National Suicide Prevention Strategies – Progress and Challenges

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Suicide and attempted suicide/self-harm (suicidal behavior) constitute a major global public health concern, with an estimated annual toll of 793,000 deaths worldwide (https://www.who.int/gho/mental_health/suicide_rates/en/) and up to 20 times as many episodes (no accurate count is possible) of attempts (World Health Organization [WHO], 2014). Globally, suicide is the second leading cause of death among young adults aged 15–29 years. Although the age-standardized suicide rate in low- and middle-income countries (LAMICs; 11.2 per 100,000) is lower than the rate in high-income countries (HICs; 12.7 per 100,000 population), a majority (75%) of suicide deaths worldwide occur in LAMICs (WHO, 2014).

In recent years, the WHO has led a robust international policy response, promoting evidence-informed strategy and action to prevent suicide and setting suicide reduction targets. In 2013 the WHO published the Global Mental Health Action Plan, 2013-2020 (WHO, 2013). Adopted by health ministers of all 194 member states, the Plan recognizes the essential role of mental health in achieving health for all and specifies actions to meet the overall goal of promoting mental well-being and preventing mental illhealth. In the context of national efforts to develop and implement health policies and programs, suicide prevention is considered to be an "important priority." Member states are expected to "[d]evelop and implement comprehensive national strategies for the prevention of suicide," with the goal of reducing the suicide rate by 10% by 2020 (WHO 2013, p. 17; see, also, Saxena, Funk, & Chisholm, 2013).

The subsequent publication of the WHO report *Preventing Suicide: A Global Imperative*, in 2014 (WHO, 2014), was a major and timely strategic next step to increase the commitment of national governments and health ministers to move from suicide prevention policy and strategy development to implementation and action.

The WHO prioritization of suicide prevention was highlighted in its 2015 publication *Health in 2015: From MDGs [Millennium Development Goals] to SDGs [Sustainable Development Goals].* SDG Target 3.4 calls for a reduction in premature mortality from noncommunicable diseases through prevention and treatment and promotion of mental health and well-being, and notes the "major toll" of depression and suicide on global population health (WHO, 2015, pp. 155, 157). The suicide rate is an indicator (3.4.2) within Target 3.4. In this historic step, the UN acknowledged the societal impact of mental illness, and defined mental health as a priority for global development for the next 15 years (Votruba, Thornicroft, & FundaMentalSDG Steering Group, 2016).

What Is the Purpose of a National Suicide Prevention Strategy?

Suicidal behavior is complex and multifaceted, resulting from a wide range of interacting genetic, psychological, psychiatric, social, economic, cultural, and other risk factors that operate at multiple levels (societal, community, relationship, and individual).

In order to address the complexity and magnitude of suicidal behavior, national governments have recognized the need to develop and implement suicide prevention strategies that adopt a sustained, coordinated, multisectoral approach, led by a health ministry, involving a range of governmental and nongovernmental agencies working in collaboration, both nationally and locally. These strategies should be grounded firmly in research evidence of approaches (interventions) that are likely to contribute significantly to the prevention of, and reduction in, suicidal

Table 1. Why a national suicide prevention strategy is needed

Indicates government's clear recognition that suicidal behavior is a priority public health issue and that society is committed to its prevention and reduction

- Provides a logic model and structural framework, identifying vision and strategic objectives, inputs (e.g., resources, expertise, partnerships), outputs (e.g., participants, activities), short-term outcomes, long-term impact, and approach to monitoring and evaluation
- · Provides authoritative leadership and guidance about effective implementation of evidence-informed activities
- · Identifies partners who are accountable for specific tasks, and promotes effective collaboration and coordination at national and local levels
- · Identifies crucial gaps in legislation, service provision, and knowledge
- · Indicates the scale of necessary human and financial resources
- · Shapes advocacy, awareness raising, and media communications
- Proposes a robust monitoring and evaluation framework to promote accountability and learning, and to track progress toward the achievement of strategic objectives
- Provides a context for a research agenda on suicidal behavior and its prevention/reduction

Table 2. Typical components of a national suicide prevention strategy

- · Restriction of access to commonly used methods of suicide
- · Promotion of responsible media reporting
- · Access to health and social care services
- · Training and education
- · Psychotherapeutic interventions intended to reduce repeated suicidal behavior
- Enhanced care/follow-up targeted at people with a history of attempted suicide
- · Crisis intervention
- · Postvention
- · Awareness raising
- · Addressing stigmatized attitudes toward mental ill-health and suicidal behavior
- · Surveillance, monitoring, and evaluation
- · Oversight and coordination

behavior. Table 1 summarizes the case for establishing a national suicide prevention strategy (WHO, 2012 [adapted and elaborated]).

