The accuracy and reliability of suicide statistics: Why it matters

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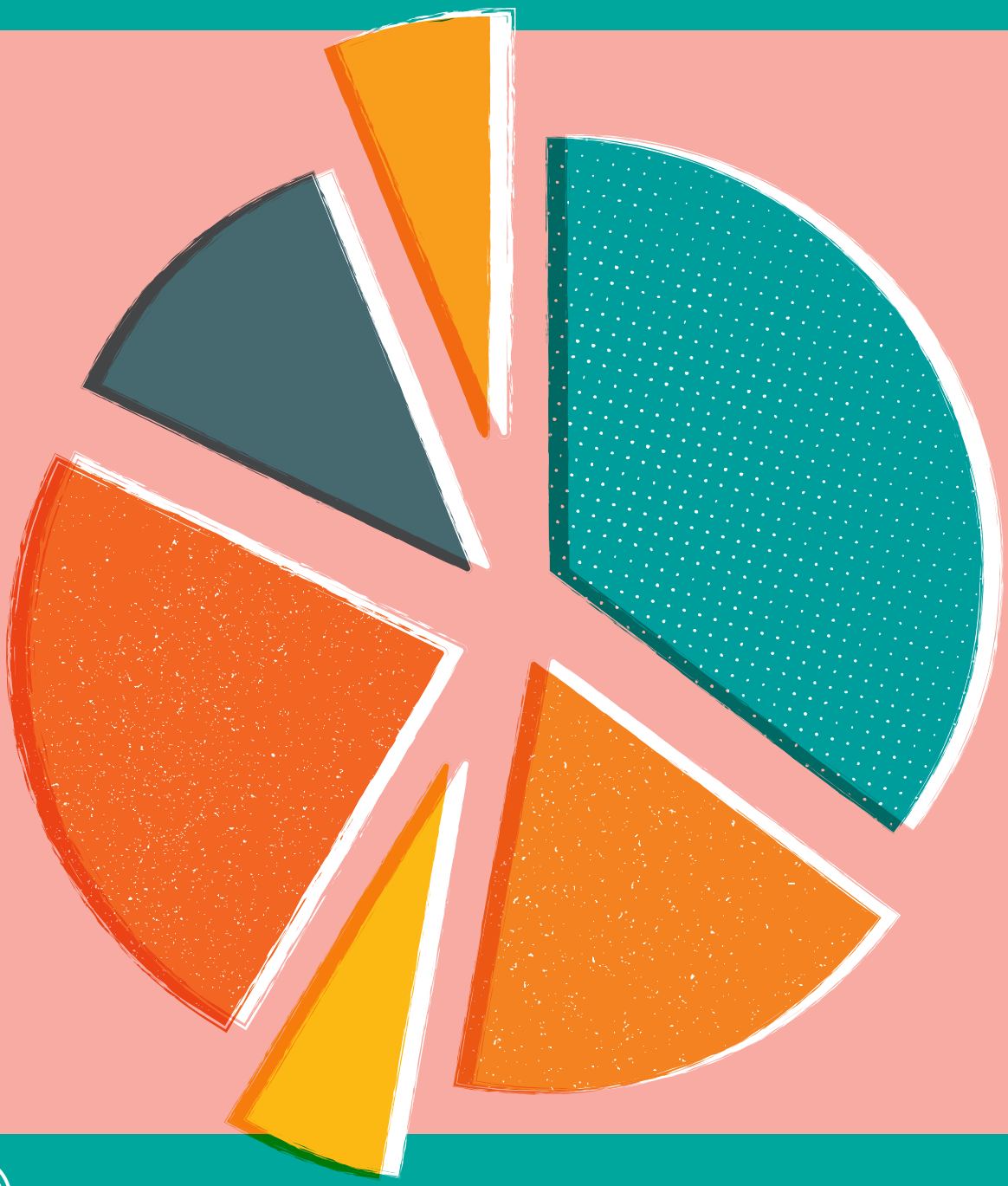

