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Feature

The zero suicide approach: style over substance

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The zero suicide approach is based on the belief that all deaths from suicide in healthcare settings are preventable. We caution that the narrow focus on suicide prevention as a key indicator for measuring mental health system performance may have adverse consequences.

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The aspirational target of 'zero suicides' has been used to drive mental health system reform in many countries with the belief that all deaths from suicide in healthcare settings are preventable.[1] Such approaches and models narrowly focus on suicide prevention as a key indicator for mental health system performance. One of the most well-known approaches, the Zero Suicide Framework (ZSF), is both an aspirational target and a system-wide approach for suicide prevention within health services that was first developed in the USA. The ZSF has been lauded as an evidence-based approach to suicide prevention within health services.[2] Its framework is assembled under seven essential elements: leadership, training, identification, engagement, treatment, transition of consumers and improvement (see http://zerosuicide.edc.org/). Broadly, organisations can join the 'Zero Suicide Community' and are offered a ten-step guide to implementation; this includes the establishment of an implementation team, using the Zero Suicide Toolkit, and formulating an evaluation plan.[2]

The origins of the Zero Suicide Framework

The two programmes that provide the basis for the ZSF are the US Air Force Suicide Prevention Program ('US Air Force Program'), which ran from 1996 to 2002,[3] and the Perfect Depression Care initiative by Henry Ford Behavioural Health Services (HFBH), which was initiated in 2001.[4] However, there is limited evidence regarding the effectiveness of both these programmes.[2]

The US Air Force Program

The US Air Force Program comprised of 11 multi-layered components.[5] The key pillars included the early identification of at-risk individuals and a range of community-based efforts to increase awareness of risk factors that confer vulnerability for suicide. An early pre–post-secondary analysis of the US Air Force administrative data-sets indicated a 33% reduction in suicide deaths during the intervention (1997–2002) relative to the period before (1990–1996).[3] However, these gains were not sustained: there was a spike in suicide rates in 2004[5] and a general upward trend of suicide rates in the 2010s.[6] The US Air Force Program was gradually phased out in a few years following 2002. In 2019, the lead author of the US Air Force study wrote that 'suicide's dramatic rise in the United States during the first years of the 21st century has resisted persistent efforts – involving the general population, veterans, and military personnel – to turn the tide'.[7] Those associated with the US Air Force study never stated that it could be broadly generalised or applied to at-risk populations, nor has there been any evidence for the same. The ZSF advocates arguably misapplied a population-oriented, community-specific, intervention to healthcare settings. Nevertheless, this study continues to be cited as scientific evidence for the ZSF.[8]

The Perfect Depression Care initiative

The Perfect Depression Care initiative was developed by the Henry Ford Health System with the key goal of suicide elimination.[4] The programme was modelled on the Institute of Medicine's 'Crossing the Quality Chasm' report on healthcare quality in the USA that highlighted broad aims and guidelines for a redesign of the health care system.[9] The initiative was described as 'landmark', leading to 'zero suicides for 18 months in 2009–2010, and a statistically significant reduction in suicide rates within Henry Ford from its inception'.[10] The accompanying study, a pre–post-secondary analysis of administrative data from a single organisation in Detroit, reported that the rate of suicide in the patient population decreased by 75%, from 89 per 100 000 at baseline (in 2000) to 22 per 100 000 for the 4-year follow-up interval (the average rate for 2002–2005).[4] A follow-up article titled 'How we dramatically reduced suicide', published in the *New England Journal of Medicine Catalyst* magazine, provided a graphical representation of suicide rates in the decade 1999–2009, illustrating a sharp decline in suicide rates following implementation of the initiative.[11] The graph looked impressive but was misleading for several reasons. First, no indication was given of suicide rates before the implementation of this initiative. Thus, it is unclear if there was already a natural decline in suicide rates in the years leading to 1999, or whether 1999 represented an outlier in the general trend of suicide. Second, the *y*-axis showed suicide rates per 100 000 member patients without stipulating the actual number of suicides. However, earlier correspondence by the authors to the editor of the *JAMA* revealed a total of 35 suicides across the decade.[12] This indicates that the dramatic decline illustrated in the graph approximately represents a reduction from eight to zero suicides. Finally, the graph omitted the suicide rate for the following year, 2010, provided in the letter. This would have shown an increase back to the third highest figure in the series (from 0 to 47.6).[12] The Perfect Depression Care initiative was limited by the small number of suicides in the sample population and, moreover, applied only to a single health maintenance organisation membership. The letter further noted that there may have been a 'potential underscoring of suicides in official records'.[12]