What Is a National Suicide Prevention Strategy?

A national suicide prevention strategy is a systematic way of developing a comprehensive and integrated national response to suicidal behavior and a structural framework to support effective suicide prevention action and evaluation.

Given the complexity and multidetermined nature of suicidal behavior, suicide prevention strategies necessarily comprise a range of approaches and actions. The typical components of a national suicide prevention strategy are presented in Table 2. The selection draws on the discussion in the WHO global report (WHO, 2014), a recent *Crisis* editorial (Arensman, 2017), and a publication by Platt and Niederkrotenthaler (2019).

The evidence base supporting the incorporation of these components in a national suicide prevention strategy is reasonably extensive but uneven in terms of quality, scope, and consistency. The most compelling evidence relates to restrictions on access to common methods of suicide, although not all interventions appear to have equal impact (Zalsman et al., 2016). The strongest preventative impact is associated with structural interventions (bridges, tall buildings, railway stations/tracks) and restriction of access to pharmacological agents, while research on restricting access to firearms and to ligature points in institutional settings (e.g., mental health units, prisons) produces more mixed results. There is also evidence of weaker power concerning the preventative impact of settings-based programs (e.g., in schools, communities, workplaces, prisons, and the armed forces), education, and training targeted at primary care physicians, lithium, cognitive behavioral therapy (CBT), and dialectical behavioral therapy (DBT), and some enhanced care/follow-up interventions (brief contact; Hawton et al., 2016; Zalsman et al., 2016). There is insufficient or conflicting evidence concerning the effectiveness of the following components: general public awareness raising, media reporting guidelines/restrictions, substance misuse programs, gatekeeper training, telephone-based services, postvention, screening, phar-

macological interventions (excepting lithium), some psychotherapeutic interventions (excepting CBT and DBT), and enhanced care/follow-up (excepting brief contact). (For a more detailed discussion, see Platt & Niederkrotenthaler, 2019.)

How and Where Have National Suicide Prevention Strategies Developed?

In 1996 the United Nations (UN) published Prevention of Suicide: Guidelines for the Formulation and Implementation of National Strategies (UN, 1996). These guidelines, developed by international experts, constitute the first attempt to develop a coherent framework for the development of a national suicide prevention strategy. At that time, Finland was the only country known to have developed and implemented a government-sponsored, systematic, national response to suicide. Over the intervening years the number of countries adopting a national suicide prevention strategy has grown to about 38. Close to 10% of low- and lowermiddle-income countries have a stand-alone government-adopted national suicide prevention strategy, while about one third of upper-middle and high-income countries have a national strategy. This represents an increase in the number of countries reporting having a national suicide prevention strategy since 2014 (WHO, 2018a). In addition, there is an increasing number of countries with a national framework, national programs for specific subpopulations, or where suicide prevention is integrated into the national (mental) health plan (WHO, 2018a).

Progress is most notable in HICs, despite the fact that the majority of global suicide deaths occur in LAMICs. Following the publication of the WHO global report on suicide (WHO, 2014) in 2014, the development and implementation of national suicide prevention strategies have accelerated, in particular in LAMICs such as Bhutan, Guyana, Namibia, and Iran. In addition, the International Association for Suicide Prevention (IASP) has supported an initiative by the Ministry of Public Health in Afghanistan to develop a national suicide prevention program, supported by a multisectoral advisory group. However, liaising with partners and stakeholders in suicide prevention in Afghanistan, in particular arranging face-to-face meetings, is challenging due to infrastructural limitations and the ongoing adversity resulting from conflicts and war. A further incentive to the development of national responses to suicidal behavior is the translation of the WHO global report into all six UN languages (WHO, 2014).

Different Pathways Recommended for Countries at Different Stages of Economic Development

According to the WHO global report (WHO, 2014), targeted suicide prevention activities (see Table 2) can be implemented regardless of the stage of socioeconomic development in the country.

