

1

Translating Science into Action



QUICK CHECK

A	Introduction	3
B	Principles	6
C	Scope of the Problem and Trends	7
D	Public Health Model Includes Full Continuum of Experiences from Ideation to Attempts to Death and Loss	12
	• Federal Investments in Research and Programs Are Necessary for Reducing Suicide Rates	15
E	Key Takeaways	16
	References	17

A Introduction: Science, Culture, and Readiness to Act

The current scientifically informed view of suicide is that, while complex, suicide is a health-related outcome. Driven by a convergence of health factors along with other psychosocial and environmental factors, suicide risk is multifactorial. Like most health outcomes, a set of genetic, environmental, and psychological/behavioral factors are relevant. It is critically important that health professionals develop a current understanding of suicide as older views have permeated and clouded societal understanding leading to assumptions and judgment that have silenced generations of people suffering suicidal struggles or loss of a loved one to suicide.

Evolving attitudes toward suicide are not limited to the scientific or medical field. Science is impacting popular culture as well. Recent polls in the USA show that public perceptions of mental health and suicide are changing quite rapidly toward greater awareness, open-mindedness, and diminishing stigma.¹ For example, 90% of respondents believe that mental health is as valid and important as physical health, and say they would help if someone they know were to become suicidal. However many add they are not necessarily equipped with skills and language to know how to help.



Key Point

Suicide, while complex, is a health-related outcome.



Figures 1.1, 1.2, 1.3 Examples of positively evolving attitudes toward mental health and suicide prevention among the American public



New attitudes toward mental health in general and suicide in particular are reflected in the growing suicide prevention movement that has emerged in recent years in the USA, UK, Australia, and other nations. The truth is that for millennia, people who had lost loved ones and people who experienced a loved one's suicidal crisis or their own largely kept their experiences to themselves, but now are speaking out and are part of leading the movement to advance change. Advocates on all sides of the issue have come together to raise public awareness, to advocate for changes in national policy for increases in research funding, improved healthcare access, for enforcement of mental health parity, and to call for an end to discriminatory practices in school and workplace settings. This public movement has led to hundreds of thousands of people participating in events in the USA such as the Out of the Darkness Walks for suicide prevention in all 50 states, advocacy activities at state and federal levels, and educational programs on how to prevent and respond to suicide in workplaces, schools, and faith-based settings.

The bottom line is that in today's environment, healthcare providers need not be hesitant to address mental health concerns with their patients. The truth is that many patients may be open to dialog and in need of support but 1) may not be sure if their health provider will respond in a compassionate and knowledgeable way related to suicidal thoughts or mental health concerns, and 2) they may not know how to bring up their symptoms or concerns and may not have sophisticated language for symptoms. But even with these concerns present or with current robust mental health,

many patients appreciate having their mental health screened and addressed in a manner similar to physical health.

While culture and attitudes toward mental health are opening up, it is a time of transition in culture and belief systems with natural unevenness to the pace and regionality of changing views. Thus, in general, the public's level of mental health literacy in terms of when and how to take action remains relatively low.² Health professionals can help deepen their patients' understanding of mental health in the same way they do for physical health. As is the case for many physical health targets such as cardiovascular health, for patients who carry any degree of elevated risk, patient education, clinical treatment, family support, and personalized lifestyle habits can improve prognosis and change outcomes.



Key Point

Patients appreciate having their mental health addressed in a similar manner as their physical health. Routine health maintenance in primary care should include mental health and suicide risk reduction. For all health professionals, basic principles included in this handbook will facilitate caring, competent handling of patients who are at risk for suicide.

B PRINCIPLES

- From a public health perspective, suicide is considered a generally preventable cause of death. This does not mean all suicides can be prevented, or that suicide is a predictable event.
- Health systems and providers across disciplines have a vital role to play in suicide prevention.
- The combination of scientific discovery and voices of people with lived experience and loss is advancing culture change and a new societal readiness when it comes to suicide prevention.
- Cultural norms in many regions of the world are changing in relation to mental health and suicide, with people beginning to open up and speak out about mental health, reducing the stigma around mental health, help seeking, and suicide prevention.
- While the absolute number of suicides around the globe has been on the rise since 2000, the overall rate has been decreasing as the world's population grows.
- Suicide risk is complex and multi-faceted for individuals and for populations.
- A multi-pronged approach is needed to prevent suicide in a population. Efforts must include basic public health strategies such as universal education, community based initiatives, effective and available clinical care, and better surveillance of suicide attempts and deaths.
- Other critical components of an effective suicide prevention effort are investments in research and the development of new suicide prevention focused treatments for clinical use.
- Federal and local investments in suicide prevention research, community programs, and clinical treatments can reduce suicide mortality.



