# Editorial

## Australia Revises its Mortality Data on Suicide

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> Strange is our situation here on Earth. Each of us comes for a short visit, not knowing why, yet sometimes seeming to divine a purpose. From the standpoint of daily life, however, there is one thing we do know: that man is here for the sake of other men – above all for those upon whose smiles and well-being our own happiness depends.
>
> Albert Einstein (1879–1955)

On June 24, 2010, at 4.30 pm, the Australian senate inquiry into suicide made available on the web its final report *(The Hidden Toll: Suicide in Australia).* A few minutes later, journalists started calling for comments and preliminary impressions. The delivery of the report was much awaited in the country. The inquiry officially started on September 10, 2009. Chaired by Senator Rachel Siewert, the Committee involved 10 more senators, 6 of them as regular members. The Committee received 258 public submissions plus a number of confidential reports. Between March and May 2010, the Senators held 12 public hearings in all capital cities of Australia. In essence, an enormous volume of information (of different natures, contents, and qualities) was addressed to Committee members and efficiently condensed by them in 199 pages.

The laudable exercise originated as a result of a number of important questions revolving around suicide prevention – among them, the impact of suicide on indigenous youth and rural communities, the effectiveness of the national suicide prevention strategy, and, last but not least, the accuracy of suicide reporting in Australia. Several other issues also triggered the inquiry, but for the time being I want to concentrate on the problem of mortality statistics. On this specific issue, our Australian Institute for Suicide Research and Prevention was the first to identify drawbacks in official data (De Leo, 2007). In fact, managing the Queensland Suicide Register (QSR, a high-quality, independent databank), the Institute is ideally positioned to provide reliable indications on suicide trends in the state. Created in 1990, the QSR has been supported financially by Queensland Health, Division of Mental Health, since then.

The accuracy of suicide statistics is far from being just an obsession for epidemiologists: It directly influences policy-making in mental and public health, planning and funding of preventative strategies, and research reports. Community awareness and support services depend on reliable reporting, and determining the extent and costs of suicide is important for combating stigma and addressing the needs of those bereaved. Consequently, it has been reassuring (in my position of director of the Institute) to read in the *Hidden Toll* that "the number of suicides in Australia has been underreported" (p. xiii), and that 6 out of the 42 recommendations formulated by the Committee are aimed at improving data collection and their publication.

There is little doubt that suicide will always be underreported. The stigma is destined to remain a powerful obstacle to faithful recording for generations. Related reasons vary between countries: Suicide is still a criminal offence in a number of nations (De Leo, Milner, & Wang, 2009) and religious prohibitions exist in others (Islamic populations are especially characterized by low reported rates of suicide; De Leo, 2002, 2009). Several factors may operate transnationally, such as political pressures, social position of deceased (Rockett et al., 2010), attitudes of coroners in protecting survivors from public scrutiny (particularly in the case of children and youth suicide; De Leo et al., 2010), and cases of euthanasia and assisted suicide (De Leo & Spathonis, 2003). Situations also exist where interpretation is objectively difficult: chronic illness (such as in the elderly: was the life-sustaining medication deliberately avoided?), particular methods (e.g., road accidents) (Murray & De Leo, 2007), dubious circumstances of the act (e.g., drowning, falls), social conditions (insurance policies), remoteness of reportable death, etc. (Cantor, McTaggart, & De Leo, 2001). Incidentally, Australia is also characterized by a remarkably high number of missing persons (at least 30,000 every year). Most are later traced, but an appreciable number never return home, and surely suicide is hidden among those cases (100? 200? more?). It can be hypothe-