In countries where suicide prevention activities have not yet taken place, the emphasis is on action. These countries are advised to seek out stakeholders and develop activities opportunistically where there is greatest need or where resources already exist (WHO, 2014). In this regard, the recently published document Preventing Suicide: A Community Engagement Toolkit (WHO, 2018b) offers practical support by providing a step-by-step guide for the initiation of suicide prevention activities at community level. It describes a participatory, bottom-up process by which communities (including community leaders, health workers, parliamentarians, teachers, social workers, police, firefighters, and business leaders) can work together to identify, prioritize, and implement activities that are important and appropriate to their local context and that can influence and shape policy and services at local and national levels (WHO, 2018b).

In countries that have some existing suicide prevention activities, it may be productive to focus first on consolidation by conducting a situation analysis. These countries should identify gaps in services and work toward a comprehensive national response by recognizing and mapping all stakeholders and delegating roles and responsibilities within the national response (WHO, 2014).

For countries that already have a fairly comprehensive national response the emphasis should be on evaluation and improvement. While evaluation is equally important for continuous improvement at earlier stages, at this stage resources are often more readily available for in-depth evaluation. The emphasis is on the timely inclusion of new data and ensuring that the national response improves in effectiveness, efficiency, and sustainability (Fleischmann et al., 2016; WHO, 2014).

Barriers to Effective Implementation of Strategy

A national suicide prevention strategy may embody the key principles and incorporate the high-level features advocated in the UN guidelines (UN, 1996) and promote evidence-informed interventions (Table 2), yet fail to achieve its objective of reducing the incidence of suicide

and attempted suicide as a result of ineffective implementation. Strategy implementation refers to the mechanisms, resources, and relationships that help to translate the strategy into action. Effective implementation is necessary for the achievement of strategic objectives and outcomes. There are several challenges or barriers to successful implementation, however, including: limited knowledge, capacity, or capability among partners about how to change working practices, in order to deliver interventions; ineffective planning, coordination, or collaboration between delivery partners; a mismatch between inputs (resources, equipment, or personnel) and the ambition, demands, and outcomes of the strategy; an unsupportive political, social, or legal environment; and limited capacity to monitor implementation progress and make necessary adjustments.

What Do We Know About the Outcomes of National Suicide Prevention Strategies?

While there is an evidence base relating to the effectiveness of *discrete components* (*interventions*) of national suicide prevention strategies (see above), research evidence on the effectiveness and cost-effectiveness of national suicide prevention strategies, *considered as a whole*, is extremely limited.

There are examples of process (implementation) evaluation studies of national suicide prevention strategies in several countries, including Scotland (Platt et al., 2006; Russell, Lardner, Johnston, & Griesbach, 2010), England (Department of Health, 2017), Northern Ireland (Department of Health, Social Services and Public Safety, 2012), the United States (Substance Abuse and Mental Health Services Administration [SAMHSA], 2017), and Australia (Australian Healthcare Associates, 2014). National program-level outcome evaluations, on the other hand, are difficult to find. In fact, among the 115 publications (from 41 countries) on suicide prevention held in the WHO MiNDbank database (https://www.mindbank.info/collection/topic/suicide_prevention_), none appear to have reported findings on program-level outcomes.

Countries with national strategies typically monitor temporal trends in the suicide rate, with the intention of measuring whether there has been a decline in the suicide rate (with or without setting a quantitative target) over a specified period of time (covering implementation of the strategy). This type of monitoring, however, constitutes outcome evaluation only in the narrowest possible sense. First, without monitoring trends in other putative influences (confounders, covariates) on the suicide rate, it is not

possible to make a valid claim that a decline in the suicide rate during the course of implementing a national strategy is *due to* the "dose" of suicide prevention associated with the strategy. Second, given the multicomponent composition of national strategies, and the (reasonable) assumption that not all of the components will have contributed equally to the outcome (in fact, some may have made no difference and some may have had a negative impact), it is important to identify those components that have made the greatest positive contribution. Outcome evaluation of the components of a national strategy is required in order to enhance understanding and learning among the delivery team and the wider suicide prevention policy and practice community. This type of outcome evaluation is, however, rather uncommon.