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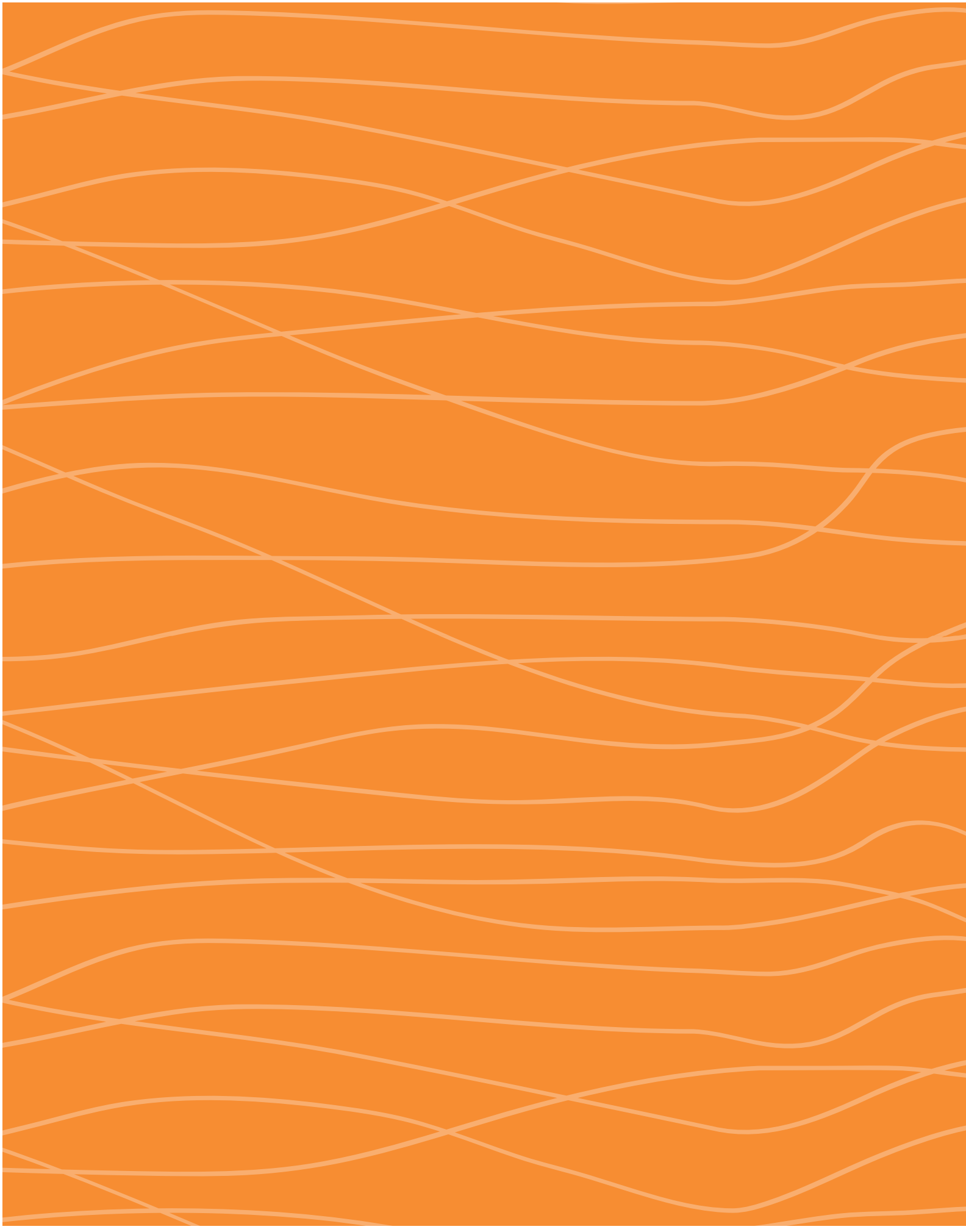

IN THIS ARTICLE *How is a death determined a suicide?/How accurate are suicide statistics?/ Autopsies/How to interpret data/Why is accuracy important?*

Suicide has been a hidden and unspoken action for centuries. Religious proscriptions and, later, legal penalties kept it underground and secret.