Key Concept “Prevention” versus “Prediction”

- Research shows that suicide can be prevented.
- From a public health perspective, suicide is considered a generally preventable cause of death.
- This does not mean all suicides can be prevented, nor that suicide is a predictable event.
- In the same way that death due to myocardial infarction is not a predictable event on the individual patient level or with a pinpoint on the timing or severity of an event, but cardiologists and primary care understand that aggressively addressing risk factors of cardiovascular disease can save lives. The same principles are true for suicide.
- Lack of predictability does not mean a health outcome is not preventable by using upstream, population health approaches, in addition to individualized clinical interventions and family/peer strategies.

C

Scope of the Problem and Trends

● Global Perspective

We are living in a time of pressing urgency: suicide is a global problem, a leading cause of death with a staggering loss of 800,000 lives each year. Suicide cuts across high- and low-income countries, with lower- and middle-income countries bearing the largest burden (80% of all suicides), but with suicide continuing to be a serious problem in high-income countries as well. In recent years, the World Health Organization (WHO) and the United Nations (UN) have adopted action plans focused on mental health and suicide prevention, and have set goals to reduce the rate of suicide by 10% by 2020 in the case of WHO and by 33% by 2030 in the case of the UN Sustainable Development Goals.³ Presently, 40 countries have enacted national strategies to prevent suicide,⁴ several of which are proving effective, with reductions in suicide rates in many countries such as China, Denmark, England, Switzerland, the Philippines, and South Korea.⁵ And although the absolute number of suicides globally continues to increase, a recent study accounting for population growth found the global rate of suicide has dropped by 32.7% over the past three decades.⁵



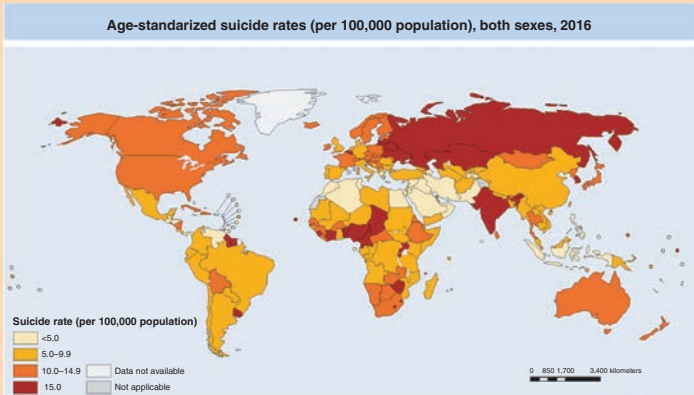
Key Point

Suicide is a global health problem and a national priority for many countries.



Figure 1.4 WHO global map of suicide rates by region of the world

National suicide rates vary widely throughout the world. Illustrated by color coding with darker colors showing the countries with higher suicide rates, this map shows the variability across nations. It is important to note that some countries' suicide data is more accurate than others related to the complexity of vital statistics and death investigation systems as well as the variability of the approach and progress between countries. See Figure 1.7 for more information about countries' quality of vital statistics and suicide data.



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
 Map Production: Information Evidence and Research (IER)
 World Health Organization
 World Health Organization
 © WHO 2018. All rights reserved.



Figure 1.5 Suicide rates in several nations (1990–2017)

Note the world suicide rate shown by the green line. While the absolute number of suicides around the globe has been on the rise, the rate has been decreasing as the world's population grows. Several countries' suicide rates have remained stable (e.g., Greece), several are decreasing (e.g., UK, Germany), and the USA is one of few whose national suicide rate is steadily increasing since 1999.

Suicide death rates

Age-standardized death rates from suicide, measured as the number of deaths per 100,000 individuals. Age-standardization assumes a constant population age and structure to allow for comparisons between countries and with time without the effects of a changing age distribution within a population (e.g., aging).