We have identified two studies that have set out to measure the effects of national suicide prevention strategies on suicide rates in several countries. De Leo and Evans (2004) compared suicide rates and trends pre- and post-implementation in four countries (Finland, Norway, Australia, and Sweden). They report a positive impact on suicide rates (i.e., a decline) among men and women in Finland, but negative impacts on men and women in Norway, on women in Australia, and on men in Sweden. While acknowledging several methodological limitations, not including the absence of covariates/confounders in the analysis, the authors conclude that "there was more evidence for negative impacts than either positive or neutral impacts" (De Leo & Evans, 2004, p. 89).

Matsubayashi and Ueda (2011) undertook an ecological study to test whether there was a statistically significant decrease in suicide rates before and after implementation of national suicide prevention strategies over the period 1980-2004. The sample comprised 21 countries belonging to the Organisation for Economic Co-operation and Development, 11 with and 10 without a strategy, in 2004. Using regression analysis and including controls for political, economic, and sociodemographic country characteristics that might affect the suicide rate, the authors report a reduction in the overall suicide rate associated with the introduction of national suicide prevention strategies. The reduction was most marked for the elderly and young populations, but was not statistically significant in working-age groups. While noting methodological limitations, the authors conclude: "Our findings imply that the implementation of a national strategy, regardless of its form, can be effective in reducing suicide rates" (Matsubayashi & Ueda, 2011, p. 1400).

Why Has There Been So Little Progress in Evaluating National Suicide Prevention Strategies as a Whole?

The scarcity of evaluation studies of national suicide prevention strategies is not entirely surprising, given limited resources allocated for evaluation purposes and the methodological challenges that have to be surmounted.

The first challenge concerns the use of (change in) the population suicide rate, which is the most common final outcome targeted by national suicide prevention strategies. Suicide is a rare event, however, and temporal fluctuations in suicide incidence during "normal" periods (i.e., when no national suicide prevention strategy is being implemented) are common. Consequently, in countries with small populations (or in regions of larger countries) it can be difficult to demonstrate that a change in the suicide rate over time is statistically significant (or, stated more crudely, different to the change that occurs during normal periods). National strategies should identify and measure (change in) intermediate outcomes that are situated on the theoretical causal pathway between inputs and final outcome (suicidal behavior). Ideally, these intermediate outcomes should link to the components of the strategy, thus permitting the identification of components that contribute significantly to any observed effect. Connecting for Life, the renewed Irish suicide prevention strategy, provides an example of an outcomes framework that seeks to promote such a link (Department of Health [Ireland], 2015).

Second, data on suicide incidence are not available or are unreliable in many countries of the world; it is therefore impossible to generate a trustworthy measure of change. Where reliable data are available, there may be a delay of several years between occurrence/registration of suicide deaths and publication, causing problems for the synchronous monitoring of progress toward strategic outcomes and targets.

Third, in measuring change associated with the delivery of a national suicide prevention strategy, it is necessary to identify at least two time periods: before implementation (baseline) and during/after implementation. The timing of implementation, however, is highly problematic. Implementation typically develops organically and unevenly over time. Does a strategy begin when the first components are delivered or when it has reached maturity (however defined)? What about strategies that are second generation, building on a previous suicide prevention strategy, for example, Connecting for Life (following Reach Out) (Department of Health [Ireland], 2015) in Ireland or Every Life Matters (following Choose Life) in Scotland (Scottish

Government, 2018) or the National Suicide Prevention Strategy (originally published in 2001 and subsequently revised and re-launched in 2012) in the United States (USDHHS, 2012)? What is the appropriate baseline in these situations?

Fourth, and linked to the previous point, it would be naïve in the extreme to assume that maturity or full implementation has occurred in line with the strategic plan (fidelity). In fact, a major challenge facing both deliverers and evaluators of national suicide prevention strategies is the measurement of the quantity (dose, amount or intensity) and quality of implementation activity. It is unlikely that a poorly implemented strategy will result in a significant reduction in suicide incidence.

Fifth, it is not possible to have confidence in attributing reduction in suicide incidence to a national suicide prevention strategy without taking into account confounders and covariates (an error known as *model misspecification*), for example, economic recession or political disruption, and the quantity/quality of implementation (see previous point).

Sixth, strategies are often put into effect at the peak of a normal suicide incidence cycle. As a result, a decline in the suicide rate *co-occurring with* the introduction and implementation of a national suicide prevention strategy may be misconstrued as a substantive intervention effect (i.e., *caused by* implementation of the national strategy) when, in fact, it is a statistical phenomenon known as regression to the mean (whereby a variable that has an extreme value at its first measurement will tend to be closer to the average at its subsequent measurement).

