Using coronial data to identify deaths in people with risk factors for self-harm

Connecting for Life

Report on the Outcome of a Feasibility Study

Health Research Board

September 2017

This study explores the feasibility of using the existing methodology, logistics and expertise of the National Drug-Related Deaths Index (NDRDI) to collect data on suicides and deaths in people with risk factors for self-harm.

Key Points

- Accurate suicide data is the cornerstone of effective suicide prevention.
- In Ireland the decision as to whether someone has died by suicide is a legal one made by Coroners based on the 'beyond reasonable doubt' rather than a 'balance of probabilities' approach
- There is a significant body of evidence related to the limitations of suicide statistics. Under-reporting suicide statistics can lead to misinformed and misdirected prevention, intervention and postvention activities.
- The annual suicide rate, reported by the Central Statistics Office (CSO) and which is constrained by a two-year time lag, remains the most widely used population-level suicide metric in Ireland.
- The National Drug-Related Deaths Index (NDRDI) is a national epidemiological database maintained by the HRB, which records all deaths due to drug and alcohol poisoning, and all deaths among drug users and those who are alcohol dependent.
- The main source of data for the NDRDI comes from closed Coronial files in all Coroners districts in Ireland.
- This study showed that it is (technically, operationally and financially) feasible to collect information on suspected suicide deaths in people with risk factors for self-harm from coronial files using the existing methodology and logistics of the NDRDI.
- The experience of the research nurses and the scale of the fieldwork ensures a comprehensive data set with adequate specificity.
- This can help achieve Strategic Goal 7 contained within 'Connecting for Life', Ireland's National Strategy to Reduce Suicide (2015-2020) which recognises the need to improve the quality of and access to surveillance data.

Introduction

It is imperative that policies aimed at preventing suicide are developed based on good quality information and evidence. Without comprehensive, meaningful, timely and accessible suicide data, it is not possible to have a clear understanding of the scope and scale of suicide behaviours or to implement appropriate and targeted action in preventing suicides.

Accurate suicide data is the cornerstone of effective suicide prevention, informing the development of national and area-level suicide prevention action plans, intervention and postvention strategies, and contributing to the broader objective of reducing the stigma associated with suicide and self-harm.

In Ireland, the annual suicide rate, reported by the Central Statistics Office (CSO) with a two year time-lag remains the most widely used population-level suicide metric. The CSO's role in collating and reporting suicide statistics is part of the wider system for recording vital statistics on births, deaths and marriages, and for collecting mortality data to identify and monitor population groups that experience diseases or injury disproportionately. The classification and registering of a death as a suicide is anything but a straightforward process. In Ireland, the decision as to whether someone has died by suicide is a legal decision made by Coroners, not a medical decision made by doctors. In order for Coroners to make a decision that suicide was the cause of death, they must be sure that the person intended to end their life and that all other explanations have been ruled out. Therefore, Coroners collect information for this purpose. Moreover, the information they collect is mainly held in physical case files, which presents its own challenges; for example, in order to produce data on the percentage of suicides where drugs and/or alcohol were implicated requires someone to read all the files.

Considering the challenges, it is not surprising that there exists a significant body of evidence related to the limitations of suicide statistics. It is generally accepted that using coronial verdicts as the sole source of suicide data is likely to lead to under-estimations of deaths by suicide primarily because the burden of proof required by a Coroner in reporting a death as a suicide death is higher than what may be considered necessary for a medical cause of death of suicide or for the purposes of suicide-related research. Thus, the true suicide rate is almost always higher than the official reported rate[1]. The implications of under-reporting (and regional/local variation in reporting[2]) are significant for policy development, monitoring and evaluation; it can lead to misinformed and misdirected prevention, intervention and postvention activities, which critically may neglect at-risk groups and regions.

Appropriate use of official suicide data therefore requires a thorough understanding of both the sources and magnitude of interpretation contained within the data system. The relevant question for any given mortality data set then, is not whether there is under-reporting in suicide rates, but how much under-reporting is occurring, from what sources, the degree to which it is impacting rates, and the trends over time.