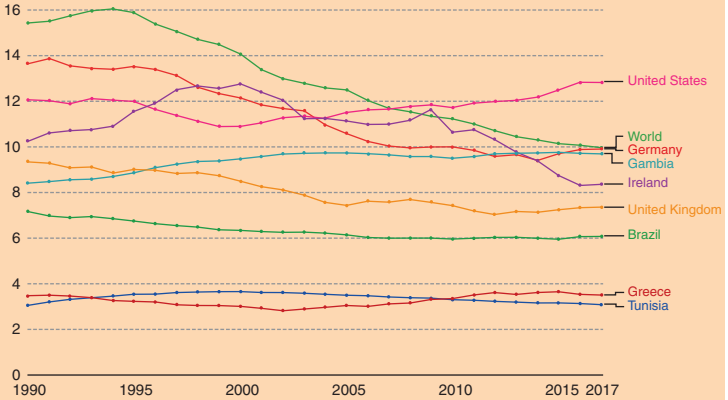




Figure 1.6 Countries with particularly high national suicide rates (1990–2017)

Note the scale of the y-axis which is multiple-fold that of the previous graph. Lithuania, Guyana, and South Korea have some of the highest known suicide rates around the globe. South Korea has seen a significant decrease in their national rate over the past decade of 15% after the leading pesticide was banned by law in 2011.

Suicide death rates

Suicide death rates are measured as the number of deaths per 100,000 individuals in a given population.

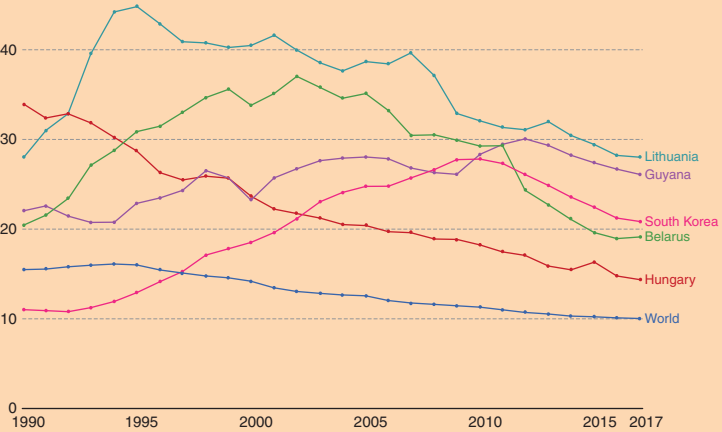
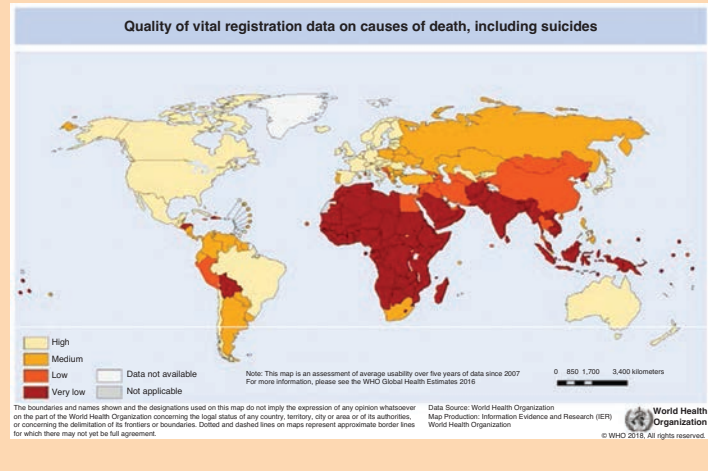




Figure 1.7 WHO global map showing quality of vital registration data

The quality and reliability of suicide data is highly variable across nations. According to WHO, of its 172 Member States, which publish suicide estimates, only 80 have reasonably good quality vital registration data systems to collect suicide data.