Referring to the worldwide Zero Suicide movement that has emerged since, Henry Ford Health itself stated in 2018 that 'many health systems and organisations have struggled to eliminate suicide and the statistics clearly speak to the ineffectiveness of those models'.[10]

Indeed, there is scant evidence demonstrating the success of any individual programme in achieving the stated aim of suicide reduction.[13,14] Preliminary findings following the implementation

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of Zero Suicide in a community-based behavioural healthcare organisation (Centerstone of Tennessee) have been quoted as pointing to a 65% reduction in the rate of suicide.[1,15] To our knowledge, this figure can only be traced back to a personal communication with the Director of the Zero Suicide Institute.[1]

Aspiring towards zero suicides: Australian case study

In 1997, a formal evaluation of Australia's national mental health policy recommended the introduction of effectiveness markers to assess the impact of the policy, including reduced suicide prevalence. Accordingly, in 1998, the Second National Mental Health Plan included suicide reduction as a key outcome for measurement and, in 2003, the third National Mental Health Plan made an explicit link between mental illness and suicide.[16]

More recently, interventions based on the ZSF have served as a guiding post for mental health policy and planning. The Queensland State Government has explicitly adopted the ZSF[17] while other states, such as New South Wales,[18] Victoria[19] and South Australia,[20] have implemented strategies with similar aspirations to work towards zero suicides. In March 2022, the Australian Federal Government allocated 46 million dollars of the 2022–2023 budget to associated initiatives, noting that, 'as we work towards our goal of zero suicides, we are building upon our record investment in suicide prevention'.[21] To date, however, the evidence for these interventions is sparse.

Stapelberg et al[15] evaluated the efficacy of a clinical suicide prevention pathway (SPP) based on the ZSF in a Queensland mental health service in a total of 604 persons with 737 suicide attempt presentations between 1 July and 31 December 2017. They compared the rates of consecutive hospital presentations or re-presentations for those on the SPP to those who were not because of a non-specific and broad range of individual and clinician factors. The SPP lasted, on average, for 16 days and was found to be most efficacious in the first 14 days, with higher rates of repeated suicide attempts at 90 days in both groups. Notably, this study did not demonstrate evidence of decrease in actual suicides, only decreased re-presentations with suicide attempts to the hospital emergency department, as one would arguably expect when receiving face-to-face follow-up care following an attempt. A further evaluation of the SPP was conducted through analysis of cumulative rates of suicides in the 4 years before (2013–2016) and 3 years after the implementation of the SPP (2017–2019).[22] This demonstrated a reduction of 23.3% in the rate of mental health consumers who died by suicide since its implementation. However, like the previously mentioned Perfect Depression Care study, a graph illustrated this impressive decrease, but no absolute numbers were provided.[22] To our knowledge, no follow-up studies have been published to investigate the effect on re-presentations or actual suicides in the long term.

Potential consequences of the Zero Suicide Framework

There is some evidence for developing mental health services with elements similar to the ZSF. As exemplified in England and Wales and evaluated by While et al,[23] developing such services can lead to laudable outcomes even if this may not have a significant impact on suicide rates in the general population. This highlights that using suicide as an end-point indicator of health system functioning may be misleading.

The ZSF advocates for assigning suicide a special status as a major marker of a healthcare system's performance. Suicide is a rare and complex phenomenon with multiple socioeconomic-environmental confounders that extend beyond the remit of psychiatry or even healthcare.[24] The analysis of suicide trends requires long historical data, adequate sample sizes that allow adjustments by age, gender and other population characteristics, complex approaches to data analytics, including interrupted time series,[25,26] and the adoption of a health ecosystem approach[27] that could explain variations across regions, local areas and over time.[28] While suicide is a sentinel event that could be used as an indicator of flaws in the care system, this metric must be considered with caution and with reference to multiple integrated markers within the local context.

