Reflections on Expert Recommendations for U.S. Research Priorities in Suicide Prevention

Morton M. Silverman, MD, Jane E. Pirkis, PhD, Jane L. Pearson, PhD, Joel T. Sherrill, PhD

Introduction

The articles in this special supplement represent the collective thinking of suicide prevention experts from across the U.S. and several other countries about where research efforts might best be invested to address the vexing public health problem of suicide. The authors of these articles—and other suicide prevention experts—came together under the aegis of the National Action Alliance for Suicide Prevention’s (Action Alliance) Research Prioritization Task Force (RPTF), an initiative that was resourced by the National Institute of Mental Health (NIMH) and the Substance Abuse and Mental Health Services Administration (SAMHSA).1

As editors, we have had the pleasure of seeing this supplement come to fruition and the early manuscripts develop into articles that we are confident will have a major influence not only on the suicide prevention research agenda but also on reducing suicide. We brought different perspectives to our editorial roles. Two of us (Morton Silverman and Jane Pirkis) are career researchers with specialist expertise in various aspects of suicide prevention and were not directly involved in the RPTF process but were brought on board as independent editors. Two of us (Jane Pearson and Joel Sherrill) are members of the NIMH staff who oversee relevant portfolios of science and were involved in the RPTF initiative from the outset.

The articles in this supplement represent a subset of the presentations made by suicide prevention experts to inform the RPTF agenda. As editors, we served as “curators” and collated a representative set of articles that address the RPTF’s Aspirational Goals (AGs) for suicide prevention.2 The articles explicitly consider how these AGs might be achieved by reviewing existing research evidence, examining challenges to progress, and proposing future directions.

Scope of the RPTF Process and the Articles in This Supplement

Suicide prevention researchers are beset with methodological and ethical problems when they design studies. For example, universal or community-wide interventions are not always easily amenable to evaluation by RCTs; it can be difficult to select appropriate control conditions for trials testing interventions for at-risk or actively suicidal individuals, and sample sizes required to power studies become prohibitively large given the low base rate of suicide events. Such challenges have historically limited our understanding of what works and what doesn’t work in suicide prevention.

The articles in this supplement grapple with these issues and make intelligent suggestions about how to overcome them. It should be noted that the articles represent abridged summaries of the research overviews that topic experts prepared to inform the research prioritization process. By design, the articles provide a snapshot of where the field is with regard to each AG, and the directions necessary to progress knowledge in the area. In each article, the authors cite relevant references that provide additional detail and serve as supplementary resources for readers.

The articles in this supplement summarize a unique undertaking in terms of the scope of the research prioritization activities and the RPTF process. The scope is remarkable, given the range of science that is considered (from basic science regarding the neurobiological underpinnings of suicide through science related to the dissemination/implementation of prevention strategies).

The RPTF approach was to simultaneously consider priorities and strategies within each AG, both short-term and longer-term. In this manner, researchers or funders might use the information to help identify overall priorities as well as priorities and promising directions within a given area of science, depending on their particular interests. The process is also unprecedented in suicide research in terms of the multistage, multigroup approach to collecting input, and in terms of the up-front attention to systematically using available data (e.g., burden estimates and simulations regarding the potential...
impact of intervening in particular contexts) to guide the prioritization of research.

Other countries have engaged in research prioritization exercises, but, to our knowledge, none of those have occurred on this scale. In Australia in the mid-2000s, for example, Federal Government funding was provided for a project that examined existing priorities (through reviews of published literature and funded grants) and considered future priorities (through a questionnaire of stakeholders’ views and a series of focus groups). Moreover, existing priorities were re-examined last year. This work showed that the bulk of the emphasis under Australia’s National Suicide Prevention Strategy had been, and continues to be, given to epidemiologic studies at the expense of intervention studies.

This work in Australia was useful for identifying priorities, but this effort did not have the same machinery behind it as the RPTF. The Australian process relied on a small project team conducting what was effectively a series of small substudies, and sought the views of other researchers (and other relevant stakeholders) in a systematic but somewhat limited way. The process of drawing together topic experts from across the spectrum of suicide prevention research, and asking them to consider and write about the way in which research could be improved, clearly identifies the work of the RPTF as groundbreaking.

Prioritizing Across Interrelated but Diverse Areas of Science

The individual papers reflect concise reviews of the science related to specific AGs; as such, the papers stand alone. Table 1 lists the RPTF AGs and the corresponding papers in this special supplement. Nevertheless, there is substantial interdependence among the AGs and the corresponding papers, and some goals are inexorably linked.