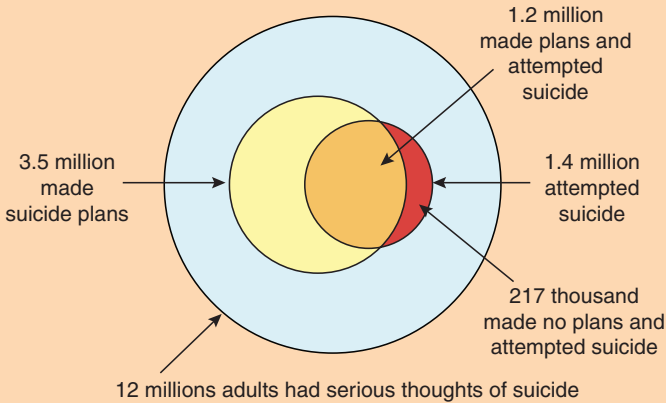
One caveat regarding international suicide data is that data is deficient for two reasons: not all countries have reliable systems in place to collect quality vital registration data including suicide data; additionally stigma and complexities of medical and legal systems involved in data collection make the reported numbers variable in their accuracy as well.⁶ Without solid data tracked as close to real time as possible, it is challenging to measure the success of suicide prevention and intervention strategies. This highlights the importance of surveillance as part of any effective suicide prevention plan, and applies to nations, but certainly applies to health systems as well. See Chapter 10 for steps health systems can take to prevent suicide, including developing ways to track attempts and suicide deaths.

D Public Health Model of Suicide Includes the Full Continuum of Experience from Suicidal Ideation to Attempts to Death and Loss



Figure 1.8 The scope of the public health crisis of suicide includes ideation, attempts, and suicide loss.

The approach to suicide prevention must include consideration of the millions of individuals who experience upstream distress including suicidal thoughts and behaviors, as well as those bereaved by suicide. In the USA estimates by the Substance Abuse and Mental Health Services Administration (SAMHSA) are that 1.4 million American adults attempt suicide each year and approximately 12 million seriously consider suicide. A total of 51% of adults know someone who died by suicide during their lifetime.⁷ A strong public health approach considers the needs of all of these experiences. National Institute of Mental Health (NIMH), www.nimh.nih.gov/health/statistics/suicide.shtml#part_155013



The public health approach to addressing suicide includes the entire continuum from mental health conditions, suicidal struggles and attempts, disability and morbidity related to suicide risk, and of course suicide’s mortality toll.

● Suicide Loss Survivors

Additionally, suicide loss survivors comprise 30–50% of most populations with numerous individuals impacted by each suicide death.⁸ The experiences of loss survivors including clinical sequelae and methods for healing through grief are important areas of research and represent opportunities for suicide postvention and prevention efforts, since 51% of a representative sample of American adults

have had one or more exposures to suicide and suicide loss can increase suicide risk of those left behind.^{7,9} Research is finding a host of negative health sequelae related to Complicated Grief (CG) and even more general suicide bereavement.^{10,11} Health providers can become educated about the course of suicide bereavement as another critical way to provide the most effective care possible and to contribute to advances in suicide prevention. In the suicide prevention field, an undeniable truism is: “postvention is prevention,” referring to the net effect of decreasing a loss survivor’s own suicide risk by facilitating their healing after suicide loss, in many instances by helping to eventually empower them to become part of suicide prevention and postvention efforts. Please see Chapter 17 for more clinical tips related to the care of suicide loss survivors.



Key Point Lived Experience Perspectives

Suicide loss survivors or people bereaved by suicide loss are an important population. Not only does the loss experience represent an important part of the scope of the problem of suicide, but people bereaved by suicide can be at increased risk for suicide. Additionally, in the suicide prevention movement across several nations, suicide loss survivors were early advocates for research funding, suicide prevention education, and stigma reduction and continue to be powerful voices for change.

● Suicide: Focus on the USA

A 2018 report by the Centers for Disease Control (CDC) in the USA reveals the extent of the growing public health suicide crisis.¹² The US national rate of suicide had been decreasing from 1986 to 1999, but then unfortunately began to rise, steadily increasing each year since 1999. Increasing 1% annually from 1999 through 2006, suicides in the USA are most recently increasing by 1.5–3.7% annually. In many other western nations, suicide rates are generally decreasing, whereas in the USA the rate has been on the rise.¹³ In December 2020, the CDC released 2019 national suicide data finding the US suicide rate had decreased by 2.1% year over year, the first decrease in 20 years.

CDC suicide surveillance data in the USA indicates that suicide rates are increasing for both males and females and for all age groups 10–74. It is the second leading cause of death for 15–34 year-olds, surpassed only by unintentional injuries (i.e., accidents).