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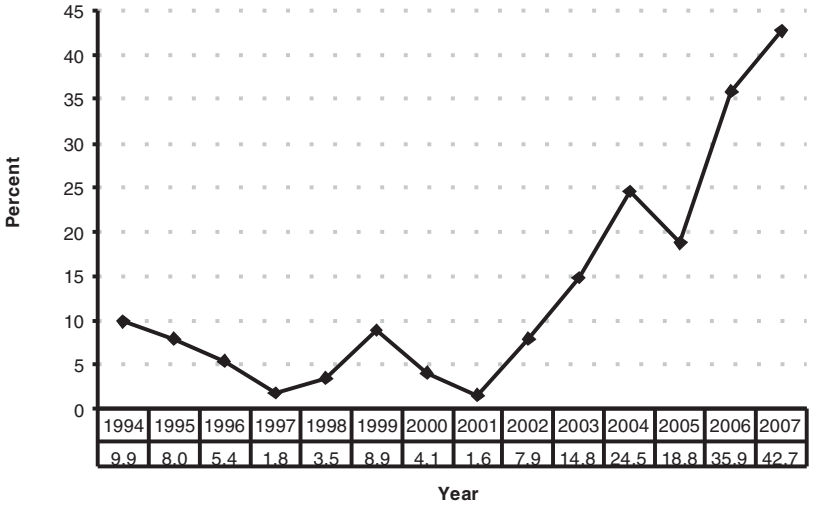


*Figure 1.* Difference between ABS and QSR suicide incidence, Queensland 1994–2007.

sized that a majority of these persons are driven by motives such as trying to spare their families the trauma of finding their dead body at home, to lessen the burden on those left behind, or to have their death declared "in absentia," which allows survivors to collect life insurance.

The problem of suicide underreporting has been known for a long time (Dublin, 1963; Stengel, 1964) and is generally accepted by the scientific community when of constant degree (O'Donnell & Farmer, 1995). "Tolerable" variations can occur when coding practices change, for instance during the transitions to a newer edition of the ICD system (ICD-8 to ICD-9, or ICD-9 to ICD-10; Andriessen, 2006). In Australia, an unprecedented decline in data quality has been noted starting with 2002–2003 (Bradley, Harrison, & Elnour, 2010; De Leo, 2007; De Leo et al., 2010). This phenomenon has been clearly identified in Queensland, where the QSR operates. As can been seen in Table 1 and Figure 1, Australian Bureau of Statistics (ABS) data closely paralleled those of the QSR until 2002, despite structural differences in determining causes of death between the two systems (Cantor et al., 2001; De Leo, 2007). In 2003 the delta between the figures recorded in the two suicide datasets reached 14.8%, topping out at 42.7% (corresponding to 212 cases of suicides) in 2007.

With the 2004 data, ABS started to call for caution in interpreting published suicide data: quality would have been affected by backlog in coroners' offices, with cases still open at the time of statistics publication. "There has been an increase in recent years in the number of open coroners' cases. Where cases are not finalized and the findings are not available to the ABS in time for publication of causes of death statistics, deaths are coded to other accidental, ill-defined or unspecified causes rather than suicide. The causes of death statistics are not revised once a coronial enquiry is finalized." (ABS, 2006)

On February 5, 2007 a letter to the editor of the *Medical Journal of Australia* (De Leo, 2007), followed within a few days by the presentation of the report "Suicide in Queensland, 2002–2004" (De Leo, Klieve, & Milner, 2006), highlighted the necessity for a recounting of suicide deaths in the country. Mid-April of the same year, ABS (2007) produced a document that detailed a number of issues affecting data collection. Apart from factors mentioned above, such as changes in in coding (e.g., ICD-10 from ICD-9), delays in coronial processes, timing of data compilation, and – quite obviously – unreported cases of deaths, the ABS listed changes in individual states' policies or legislations, multiple causes of death, data validation procedures (e.g., timeliness, coherence, accessibility, and interpretability),

*Table 1.* Records of suicide deaths in the Queensland Suicide Register and Australian Bureau of Statistics (ABS, 2010)

| Year | Queensland | | | | Australia |
|---|---|---|---|---|---|
| | QSR | ABS | QSR-ABS (number) | QSR-ABS (percentage) | ABS |
| 1994 | 505 | 455 | 50 | 9.9 | 2258 |
| 1995 | 538 | 495 | 43 | 8.0 | 2368 |
| 1996 | 570 | 539 | 31 | 5.4 | 2393 |
| 1997 | 545 | 535 | 10 | 1.8 | 2720 |
| 1998 | 599 | 579 | 20 | 3.3 | 2683 |
| 1999 | 527 | 480 | 47 | 8.9 | 2492 |
| 2000 | 564 | 541 | 23 | 4.1 | 2363 |
| 2001 | 507 | 499 | 8 | 1.6 | 2454 |
| 2002 | 583 | 537 | 46 | 7.9 | 2320 |
| 2003 | 547 | 466 | 81 | 14.8 | 2213 |
| 2004 | 600 | 453 | 147 | 24.5 | 2098 |
| 2005 | 565 | 459 | 106 | 18.8 | 2101 |
| 2006 | 524 | 336 | 188 | 35.9 | 1799 |
| 2007 | 497 | 285 (445)* | 212 (52)* | 42.7 (10.5)* | 1881 (2054)* |
| 2008 | 507 | | | | 2190 |