Background to the Study

Research in Ireland has highlighted the need for a better understanding of the national suicide recording systems[3]. 'Connecting for Life', Ireland's National Strategy to Reduce Suicide (2015-2020) recognises the need to improve the quality of and access to surveillance data and the nine actions outlined under Strategic Goal 7 are dedicated to this.

In 2016 the HSE National Office for Suicide Prevention (NOSP) contracted the Health Research Board (HRB) to undertake a feasibility study to assess the viability of collecting data on deaths from the cohorts of people with risk factors for self-harm from coronial files using the existing methodology and logistics of the National Drug-Related Deaths Index (NDRDI).

---

[1] Claassen, C., *et al* (2010) National Suicide Rates a Century after Durkheim: Do we know enough to estimate error. Suicide and Life-Threatening Behavior 40(3) 193-221.
[2] Carroll, R. *et al* (2011) Impact of the growing use of narrative verdicts by coroners on geographical variation in suicide: analysis of Coroner's inquest data. Journal of Public Health 34:3:447-453.
[3] See for example, Corcoran, P., & E. Arensman (2009) A Study of the Irish System of Recording Suicide Deaths. Crisis: 31:4:174-182

The NDRDI is a national epidemiological database, maintained by the HRB, which records all deaths due to drug and alcohol poisoning, and all deaths among drug users and those who are alcohol dependent. The NDRDI collect data from closed Coronial files in all Coroners districts in Ireland. The Index was established in 2005 as a result of an action in the relevant National Drugs Strategy.

The NDRDI already records data on deaths by suicide where the fatality meets the NDRDI inclusion criteria as outlined above. Other agencies such as the Road Safety Authority, have successfully partnered with the NDRDI to use its existing methodology, logistics and expertise to collect specific data from the coronial files. As the database and protocols have already been developed, and relationships with all Coroners established, the partnership approach is the most cost effective and efficient way to collect data from the Coroners due to the requirement to only fund the additional nurse researcher's time to collect the extra data rather than set up an entire new project.

A Memorandum of Understanding was therefore developed and agreed between NOSP and the HRB to conduct the feasibility study to collect data on all suicides and deaths in people with risk factors for self-harm in 2015 for whom a closed coronial file was available.

Study Objectives

The purpose of the feasibility study was to assess the strengths and weaknesses of using the NDRDI methodology to collect data on suicide and to present recommendations to the NOSP on what could be done to improve this data collection system system.

Methodology

The NDRDI collect data annually from closed Coronial files in all Coroners districts in Ireland. The Index records a comprehensive amount of information on each fatality including: demographics, medical history, risk factors around drug use, toxicology, verdict and cause of death.

All closed coronial files, regardless of verdict, are examined by research nurses. Consistency of identification of relevant deaths is ensured by:

1. training and supervision of research nurses;
2. the use of standardised protocols, and
3. data entry into a customised database on site. This existing methodology was therefore extended to include deaths in individuals with risk factors for self-harm.

All deaths which had a verdict of suicide were recorded for the feasibility study. Deaths which did not have a verdict of suicide but had risk factors for self-harm were also included. Risk factors used to identify deaths which did not have a verdict of suicide were based on work done on the Northern Ireland Coroner's Database and using other national and international research[4] [5] [6]. These risk factors included for example, evidence of a note or other communication (text/social media) which outlined a wish to end their life or expressions of farewell; evidence of intent; previous suicide attempts. Those deaths which did not have a verdict of suicide were assigned a level of probability by the research nurse based on the contents of the entirety of the file. These were:

- Highly probable: In the opinion of the research nurse there were enough risk factors for self-harm to indicate that the deceased may have taken their own life intentionally even though the death did not meet the legal requirement for a verdict of suicide.
- Probable: Evidence from the file on risk factors for self-harm would suggest the deceased might have taken their own life intentionally.
- Possible: There is limited evidence. Data on these deaths is not collected, only the number of deaths is recorded.

All deaths were reviewed by a second researcher to ensure that they were suitable for inclusion. All data was cleaned, first by the nurse researcher who entered the data and then secondly by a different nurse researcher to maintain quality.