For females, the increase in suicide rates was greatest and most significant in number for those between the ages of 45 and 64, and for males, also between the

ages of 45 and 64. Overall, the rate for males is three to four times the rate of females (20.7 versus 5.8).

Over the past two decades, the rate of suicide in the USA has increased by 35% and is at its highest level in 30 years. Youth suicide rates in the USA are at a high point over a 40-year period, with a 2019 CDC report revealing a concerning trend among younger children and adolescents age 10–14, whose suicide rate had declined from 1.5 to 0.9 from 2000 to 2007, but has tripled from 2007 to 2017 to 2.5 per 100,000.¹⁴

In the USA, the most frequent suicide method used by males is firearms (55.4%), while women use poisoning most frequently (34.1%) (See Figures 14.1–14.2 and 14.3–14.4 for breakdown of suicide methods for males and females as well as for veteran males and females.) Globally, a WHO suicide mortality report finds that methods of suicide vary between countries – a difference driven primarily by availability of means.⁶

● Suicide: Focus on Asia

Of the nearly 1 million suicides globally each year, the Asian continent accounts for an estimated 60% with China, Japan, and India accounting for 40% of the world's suicides.¹⁵ Because of religious and legal sanctions against suicide, underreporting of suicide most certainly occurs in many countries to varying degrees. Among the Asian countries where whole population suicide rates are available, South Korea has among the highest rates at 31.0/100,000 per year. Methods for suicide include the most available means, so in China, Sri Lanka, and Pakistan, where agricultural work is common, pesticides are the most common means of suicide, whereas in urban areas like Hong Kong and Singapore, jumping is the most common method. Notable suicide methods in Asia also include charcoal burning and self-immolation, which are exceedingly rare in western nations. Overall the ratio of male to female suicide rates is lower in Asian countries, closer to 2:1 (although widening over the past decade in areas like China, Taiwan, and Hong Kong) versus the 3–4:1 male to female ratio in western regions of the world. Compared with western females, Asian females tend to use more lethal means (such as pesticide poisoning, a common method among younger Chinese females), although this is changing with urbanization and suicide prevention efforts that include means restriction, regulatory changes, and education efforts focused on pesticides, targeted at both community members and pesticide vendors in Asia.

● Federal Investments in Research and Interventions Are Made for Other Threats to Life and Limb

Imagine the number of deaths related to a particular toxic exposure had grown dramatically in the past 20 years. Imagine that 48,000 Americans die from this toxin every year, making it the tenth leading cause of death in the USA, impacting all age groups. What would be the response?

Given the \$1 billion investment the US Congress made in response to the Zika virus outbreak in 2016 to ensure that not one American would die, the several billion dollar investment to combat the opioid crisis, and the similarly appropriately large investment to address the Covid pandemic, one can imagine what the national response to a toxin killing tens of thousands of Americans might be. In fact, those approximately 50,000 deaths in the US, and more than 800,000 deaths globally, are caused by what is indeed the tenth leading and generally preventable cause of US mortality: suicide. Among the top ten leading causes of death pre-pandemic, suicide is one of three that continue to be on the rise. Unfortunately, lulled by the longevity of the problem, the shroud of stigma that has kept it in the shadows, most nations have not launched a response commensurate with suicide's morbidity and mortality toll, and what has clearly become a national and global crisis.



KEY TAKEAWAYS

- a. As the science elucidating suicide risk and prevention continues to explode, answers are forthcoming, shedding light on suicide. It takes time for answers from science to translate into everyday knowledge about actions to take. Thus, we are currently living in a time of cultural transition when it comes to suicide prevention.
- b. Find out if your country has a national suicide prevention plan and the ways that you might become more involved or serve to advance any strategies.
- c. New scientific research on the clinical and community based strategies that can prevent suicide offer hope for bending the curve and reducing suicide rates.
- d. Specifically research shows that 1) suicide is a generally preventable cause of death, and 2) health systems and providers have a vital role to play in suicide prevention.¹⁶
- e. Suicide prevention and suicide prediction are concepts that tend to be conflated. Various complex health outcomes are considered preventable, without being predictable on the individual level.
- f. While the drivers of suicide are complex and risk factors multiple, cultural norms in many regions of the world are changing related to mental health and suicide, with people beginning to open up and speak out about mental health, reducing the stigma around mental health, help seeking, and suicide prevention.
- g. Suicide prevention can be viewed as a movement in which suicide loss survivors, people with lived experiences of attempt or suicidal struggle, and others with a personal and/or professional interest in suicide prevention are banding together, advocating for more investment in science and policy change in healthcare and beyond.
- h. Surveillance of suicide attempts and deaths must improve to better measure the impact of suicide prevention efforts.
- i. Suicide prevention at a broad scale includes policy changes, public health initiatives like school-based programs and universal education, health system delivery changes, and new suicide prevention focused treatments delivered in clinical settings.
- j. Federal investments in suicide prevention research, community programs and clinical treatments can reduce suicide mortality.