In western societies people dared not speak its name, let alone carry it forward in deed, lest one be imprisoned for attempting or doomed to eternity for actually dying. Consequently, a stigma is attached to suicide like nothing else in this world, almost as if the word stigma itself was coined specifically to describe it. It remains our biggest hurdle in suicide prevention: overcoming the stigma. It lingers long after its religious taboo has softened, and its former criminality has faded from memory. And it lingers on even in the mundane activities of life, like the recording and reporting of death.

In this article I will explore why there are inaccuracies and general underreporting in the tallying of suicide deaths to this day. I will look at why it is crucial that we have accurate suicide statistics. Finally, I will show and suggest practices that can do a more accurate job of recording suicidal deaths.

HISTORICAL UNDERREPORTING

As early as 1790, it has been widely known that suicide numbers are substantially undercounted (De Leo, 2014). This phenomenon continues to this day in both Europe and North America.

The ancient stigma associated with suicide persists despite its decriminalization in Canada in 1972, and the beginnings of more liberal and compassionate attitudes from organized religion. But the stigma persists and survives in more ingrained areas of society such as the way we identify, catalogue, and classify suicide deaths.

For a coroner or a medical examiner investigating a suspicious death, suicide is never the default. A suicide classification is not made lightly. A death is not classified as suicide unless there is unequivocal evidence to do so:

"It is likely that suicide may be under reported due to both the social stigma associated with suicide as well as the reluctance of a medical examiner or coroner to make this classification if supporting data are uncertain" (Gray et al., 2015).

WHAT CONSTITUTES A SUICIDE?

It will be useful to define suicide and what qualities a death must have to count as suicide. The World Health Organization defines a suicide as "an act with a fatal outcome which the deceased, knowing or expecting a fatal outcome had initiated and carried out with the purpose of provoking the changes he desired" (De Leo et al., 2006, p. 8).

Further, a suicide must exhibit these 3 components:

1. **Agency:** An act of suicide must be self-initiated but not necessarily self-inflicted. Agency accounts for any outcome in which the victim is either directly or indirectly responsible.
2. **Intent:** Intent must be determined to distinguish suicidal behaviour from other self-harming behaviours that are non-suicidal, such as cutting for emotional release without intent to die, known as Non-Suicidal Self Injury (NSSI).
3. **Outcome:** Suicide must have death as an outcome. A suicide attempt must at least have the actual or believed potential for death as an outcome.

How is a death determined a suicide?

In North America, coroners and medical examiners determine cause of death, including suicide.

Each year, in Canada, about 230,000 people die (in total).

When a death is unexplained, unexpected or violent, coroners or medical examiners determine why and how the person died. In Canada, investigation of unexplained or unnatural deaths is a provincial or territorial responsibility. In six of the provinces (and three territories), physicians appointed as coroners or forensic pathologists have the statutory responsibility to investigate suspicious deaths and determine whether an autopsy is required. In some of these systems they also perform any autopsies required (Kelsall & Bowes, 2016). The remaining four provinces have a Medical Examiner system where the medical examiner is also a trained forensic pathologist whose office investigates death.

In Alberta, The Office of the Chief Medical Examiner investigates deaths. Their standard death investigation involves determining the:

- Identity of the deceased
- Date and place of death
- Cause of death
- Manner of death

(Office of the Chief Medical Examiner, 2021)

A DEATH INVESTIGATION MAY INVOLVE THESE STAGES:

- Scene of death review
- Body transportation
- Body identification
- Examination (external examination, x-rays, toxicology)
- Post-examination (return of body to next of kin, additional laboratory investigations or further review of medical records and opportunity for other reports including psychological autopsies)
- Issuance of death documents

(Office of the Chief Medical Examiner, 2021)

MANNER OF DEATH FALLS INTO ONE OF THE FOLLOWING CATEGORIES:

