurred
within a twelve to eighteen month time period. Whereas
other larger communities may have smaller time units where
suicide clusters have occurred within a six to nine months time
period.

Beskow et al. suggest that the location of the suicide
clusters is important and that not all communities are
homogenous and the ratio of completed suicide occurs "with
respect to the degree of urbanisation" and is a key issue. But
what is contingent on a group of two or more suicides
being a cluster is the knowledge of the previous suicide and
the medium by which that knowledge is transmitted.

Part 2 – Obtaining coroners reports & Interviewing
Coroners
The researcher has obtained reports (from NTCO & NCIS)
for each suicide victim within clusters and as necessary
interviewed the Coroner to explore the possible links between
suicide victims within clusters as well as any other relevant
information not contained in the Coroner’s reports.

Methodology for future stages of the study

Stage 2 – Psychological Autopsy Interview Schedule
In stage two of the study, which will not be reported on in
this paper, the researcher will conduct a psychological autopsy
interview with at least one family member from each suicide
victim in a cluster to again explore possible links between
suicide victims. This will also be partnered with a psychological
autopsy interview of at least one family member of a ‘sudden
death’ as a control. It will be used as an ethically sound data
gathering method and is “a procedure for the reconstruction of
a suicidal death through interviews” with family, friends and
community members who have lost someone to suicide and
analyses that death from “a physical, psychological and social
perspective”.

Stage 3 – Discourse Analysis and aggregation of data
This stage of the study will involve the collection of narratives
through semi-structured focus group interviews with
indigenous Elders and family around the suicide of a member of
their community. The issues that challenge the capturing of
narrative data are the reliance on translation, cultural biases,
local politics and political constraints, how much truth can
be disclosed to the researcher, and the relationship dynamics
between the researcher and the participant.

Results first stage of study
The following graphs and table provide the results of examining
the data from both the NTCO and NCIS relating to suicide in
indigenous communities in the Northern Territory 1996–
2005.

Figure 1 below sets out the suicide incidence in relation to
gender and shows that 91 per cent of indigenous suicides were
Marriage (including de facto relationships), normally a protective factor, and widowhood and separation, normally risk factors, do not appear to apply in Indigenous settings with over half the completed suicides being married or in a de facto relationship and only a small number being widowed or separated.

Figure 4 below sets out the suicide incidence in relation to employment status and shows that 70 per cent of Indigenous suicide victims were unemployed in the NT from 2000 to 2005.

![Graph showing suicide incidence by employment status](image1)

**Figure 4. Number of suicides against employment status. Source of data: NT 2000-2005 NCIS.**

The graph above provides evidence of the risk attached to being an unemployed Indigenous male and its relationship to completed suicide.

Figure 5 below sets out the incidence of suicide clusters and shows that 77 per cent of Indigenous suicides appear to be clustered in the NT from 1996 to 2005.

![Bar chart showing number of suicides within clusters](image2)

**Figure 5. Number of suicides against number of suicides within clusters. Source of data: NT 1996-2005 NTCO & NCIS.**

Clusters of two or more completed suicides in the graph above provide evidence of clusters of suicide in the Northern Territory 1996–2005.

Figure 6 below shows that 50% of total Indigenous suicides in the Northern Territory were potentially preventable from 1996–2005.

<table>
<thead>
<tr>
<th>Total number of suicides in Northern Territory 1996–2005</th>
<th>443</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of Indigenous suicides</td>
<td>180</td>
</tr>
<tr>
<td>Number of suicides at start of clusters, that is, “index suicide”</td>
<td>48</td>
</tr>
<tr>
<td>Number of suicides not within a cluster</td>
<td>42</td>
</tr>
<tr>
<td>Number of suicides within clusters after “index suicide”</td>
<td>90</td>
</tr>
</tbody>
</table>

**Figure 6. Number of preventable suicides within clusters equals 50% of total Indigenous suicides in NT 1996–2005. Source of data NTCO & NCIS.**

The table above represents the number of suicides that occurred from 1996 to 2005, half of which were within clusters, and could potentially have been prevented.

In Figure 7 below shows eight clusters within one Indigenous community of the Northern Territory, a possible “Echo cluster” effect demonstrated.

![Bar chart showing number of suicide clusters within one discrete community](image3)

**Figure 7. Number of suicide clusters within one discrete community in NT 1996–2006. Source of data NTCO & NCIS.**

“Echo clusters” is demonstrated on an island community in the Northern Territory.

**Discussion of results**

The data above provides evidence that clusters of suicide are an enduring feature of Indigenous suicide in the Northern Territory since the mid-1990s. From the combined data from NTCO and NCIS, the total number of suicides in the NT between 1996 and 2005 were 443 and of those suicides 180 or approximately 38% were Indigenous people (See Figure 6). Yet the Indigenous population only comprises approximately 29% of the population. The findings report that 77% of Indigenous suicides are part of a cluster of suicides and this could explain the 800% increase in Indigenous male suicide in the NT over the past two decades, but this will be explored further when stages two and three of the research are conducted (see Figure 5). What is disturbing is the island community that has experienced eight clusters during that time period with a minimum of two and a maximum of six suicides within a cluster making a total of 31 suicides in one community in just one decade (see Figure 7). What is unique is their persistence over time, whereas other clusters in most communities have been self-limiting. Also the narrowing of time between clusters, as well as the narrowing of time between each suicide within a cluster, demonstrates a lowering of the threshold of familiarity.
of suicide within this community (see Figure 7). 23

Regions and health districts are defined in the NT and clusters of suicide were spread across both urban and rural health districts and regions and sub-regions of the Northern Territory. 22 The Darwin region experienced the highest number of clusters with sixteen clusters within five communities; followed by Alice Springs region with thirteen clusters within seven communities; Katherine region with six clusters within five communities; East Arnhem eight clusters within three communities and Barkly region with three clusters within two communities. It is not known whether there has been some crossover contagion from a rural suicide to an urban suicide and vice versa but this will be investigated in the next stages of the research.