Finally, national programs that operationalize suicide prevention strategies constitute complex interventions, characterized by differences in stakeholders' theories of program logic, multiple interacting components, nonlinearity, change over time, and contextual impact (Pawson, Greenhalgh, Harvey, & Walshe, 2004; see Table 3). Traditional evaluation approaches (e.g., using a [quasi-] experimental design) are inappropriate and inadequate to the task of capturing this complexity and are likely to limit opportunities for learning about the intricate pathways between the program (as a whole and via its component parts) and intended outcome(s). Theory-driven realist evaluation (Pawson, 2013; Pawson & Tilley, 1997), focused on the importance of understanding what works, in which circumstances, and for whom (rather than merely, whether it works), is far more suited to this challenge.

Conclusion

Over the past 30 years, national governments have increasingly demonstrated their understanding of the com-

Table 3. Seven characteristics of complex health interventions

• The intervention is a theory of theories. It is vital to uncover differences in stakeholders' understandings of program theory (logic model) and try to reconcile these differences through the development of a shared theory.

- The intervention involves the actions of people. Understanding human intentions and motivations, what stakeholders know and how they
 reason, is essential to understanding the intervention.
- The intervention consists of a chain of steps or processes. At each stage, the intervention could work as expected or "misfire" and behave differently.
- · These chains of steps/processes are often not linear. Negotiation and feedback are involved at each stage.
- · Interventions are embedded in social systems. How they work is shaped by this context.
- Interventions are leaky and prone to modification as they are implemented. To attempt to freeze the intervention and keep it constant would
 miss the point. The process of adaptation and local embedding is an inherent and necessary characteristic.
- · Interventions are open systems and change through learning as stakeholders come to understand them.

plex and multidetermined nature of suicidal behavior and recognized the importance of developing and implementing a coordinated, comprehensive, strategic, public health approach to its prevention. Some type of national suicide prevention strategy (with or without action plan) has been published in about 38 countries, mostly HICs but with increasing numbers of LAMICs. These strategies tend to incorporate (all or some of) a core set of approaches or interventions, for which there are varying degrees of evidential support. Unfortunately, policy makers, practitioners, and researchers working in suicide prevention across the globe have learned little about the process of implementing national strategies and even less about their effectiveness and cost-effectiveness as a result of the paucity of published studies or reports on these topics.

The progress that has been made is due, in large measure, to the concerted efforts of the Department of Mental Health and Substance Abuse at the WHO (Geneva), which has been responsible for the publication and dissemination of key policy documents and the provision of guidance and practical assistance to national governments, especially of LAMICs. The WHO has, in turn, been able to call on IASP for support in working with national governments to develop and evaluate suicide prevention strategies. In 2016 IASP established a Special Interest Group (SIG) on the Development of Effective National Suicide Prevention Strategy and Action (https://www.iasp.info/effective_national_ suicide_prevention_strategy_practice.php). This SIG aims to establish an active forum of international experts who will collaborate with relevant organizations, ministries, and NGOs in the development of suicide prevention strategies in countries (especially LAMICs) where, historically, there has been little or no suicide prevention activity. It is also tasked with developing guidance for establishing, implementing, and evaluating community-level suicide prevention activities in countries where a national strategy is not currently feasible.

Taking into account the current state of the art with regard to the development, implementation, and evaluation

of national suicide prevention strategies, we conclude by making the following recommendations to grant-making bodies, international organizations, and national governments:

- National and international grant-awarding bodies should support further research on the effectiveness of components (interventions) of national suicide prevention strategies, especially those for which there is currently insufficient or conflicting evidence (see Platt & Niederkrotenthaler, 2019, Table 2).
- WHO, IASP, and other international organizations (especially NGOs) working in mental health promotion and suicide prevention should support countries, especially LAMICs, where suicide prevention activities are nonexistent or minimal, in order to promote action at the community level (at least initially).
- National governments in HICs should promote evaluation of the effectiveness of suicide prevention strategies, using research designs that are appropriate to the multifaceted complexity of the phenomenon. A concerted effort to explore cost-effectiveness should also be made.
- National governments need to pay more attention to the delivery phase and long-term sustainability of national suicide strategies, recognizing and engaging with the challenges or barriers to successful implementation.

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