- **Natural**
- **Accidental** (unintentional injury)
- **Suicidal:** A death where evidence indicates that the person intended to cause their own death. Evidence can include:
  - Clear or unambiguous method
  - Presence of a suicide note
  - Self-injury identified on body
  - History of suicidal ideation or attempts
  - Written materials or search history related to topics of suicide
- **Unclassified:** A death from the medical assistance in dying process (MAID)
- **Undetermined:** A death where the investigation yields insufficient evidence to determine its manner. Drug overdoses tend to be classified in this category

(Office of the Chief Medical Examiner, 2021; Gray et al., 2015)

How accurate are suicide statistics?

A 2012 systematic review of 31 studies over a 46-year period found underreporting of suicide in 13 of those studies, ranging from 5-10%.

Of the remaining 18 studies, 52% found more than 10% underreporting, and 39% found more than 30% underreporting. The findings support the prevailing wisdom that there is widespread underreporting of suicide (Tollefsen et al., 2012).

It begs the question: why is there such a scourge of underreporting?

A 2017 Canadian Medical Association Journal (CMAJ) study by Skinner and McFaul et al. found the following reasons for misclassification and the consequent underreporting:

- Stigma
- Limited frequency and extent of autopsies (increased autopsies invariably increases suicide counts)
- Disagreement amongst death investigators on burden of proof (with a lack of unequivocal evidence signaling certain suicide, further investigation into a death is the choice of the investigator; there are no standards to prompt further investigation or not)
- Variation in staffing and funding across provinces and territories, and
- Lack of national death reporting standards

(Skinner et al., 2017)

Second only to stigma, lack of standards and consistency in practice are the major reasons for underreporting.

When it comes to death determination, medical examiners and coroners lack a consistent set and application of standards. A lack of uniform standards leaves the identification of suicide suspect. In Canada, there is:

- No accreditation system for coroner or medical examiner offices
- No national standards for the investigation or classification of death
- No nationally recognized training program or credentialing system for coroners and medical examiners
- No agreement on common outcome measures against which to evaluate performance

(Kelsall & Bowes, 2016)

Undetermined and accidental deaths. Are they often suicides?

Many suicides are not documented as such because they lack the unequivocal burden of proof that death investigators seek: a suicide note, a prior attempt or an obvious method.

Most undetermined deaths have and continue to be fatal drug overdoses. Some of these deaths may be intentional, others unintentional, but the ambiguity of intent renders the classification as “undetermined."

Researchers and bereaved family members suggest many of these deaths have been suicide but, because of expediency or lack of will (sometimes racially motivated, as when some deaths of particular racial groups are not investigated) the deaths are typically classified into the non-descript category of ‘undetermined’ and the files are closed. This practice does little to promote prevention efforts or influence government policy.

This has become even more apparent with the opioid crisis, which has ravaged North America in the last twenty years. The Centers for Disease Control and Prevention in the United States says that almost 450,000 people have died by opioid overdose from 1999-2018 (Centers for Disease Control and Prevention, 2020). In Canada there has been an equally alarming crisis – 16,364 opioid deaths between January 2016 and March 2020 (Government of

Canada, 2020). How many of these deaths were suicide?

The skyrocketing numbers in the "undetermined" category driven by drug overdose has prompted some experts to propose a new death classification category for this cause of death: death from drug self-intoxication. Adding this category would call attention to the magnitude of the drug overdose problem, as well as highlight the ambiguous nature of these deaths. This narrower category would include both unintentional deaths and ambiguous suicides. However, the very act of re-naming from the vague "undetermined," to the more assertive "death from drug self-intoxication," would increase the attention each of these deaths deserves (Stone et al., 2017). This would allow medical examiners a broader range of Manner of Death designations and end their dependence on medicolegal determinations of Manner of Death that force choices of only "accidental" or "undetermined" when there is insufficient evidence of suicidal intent in a death (Rockett et al., 2018; Stone et al., 2017). Inevitably, with this added scrutiny and encouragement for further investigation (performing autopsies for example), many of these deaths would register as actual suicides. For example, an autopsy may reveal evidence that an overdose may have been intentional after all, facts that would have gone unnoticed without further inquiry. Alas, the death from drug self-intoxication category does not yet exist. Deaths from drug overdose and intoxication are still tallied as mostly undetermined.