The project was evaluated according to four major criteria;

1. Evaluation of technical and systems feasibility which is an assessment of the availability and

---

[4] Rosenberg *et al* (1988) Operational Criteria for the determination of suicide. Journal of Forensic Sciences: 33:6:1445-1456

[5] Corry *et al* (2016) A study of untimely sudden deaths and people who took their own lives while in the care of the Donegal Mental Health Service. National Suicide Research Foundation: Cork.

[6] Kielty *et al* (2015) Psychiatric and psychosocial characteristics of suicide completers: a comprehensive evaluation of psychiatric case records and post-mortem results. Irish Journal of Psychological Medicine: 32:167-176

quality of data sources (i.e. Coroners files), methods of data collection, data coverage, analysis, and software.

2. Evaluation of operational feasibility which is an assessment of the level of knowledge and skills necessary for data acquisition, and later to process, analyse and visualise them.
3. Evaluation of scheduling feasibility which is an assessment of estimation of time necessary to complete respective parts of a project, e.g. data procurement and processing.
4. Evaluation of financial feasibility which is an assessment of the cost, value for money and overall attractiveness of the investment.

Outputs of feasibility study

The NDRDI team undertook:

- Development of 16 new additional questions to collect specific NOSP data and updating NDRDI Access database to include new questions.
    - The additional new questions sought to provide the most complete and accurate information in order to contribute to a greater understanding of these deaths, with particular reference to quantifying the impact of known risk behaviours or adverse events.
    - The full suite of the other 40 questions already collected by the NDRDI is included in the NOSP dataset.
- Updated NDRDI data collection protocol to include the additional NOSP only questions.
- Ethical approval for the additional NOSP questions received.
- Informed all Coroners of the feasibility study.
- Identified, trained and managed a suitable additional nurse researcher.
- Coded and cleaned all NOSP data as per protocol.

Outcome of the feasibility study

16,756 files/reports related to the deaths reported to the coroners were reviewed as part of the feasibility study.

Evaluation of technical and systems feasibility: Overall it was feasible to collect data from all Coronial Services on all deaths with a verdict of suicide; information on deaths with a verdict of "took own life" or "self-inflicted" were also included. It was also feasible to collect information on the deaths among individuals with risk factors for self-harm. There was however variation in the amount of data available between Coroners and across risk factors. If the study is to continue, all questions should be reviewed for their coverage and utility to determine whether they should be a) retained; b) retained but revised or c) discontinued.

Evaluation of operational feasibility**:** The modifications required to the existing NDRDI database to include additional NOSP-only questions were modest; in all, 16 new questions were added. The expertise and training of the NDRDI nurse researchers was pivotal in identifying deaths among individuals who did not have a verdict of suicide. However, identifying the level of probability of self-harm as agreed for the feasibility study (highly probable/ probable and possible) proved challenging. If the study is to be continued, it would be necessary to review the system for assessing the probability of suicide in deaths that do not have a coroner's verdict of suicide (via a Technical Advisory Group).

Evaluation of scheduling feasibility: Using the existing methodology of the NDRDI ensured that overall the feasibility study was successful. Some circumstances around timelines are beyond the control of the NDRDI team as data is collected from closed coronial files. More time than anticipated was required for reading, entering and cleaning the NOSP data given the additional complexity. If the study is to be continued, some additional nurse researcher days will be required to cover this.

Evaluation of financial feasibility**:** Re-using and modifying the existing methodology of the NDRDI ensured that the feasibility study was a cost effective use of public money. However if the study is to continue, NOSP would need to ensure that there is an availability of internal capacity to analyse and report on the data.

The overall outcome is that it is feasible to collect information on the deaths among individuals with risk factors for self-harm from coronial files using the existing methodology and logistics of the National Drug-Related Deaths Index (NDRDI). The scope and scale of the fieldwork provided a comprehensive data set with adequate specificity. This will assist in the achievement of Strategic Goal 7of '***Connecting for Life'***, which recognises the need to improve the quality of, and access to surveillance data and strive to assist in reducing the number of suicide deaths in Ireland.