Another feature of Indigenous suicide in the NT from 2000-2005 is that most of the suicides were young males, married and unemployed. There were no Indigenous suicide victims over the age of 50 and three-quarters were young, aged 15 to 34 years, with other previous studies supporting these results. 25 Half the suicide victims were married or in de facto relationships but well over two thirds were unemployed. The normal protective factors, for example, marriage, and risk factors, for example, being elderly appear not to apply in Indigenous settings in the NT and require further study. 23, 25 Other risk factors for suicide in the NT, for example, alcohol abuse disorder which can increase the risk of suicide by as much as 120 times and the co-occurrence of a depressive disorder may underlie the dramatic increase in suicide and clusters and will be investigated in Stage 2 of the research. 24, 25

Because of the ten-year retrospective snapshot of suicide, the stable though mobile Indigenous population in the Northern Territory it is relatively easy to plot the clustering effect. 22 One suicide in a community appears to have a “domino effect” with other suicides following the first suicide to create a cluster. Another feature apparent is the phenomenon called “echo clusters”, (see Figure 7) of which there is only anecdotal evidence in other parts of the world, and is not well researched. 25 They are subsequent clusters after the initial cluster, which has been demonstrated on an island community in the Northern Territory and referred to above. What type of suicide contagion and if there is a contagion operating within these clusters is yet to be identified and will be the subject of further research before conclusions can be drawn, utilising the psychological autopsy interviewing method. Joiner 20 suggests, “people who are vulnerable to suicide may cluster well before the occurrence of any overt suicidal stimulus”, for example, marginalised, unemployed Indigenous men, so that “when they experience severe negative events, including the suicidal behaviour of one member of the cluster, all members of the cluster are at increased risk of suicide”. 25

The question of whether there is a clustering effect of suicide in the Northern Territory has been proven conclusively and the cluster phenomenon does exist in some communities in all regions. This evidence supports the hypothesis that the dramatic increase of Indigenous suicide in the past decade has been the result of the clustering effect of suicide. This has ramifications for present and future funding providers, policy makers and intervention services. The unnecessary and potentially preventable deaths of almost fifty percent of Indigenous suicide victims in the past decade in Northern Territory is a current issue confronting government, mental health and suicide prevention experts and decision makers. 27

**Summary discussion about clustering of suicides**

Clusters of suicide have been referred to as “waves of suicide” but in the case of some communities and discrete populations of the Northern Territory they appear more like a “tsunami”. 25 Over the ten-year period of the study these waves of suicide have reached even the most remote and isolated communities in the NT. The Zilboorg study into a cluster of police suicides in New York was the first to refer to a “wave of suicide” in the context of corruption, organised crime and social change within the New York Police Department. 26 The Yarabah community in far north Queensland experienced a similar clustering of suicide and also referred to “waves of suicide” in the context of substance abuse, severe family dysfunction and social change. 9 Both these clusters and “waves of suicide” were self-limiting but required extensive research and appropriate interventions to turn the tide of suicide in these communities.

**Present and future implications of research**

The purpose of this research has been to identify if there is a clustering effect of suicide within Indigenous communities in the NT. This has been demonstrated and now it remains to establish if there is a contagion effect operating within those clusters. This is important to understand, as it will guide the way we respond to suicides in Indigenous settings. It will also give us a broader knowledge of the cultural and social differences in the response and reactions that occur in the event of a suicide in an Indigenous community. It may also highlight the distress and reaction to the enormous social change that is occurring in the Northern Territory and how we can shore up Indigenous communities to better cope with the onslaught of this inevitable change. This will have benefits to current and future generations of Indigenous people within these communities and also governments who are responsible for the wellbeing of Indigenous people in the Northern Territory. Now that the dramatic effect of clustering of suicides has been demonstrated the next stage to the research is to identify the compound and multiple risk factors that are at play and which perpetuate the cycle of cluster suicides occurring. This will be achieved by conducting psychological autopsy interviews with families of the deceased and discourse analysis of the narratives. The burden of suicide and the suicide risk has increased exponentially in the past decade and clearly suicide clusters appear to be a major contributing factor to that increase in Northern Territory, Australia.

**References**

National Quality Reporting Framework consultation

The community care sector’s feedback on proposed new common standards and approach to quality reporting is being sought to inform the development of a National Quality Reporting Framework.

A consultation paper has been produced to present information on the proposed common standards and quality reporting approach and provide a means to obtain feedback from the community care sector.

The National Quality Reporting Framework consultation paper contains background information about the project, the proposed common standards and reporting approach as well as a series of questions designed to obtain sector feedback prior to further development and testing.

The National Quality Reporting Framework consultation paper and information about how to respond will be available to download from The Way Forward website (details below).

Community care sector engagement is a critical element of the reform and providing feedback on the National Quality Reporting Framework via the consultation paper is an opportunity to help create consistent standards and more streamlined reporting processes.

The National Quality Reporting Framework is a key initiative of the reforms outlined in A New Strategy for Community Care - The Way Forward and this sector consultation is one of a series of consultations related to the work underway to strengthen community care.

The National Quality Reporting Framework consultation paper is available for download at:


Feedback is requested by 1 June 2007.

The paper can also be made available in hard copy for respondents who do not have computer access by telephoning 02 6280 5707.

For more information on the National Quality Reporting Framework and other projects progressing under A New Strategy for Community Care - The Way Forward visit: www.health.gov.au/communitycare_thewayforward