*Revised (ABS, 2010).

problems related to resources and staff (e.g., their number, level of training, etc.), and determination of intent by coroners: "Information on intent is necessary to complete the coding under ICD-10 coding rules. However, coroners' practices to determine the intent of a death may vary across the states and territories. In general, coroners may be reluctant to determine suicidal intent (particularly in children and young people). In some cases, no statement of intent will be made by a coroner. The reasons may include legislative or regulatory barriers, sympathy with the feelings of the family, or sensitivity to the cultural practices and religious beliefs of the family." (ABS, 2007). The ABS document emphasized the imperative of defaulting to "accident" when suicide intent was not evident: "In general, the ICD-10 coding index defaults external causes to 'accidental' unless there is information to the contrary. An exception is for stabbing deaths for which the default is homicide. [. . .] It is clear that the proportion of coronial cases which are not closed when coding is finalized has been increasing in recent years. In particular, cases which in previous years might have been coded as assault or suicide, might now be more likely to be classified as an accident" (ABS, 2007). More: "The ABS uses a strict interpretation of the ICD-10 coding rules . . . Other organizations [including our institute, by all evidence], however, may produce valid alternate estimates of numbers of deaths from specific external causes (for example deaths from suicide) using different methods."

I remember discussing the issue of underreporting in Australia in my plenary speech at the beautiful IASP conference in Killarney, Ireland, on August 29, 2007. I introduced the delicate topic with an old Irish saying: "Everybody can be pleasant until a cow invades their garden." Well, it was good, for once, to take on the role of the big intruder. In fact, Australia reacted quite promptly. On July 25, 2008, in Cairns, during a national conference on suicidal behavior, a rather unusual triumvirate – Dr. Michael Dudley, chair of Suicide Prevention Australia; Mr. Michael Barnes, Queensland State Coroner; and myself – presented the idea of a National Committee for Standardized Reporting of Suicide (NCSRS). This committee is today an effective reality; its scope and composition have been presented elsewhere (De Leo et al., 2010). Not only that: When appointing our Institute as the National Centre of Excellence in Suicide Prevention, the Commonwealth Department of Health and Ageing asked for advice "on the implications of existing suicide prevention data and on issues around their credibility." In addition, the Australian Suicide Prevention Advisory Council (ASPAC) has created a specific committee on "data quality and evaluation."

However, the best of all good news has been the unprecedented revision process put in operation by the ABS. This has led to the addition of 173 previously uncounted cases of suicide to the year 2007 (see Table 1). It is true that, among these cases, 160 are from Queensland alone. However, a second revision of the 2007 data has been announced and a more credible picture is close. It is expected that the large numbers of deaths that have been labeled as having "undetermined" or "ill-defined" causes (see Table 2) will be gradually reduced to more acceptable proportions. In fact, for 2007, ill-defined causes of death have been reduced by 37.7%, while the decrease in deaths with undetermined intent was of 23.9%. However, undetermined cases continue to be at least 12 times more frequent than they were in 2002–2003, while ill-defined deaths are double and quadruple what they were in 2003 and 2002, respectively (Table 2). It is evident that several hundred "new" cases could be added to the present revised figure of 2,053 cases of suicide for 2007.