Autopsies and psychological autopsies

Another possible corrective to the misclassification of suicide is to increase the number of autopsies performed. In Canada, in 2018, autopsies were conducted in 5.6 % of all deaths (Statistics Canada, 2018). This is about half of the autopsies conducted 25 years ago.

Another tool in determining a cause of death is the psychological autopsy. This measure is not entirely separate from the autopsy but is not routinely employed in an official capacity. Nonetheless, it has been used for almost 50 years to assist medical examiners and coroners in determining Manner of Death, to collect research data, to inform suicide prevention efforts, and as a forensic tool in the courts (Knoll, 2008).

Research indicates that a higher number of autopsies results in a higher count of suicides.

There is no greater signal that much of the underreporting of suicide can be attributed to simple inaction.

This is evident when we look at the situation in Quebec. The province has been known for high frequency of deaths categorized as suicide and a relatively low number as undetermined deaths. Cleaner, more transparent counting of suicide deaths is a key element in Quebec's coordinated suicide prevention efforts. Driven by Help for Life, the provincial suicide prevention plan (1999), coroners in Quebec "carefully investigate deaths from injuries not to miss suicides" (Auger et al., 2016, p.76). They will especially investigate accidental deaths due to drowning, poisoning, or traffic fatalities thoroughly. This is in clear contrast to most of their provincial and territorial counterparts. When comparing suicide deaths across provinces, Quebec appears higher than many others. Is it? Or is it representing its numbers more accurately?

The psychological autopsy, developed in the 1950s by pioneering suicidologists Norman Farberow and Ed Shneidman of the Los Angeles Suicide Prevention Center, is a process "to classify equivocal death." Some believe it to be the most direct tool available to examine the relationship between a decedent's risk factors and their subsequent suicide (Cavanaugh et al., 2003).

The psychological autopsy consists of 2 elements:

- Extensive interviews of family members and intimates, and
- Collection of all medical, psychiatric, and other relevant documents of the deceased.

The goals of the psychological autopsy are similar to that of a general death investigation. Investigators work to determine cause, method, motive, intent, lethality and whether the decedent was of sound mind. The goals of the psychological autopsy include obtaining an in-depth understanding of the decedent's personality, behaviour patterns, and possible motives for suicide. The information culled from these investigations has been used in suicide research, criminal cases, insurance claims, estate issues and contested wills, workers compensation cases, and assisting medical examiners determinations in equivocal cases (Knoll, 2008).

Acceptance and support for the psychological autopsy is far from universal. Criticisms include a lack of a standardized protocol, consistency of suicidology nomenclature, and a perceived bias among collateral informants among others (Knoll, 2008) — essentially the same failings of suicide classification and the documentation of suicidal death in general. Imagine the ensuing quality of death determination if we added rigor to classification, documentation, and psychological autopsy. This quality of reporting would go a long way in informing prevention efforts and health policy decisions.

How do we tabulate suicide statistics in Canada? In each province and territory?

But back to what we do with what we have. Once medical examiners or coroners classify the deaths in their respective province and territory they are sent to Statistics Canada for official collation and eventual publication. This is an involved process; often taking two years or more from receiving the data to public release.

Why the time lag?

A death investigation takes time. For example, a death may be deemed "accidental" but then some evidence may arise to change the verdict (perhaps some information from a psychological autopsy) to suicide. While many provinces and territories release "preliminary data" throughout the year, it inevitably changes as more information is uncovered. There is typically a two-year lag for provinces and territories to publish final numbers for a given year. Next, these numbers are collated and analyzed federally by Statistics Canada and eventually released to the public.