When suicide is selected as an end-point driver of mental health care reform, there are many potential adverse consequences that we must consider. First, given the broad objective of suicide prevention, there is a risk of surrogation effect in which concrete metrics of suicide rates, suicide attempts and suicidal thoughts replace the ultimate goal of suicide prevention, particularly where healthcare systems readily accept such substitution.[29] This would then misguide the direction of mental healthcare provision and reforms. For instance, where suicidal ideation or attempts are designated as key items that drive access to acute care and complex services, patients who are not suicidal but equally require specialist mental health support (e.g. those with severe anxiety or depression) are likely to experience barriers in accessing care. This may have the paradoxical effect of exacerbating mental ill health, a risk factor for suicide.[30]

Where mental health services focus on suicide elimination as a target, it leads to an overemphasis on acute over chronic and/or preventive care, undermining the strength and scope of community models of mental health care.[31,32] It may also disincentivise the balanced provision of care across different mental health conditions and target populations. While the ZSF champions tailored care, the opposite may occur at the clinical coalface as the focus on assessing suicide risk is likely to divert resources from a comprehensive psychiatric formulation towards more defensive, algorithmic medical practice. The aspirational goals must be translatable into an actionable strategic plan that accounts for such potential consequences; otherwise, a detachment between mission and planning is likely to result.[33]

Towards broader, multifaceted evidence-based strategies

Suicide prevention requires more than healthcare solutions. The narrow focus on preventing suicide through healthcare alone is a major limitation that hampers the ability of the ZSF to adequately address the complex challenges associated with suicide prevention. Suicide prevention efforts must be multifaceted and involve a whole-of-government and whole-of-community approach given the important social determinants of mental ill health and suicide.[34] These are the factors that affect social, economic and physical environments; for example, poverty, unemployment, homelessness, substance use and domestic violence. Thus, strategies must engage all levels of the health ecosystem[31] and non-health sectors, including media regulations, means restriction, drug and alcohol laws and gatekeeper training.

In contrast to the ZSF, which operates only in healthcare settings, multi-component approaches to suicide prevention, such as the LifeSpan and the European Alliance Against Depression (EAAD), include essential community-based interventions at the population level adapted to the local context.[14] The LifeSpan approach combines nine evidence-based suicide prevention strategies for simultaneous implementation within a community-led framework with local-level governance for a tailored,

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coordinated approach. Programme components include universal prevention strategies such as means restriction and public awareness raising campaigns; selective prevention strategies such as training to upskill frontline responders to support individuals with suicidal ideation or self-harming behaviours and capacity-building of general practitioners (GPs) in suicide detection; and indicated strategies such as the establishment of aftercare services in areas of need.[35] There is a paucity of evidence regarding the effectiveness of this approach.

Similarly, the EEAD is a broad, community-based, multi-faceted approach that simultaneously targets depression and suicidal behaviour and includes early clinical interventions and community and population health interventions.[36] Its four-level intervention strategy targets (a) GPs with capacity-building in diagnosis and treatment of depression and suicidality, (b) the general public with public awareness campaigns, (c) community facilitators with training to improve the health literacy of target groups, such as priests, policemen, pharmacists and journalists, and (d) at-risk individuals and their next-of-kin with interventions to improve knowledge, promote self-help activities and facilitate help-seeking behaviour.[36] A recent systematic review of population and community-based interventions to prevent suicide found promising evidence for the EEAD relative to other interventions[37]; however, the results of the EAAD study itself were equivocal.[36]

While the heterogeneity of suicide prevention strategies and outcome measures continues to limit conclusions about the effectiveness of specific suicide prevention strategies,[30] broader strategies like the EEAD and LifeSpan are more likely to be effective than narrow ones like the ZSF, particularly as the specific target of zero suicides in the latter is more likely to distort optimal resource allocation.[29] Indeed, the dramatic decline in suicide rates in countries such as Denmark and Finland has been attributed to intentional, broad strategies with collective alignment of local, regional and national priorities from a socio-ecological perspective, rather than one based exclusively in health systems.[28]

Using suicide prevention as a key indicator of mental health system performance may distract from broader, more impactful opportunities for mental health reform; for instance, earlier intervention and community-based rather than healthcare-focused settings. One such zero suicide approach, the ZSF, has inspired suicide prevention polices in mental health care settings in a number of countries. However, as we have highlighted, the seminal studies that provide the foundation of the ZSF have limited evidence of efficacy in mental health settings. Twenty years after its release, and despite wide endorsement, funding and implementation, there is a dearth of published evidence demonstrating success for the ZSF in achieving the stated aim of suicide reduction anywhere in the world. Importantly, the narrow focus on suicide prevention within healthcare settings neglects appreciation of the complex socioeconomic-environmental phenomena that underlie suicidality.

The ZSF is an arguably vague framework with a scant evidence base, particularly for application in healthcare settings. Despite this, the concrete goal championed by the ZSF, that of 'zero suicides', is appealing and has been widely promulgated in mental health services, ahead of evidence for the same. It is wise to consider if we may be diverting resources from core mental health care and public health investments that may be more effective in tackling mental ill health and, in doing so, preventing suicides.

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