References

- 1 **American Foundation for Suicide Prevention (n.d.)** In Executive Summary: A Survey about Mental Health and Suicide in the United States. Retrieved from afsp.org/story/covid-19-reinforces-a-renewed-call-to-make-suicide-prevention-a-national-priority/.
- 2 **American Foundation for Suicide Prevention (2018)** National Survey Shows Majority of Americans Would Take Action to Prevent Suicide. afsp.org/harrispoll/.
- 3 **World Health Organization (2013)** *Mental Health Action Plan 2013–2020*. Geneva: World Health Organization.
- 4 **World Health Organization MiNDbank** www.mindbank.info/, accessed April 24, 2019. MiNDbank is an online platform for resources and national/regional level policies, strategies, laws and service standards for mental health and related areas.
- 5 **Naghavi, M. (2019)** (on behalf of the Global Burden of Disease Self-Harm Collaborators.) Global, regional, and national burden of suicide mortality 1990 to 2016: Systematic analysis for the Global Burden of Disease Study 2016. *BMJ*; 364: I94.
- 6 **World Health Organization (2014)** Preventing Suicide: A Global Imperative. Retrieved from apps.who.int/iris/bitstream/handle/10665/131056/9789241564779_eng.pdf;jsessionid=BD2F88630987953D20BB6DC50241BE19?sequence=1.
- 7 **Cerel, J., Brown, M., Maple, M., et al. (2018)** How Many People Are Exposed to Suicide? Not Six. *Suicide Life Threat Behav*, doi:10.1111/sltb.12450
- 8 **Feigelman, W., Cerel, J., McIntosh, J., Brent, D., & Gutin, N. (2018)** Suicide exposures and bereavement among American adults: Evidence from the 2016 General Social Survey. *J Affect Disord*, 227: 1–6. doi:10.1016/j.jad.2017.09.056
- 9 **Jordan, J. R. (2017)** Postvention is prevention: The case for suicide postvention, *Death Studies*, 41(10): 614–21, doi: 10.1080/07481187.2017.1335544
- 10 **Pitman, A., Osborn, D., King, M., & Erlangsen, A. (2014)** Effects of suicide bereavement on mental health and suicide risk. *Lancet Psychiatry*, 1(1): 86–94.
- 11 **Cerel, J. & Rebecca, L. (2018)** It's not who you know, it's how you think you know them: suicide exposure and suicide bereavement. *Psychoanal Study Child*, 71(1): 76–96, doi: 10.1080/00797308.2017.1415066
- 12 **Centers for Disease Control and Prevention (2018, June 7)** In "Suicide Rising Across the US". Retrieved from www.cdc.gov/vitalsigns/suicide/index.html.
- 13 **Fond, G., Llorca, P. M., Boucekine, M., et al. (2016)** Disparities in suicide mortality trends between United States of America and 25 European countries: Retrospective analysis of WHO mortality database. *Scientific Reports*, 6: 20256. doi:10.1038/srep20256
- 14 **Curtin, S. C., & Heron, M. (2019)** Death rates due to suicide and homicide among persons aged 10–24: United States, 2000–2017. NCHS Data Brief, no 352. Hyattsville, MD: National Center for Health Statistics.
- 15 **Wu, K. C., Chen, Y. Y. & Yip, P. S. F. (2012)** Suicide methods in Asia: Implications in suicide prevention. *Int. J. Environ. Res. Public Health*, 9: 1135–58.
- 16 **Mann J.J., Michel C.A., Auerbach R.P. (2021)** Improving suicide prevention through evidence-based strategies: A systematic review. *Am J Psychiatry*, doi:10.1176/appi.ajp.2020.20060864