For the most part, provinces provide suicide statistics for each year broken down by sex and age groupings. Some provinces provide statistics broken down by the month and means of suicide, too. Only Saskatchewan collects and provides death data that includes ethnicity. Compared to American data, Canadian data is lacking demographically.

More granular tracking would drive targeted prevention efforts.

Here are two sample tables from Statistics Canada:

- Table 13-10-0801-01 Leading causes of death, total population (age standardization using 2011 population) (for Canada and Provinces) **bit.ly/3GxxbXA**
- Table 13-10-0394-01 Leading causes of death, total population, by age group (only Canada) **bit.ly/2HSwXOa**

How do we interpret the data we have?

All this aside, we still need to be able to use the data we do have to make policy decisions about how to prevent suicide.

There are some broad themes to keep in mind when looking at the numbers. To begin with, social science data is intended to be viewed as a series, not as individual elements. Suicide data illustrates trends. Focusing in on a specific year takes the information out of context. A case in point: 2015 in Alberta, showed a huge increase in suicide. Many people were panicking thinking this was a direct result of the economic downturn in 2014 and could have long-term effects. The large spike turned out to be an anomaly. An opposite example is the United States which has seen a consistent rise in youth suicide in the last 20 years. We know this to be a very real and disconcerting trend due to the duration of the pattern.

Another challenge is identifying trends across Canada. As each jurisdiction (province, territory) collects data differently, directly comparing province-to-province (or territory) data tables is not as simple as it may appear. As mentioned above, the lack of an accrediting body for coroner/medical examiner offices or even national standards for death classification leaves each jurisdiction operating independently of each other, ultimately submitting its numbers to Statistics Canada for final analysis and publication. Numbers released by Statistics Canada are considered final; replacing all others (Kelsall & Bowes, 2016; Skinner et al., 2017; Statistics Canada, 2020).

The final data from Statistics Canada can be read as rates and numbers. The two are sometimes mistakenly used interchangeably but they are, of course, two different measurements and need to be clearly defined. For example, older adults often have the highest rate of suicide among any demographic. Sometimes this can be miscommunicated to suggest they have the "most suicides." In fact, they may die by suicide more frequently than their younger counterparts (more per capita) but there are considerably less of them (smaller numbers). Similarly, the territory of Nunavut may often be stated to have the most suicides in the world, when in fact it is the suicide rate which is among the highest in the world.

The actual number of suicides in Nunavut is quite small, as is the actual population. This is an easy mistake but one, like inaccurate statistics, that sows misunderstanding among the general public.

Why is it important to have an accurate recording of suicidal deaths?

Ultimately, does having accurate statistics make a difference? If so, why does it?

Suicide is complex because people are complex. No two people's journeys to suicidal crisis are the same. This complexity results in few best practices for its prevention. And yet, suicide is one of the world's greatest public health crises. It is already the leading cause of injury mortality in Canada and the United States, surpassing motor vehicle crashes. Rockett states that underreporting of suicide will diminish its ranking as a major public health problem and therefore, its prioritization and prominence for supports (2010).

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How can we drive change? How can we ameliorate prevention efforts? One way is to make data-driven decisions with cleaner data. Bringing pan-Canadian standards to collection and documentation of death determination would bring clarity and consistency across provinces and territories. Implementing rigorous psychological autopsies in ambiguous cases would further raise the quality of the data and in turn, our understanding.

Standards begin with definitions of suicide itself. We need clear delineations of suicidal behaviour from suicidal ideation, from suicidal ideation and suicidal intent, and from suicidal and non-suicidal self-injurious behavior. International Association for Suicide Prevention has recently established a task force to investigate opportunities to build an internationally applicable nomenclature on suicide-related phenomena. Once obtained, data should be timely collected and stored in a centralized databank. Linkages with databanks related to other environments of public health interest (e.g., health records, schools, corrective services, drug and alcohol services) should then be encouraged for public health and research purposes (De Leo, 2015).

Misclassifying suicides as unintentional or natural deaths can have deleterious effects. Incorrect data affect "the course of health care research, the flow of resources, and ultimately public health policy" (Scott et al., 2006).