*Table 2.* Selected causes of mortality after 2010 ABS revision

| | Suicide | Ill-defined | Undetermined | Accidents |
|---|---|---|---|---|
| 1999 | 2492 | 221 | 86 | 5287 |
| 2000 | 2363 | 221 | 51 | 5138 |
| 2001 | 2454 | 120 | 72 | 4840 |
| 2002 | 2320 | 206 | 65 | 4906 |
| 2003 | 2213 | 456 | 67 | 4865 |
| 2004 | 2098 | 430 | 81 | 5209 |
| 2005 | 2101 | 495 | 105 | 5267 |
| 2006 | 1799 | 1131 | 135 | 5350 |
| 2007 | 1881 | 1287 | 1089 | 4370 |
| 2007 revised | 2053 | 802 | 829 | 4486 |
| 2008 | 2109 | 874 | 1162 | 4852 |

Why has all of this happened? What were the motives for the unusual underreporting? No "conspiracy theories" are needed: it was most probably just human factors. To better understand this, we have to go back 10 years to when the National Coroners Information System (NCIS) was implemented. An internet-based databank, the NCIS was started by the Australasian Coroners Society and is managed by the Victorian Institute of Forensic Medicine. Since July 2000 (January 2001 for Queensland), the NCIS has collected all coronial cases in Australia and, thus, provides a formidable opportunity for case comparisons, statistics, and research. For a nation with eight different jurisdictions (one for each state) and not much homogeneity in procedures, the NCIS represents an essential step ahead in standardizing decisions and data collection. The NCIS is funded by a number of governmental agencies (e.g., Commonwealth Department of Health and Ageing, justice departments of each state/territory, Australian Institute of Criminology, Australian Competition and Consumer Commission, and SafeWork Australia). Its work has rapidly grown in importance, to the point that the ABS mortality data section (which in the meantime suffered from some restructuring) started to rely heavily on the new databank system. As a matter of fact, manual inspections at coroners' offices for unclear intent determinations decreased quickly in number. In 2007 the ABS wrote: "In total, the ABS manually codes around 25,000 deaths each

year, including virtually all deaths from external causes. Coders use information available from the NCIS (or when necessary, directly from coronial files)." In ABS documents, the date of 2006 is usually mentioned as the time for ceasing visits to coroner offices (e.g., ABS, 2010). However, Mr. Garth Bode (ABS First Assistant Statistician, Social Statistic Group) at the Senate Inquiry on May 18, 2010, referred to an earlier time, "Since about 2002 or 2003, we have no longer gone directly to coroners. For coronial cases, we rely on information on the NCIS" (Hansard Transcripts). Whatever the exact period, Mr. Bode reported on dates that match very well with the initial derailments in data quality. In sum, it seems that excessive reliance on the NCIS by the ABS for the period 2002/2003 up to 2007 could be at the root of the problem with suicide underreporting. This opinion is shared by Bradley et al. (2010).

On the hypothesis of coroners' backlog of open cases, Mr. Michael Barnes, the State Coroner for Queensland, has vigorously corrected the position expressed by the ABS. To the Senators he said: "If you look at . . . ABS submission, . . . they say that as of 19 November 2009 there were 1,984 2007 Queensland cases open. I was somewhat shocked to read that. I therefore interrogated our database and was able to establish how many were open . . . and found that in fact there were only 129. It is not just a slight over reporting; it is a very gross distortion. There is a similar problem with the 2008 figures . . . I am fairly comfortable that Queensland coroners are discharging their role satisfactorily. If there is a problem with the data, . . . we need to look to the way the ABS may have changed their procedures . . . There is a bit of a disjuncture between the collation and aggregation of data for public policy issues and the finding that coroners make . . . You get bogged down in details on a particular case and then, by the time you have resolved those concerns, making sure they are coded and uploaded onto a national database to be looked at for research purposes seems a very remote and almost irrelevant activity. Someone needs to take charge of taking information out of coroners' offices and getting it into a form that ABS can publish it in. Frankly, I would have thought that was the ABS' role, and certainly that is what they used to do – they used to come into the office and spend a week or two reviewing the paperwork . . . I think we had a better system when that was happening." (May 18, 2010, Senate Inquiry, Hansard Transcripts).

As is evident, there are different opinions and interpretations of suicide underreporting, but typical Australian pragmatism would say that, "at the end of the day" the important thing is that the problem has been identified and partly fixed. More corrections are being processed and they will be implemented soon. In addition, the National Committee for Standardized Reporting of Suicide will greatly assist in improving practices of accurate recording. I believe this is a victory for suicide prevention.

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