This is important because accurate accounting of deaths that may be misclassified is critical in guiding public health research, policy, and practice (Stone et al., 2017).

People who consider, attempt and die by suicide are in deep psychological pain. They feel like they are burdening their loved ones. If they die by suicide, it's because they see no other way out. We need to honour their battle by promoting our understanding of suicide. It is respectful of them and equips us to help prevent the same thing from happening to others. The true tally of the dead matters. Accurate suicide data can save lives.

Case study

The recording of undetermined and accidental deaths in specific populations, such as the Black community in the United States or the Indigenous community in Canada, illustrate the inequality and racial injustice in our health system.

Many suicides in these communities remain accidents or undetermined because there is a much greater disparity of health and mental health supports in these communities.

These are health injustices that are legacies of the colonial treatment of the Indigenous and continue in present day enshrined in many of our institutions.

How many overdoses are suicide because these people have never been treated in the health system, whose pain continues unacknowledged and whose deaths are never given a second thought, let alone an investigation? How many deaths remain undetermined because of underlying bias and institutional racism—the attitudes that no further investigation is required, and these racialized groups are not worthy of the respect and dignity a deceased white person deserves? Consequently, there is less of a spotlight on the suicide plight and a corresponding perpetuation of the lack of support and inequality (Rockett, 2018). This underreporting of suicide within racialized groups shows the disregard and disrespect the racialized dead still experience and begs the question: how can matters change for those racialized groups still alive?

Although there is general acknowledgement of a suicide crisis within some Indigenous communities (especially when there are multiple suicides in a short period of time), there is not enough scrutiny and care to determine exactly how prevalent suicide is on and off-reserve. Unlike in the United States, ethnicity details are not collected in Canada at time of death, so we do not know the full extent of the suicide landscape. Also, there is far more likelihood of a death remaining an "accident" or "undetermined" in an Indigenous context than in mainstream society. This speaks to the same institutional racism found in the United States.

A case in point: The deaths of seven young Indigenous people in Thunder Bay between 2000 and 2011, either by suicide or homicide, brought to light how devalued Indigenous life can be in a predominantly white society. Gross mistreatment by the police and the justice department were exposed. Many of the deaths were students who left their reserves in Northern Ontario to pursue high school education (Talaga, 2017). An inquest in 2015 found that "After eight months and 146 witnesses, the inquest deemed four of the deaths accidental; the cause of the remaining three were ruled 'undetermined.'" Parents whose teens fell into the second category were left with little more understanding than they had before the inquiry began." Certainly, many of these deaths were not accidental or undetermined (Andrew-Gee, 2019). The police forces and the legal system just didn't want to know.

An independent Ontario police report found the Thunder Bay Police Service (TBPS) to be riddled with systemic racism, both historically and currently. It details a decades-long broken relationship between the TBPS and Indigenous people. There is a culture of inaction on pursuing death investigations of Indigenous people, for example. The report found the TTBPS death investigations to be "problematic" and "inadequate" and "at least in part attributable to racist attitudes and racial stereotyping." There was a call to re-open the investigations of these deaths (Office of the Independent Police Review Directory, 2018).

This is but one of many instances of systemic racism rotting law enforcement, the judicial system, and so many other Canadian institutions at their core.

This general lack of respect and dignity to the Indigenous peoples is reflected in the legions of missing Indigenous women, the overflowing, disproportionate Indigenous prison population and continued injustices experienced by Indigenous youth in the child welfare system. An Indigenous death, by suicide, overdose, homicide, or otherwise is often treated with a shrug and acceptance as an inevitability – Indigenous lives are not being valued as others are.

Ultimately, accurate numbers make a big difference. We need to report suicide death in the most precise, detailed, and granular way possible to truly reflect the social, political, and economic realities in Canada today. Meticulous and accurate tracking of suicide can help ensure that all at-risk individuals and affected communities are given the supports they need (when they are still alive).

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