For example, the science of developing and testing interventions to address individuals who have attempted suicide will share much in common in terms of content and approach with that related to interventions targeting other at-risk groups (e.g., individuals at risk due to depression or other psychiatric/substance use disorders). Likewise, although psychotherapeutic interventions and pharmacologic interventions are addressed in separate reviews, as Griffiths et al. note, it seems likely that optimizing prevention and treatment will ultimately require deploying evidence-based approaches in combination or sequentially.

Many if not most of the goals are not only interdependent, but also serially dependent in terms of their role in achieving prevention aims. For example, the development of effective screening instruments and practices and actionable risk stratification algorithms depends on earlier stages of science that identify readily assessed risk factors that are highly correlated with the likelihood of attempting suicide. Similarly, the development and testing of effective interventions depends on the identification of modifiable risk and etiologic or maintaining factors that represent potential intervention targets, including neurobiological targets.

Furthermore, the ultimate utility of screening and intervention approaches will depend not only on the development of effective preventive and therapeutic strategies but also on the development of effective strategies for training providers to ensure research-informed approaches are disseminated and implemented with fidelity. Finally, the degree to which screening, identification, and intervention ultimately lead to a reduction in the rate of suicide deaths and attempts will depend on effective systems-level approaches to ensure the availability of and access to affordable, effective services.

The interdependence of these AGs poses challenges for prioritizing across the full range of science. Is it necessary to first achieve a firm understanding of the causes of suicidal behavior before undertaking research on potential prevention strategies, or is it more important to prioritize science that has the potential for the most immediate impact on reducing suicide attempts and deaths (e.g., development and testing of effective preventive interventions and strategies)? Should efforts focus on broad-based prevention and efforts to increase help-seeking or on more intensive, targeted preventive or therapeutic interventions with high-risk groups (e.g., attempters, the elderly)? If multilevel, layered interventions of varying intensities afford the best protection, as suggested by Niederkrotenthaler and colleagues, what is the optimal combination of interventions?

The approach involved providing experts with several information inputs as they considered optimal research pathways. These inputs included examples of stakeholders’ ideas as to why a particular AG would help reduce suicide attempts and deaths (including summaries of stakeholder feedback and verbatim suggestions); data regarding what was known, or not known, about the scope (e.g., epidemiology or burden); and summaries of the current evidence and state of the science relevant to their AG topic.

This process often pushed experts to consider research gaps (and AGs) outside their “comfort zones,” particularly in areas that would affect their estimates of the public health impact of their research focus. For example,
experts who were asked about the benefits of providing effective psychotherapy to prevent reattempts had to rely on estimates from longitudinal data of reattempt rates, which highlighted the need for better data regarding the rate of reattempts in the U.S. Therefore, experts in psychotherapy might identify information on the trajectories of suicide attempters over time as a priority, in addition to intervention research needs.

A science has developed that helps identify such research gaps: value of information (VOI) analysis is a

<table>
<thead>
<tr>
<th>Aspirational goal</th>
<th>Aspirational goal topic</th>
<th>Corresponding supplement manuscripts</th>
</tr>
</thead>
</table>
| 1                 | Know what leads to, or protects against, suicidal behavior, and learn how to change those things to prevent suicide. | • Epigenetics and suicidal behavior research pathways<sup>6</sup>  
• Neurobiological risk factors for suicide: insights from brain imaging<sup>7</sup> |
| 2                 | Determine the degree of suicide risk (e.g., imminent, near-term, long-term) among individuals in diverse populations and in diverse settings through feasible and effective screening and assessment approaches. | • Suicide risk screening and assessment: designing instruments with dissemination in mind<sup>8</sup>  
• Screening youth for suicide risk in medical settings: time to ask questions<sup>9</sup> |
| 3                 | Find ways to assess who is at risk for attempting suicide in the immediate future. | • Improving the short-term prediction of suicidal behavior<sup>10</sup>  
• Prognostic models to detect and monitor the near-term risk of suicide: state of the science<sup>11</sup> |
| 4                 | Ensure that people who are thinking about suicide but have not yet attempted receive interventions to prevent suicidal behavior. | • Evidence-based psychotherapies for suicide prevention: future directions<sup>12</sup>  
• Alcohol and suicidal behavior: what is known and what can be done<sup>13</sup> |
| 5                 | Find new biological treatments and better ways to use existing treatments to prevent suicidal behavior. | • Existing and novel biologic therapeutics in suicide prevention<sup>14</sup> |
| 6                 | Ensure that people who have attempted suicide can get effective interventions to prevent further attempts. | • Evidence-based follow-up care for suicide prevention: where do we go from here?<sup>15</sup>  
• Alcohol and suicidal behavior: what is known and what can be done<sup>13</sup> |
| 7                 | Ensure that healthcare providers and others in the community are well trained in how to find and treat those at risk. | • Advancing training to identify, intervene, and follow up with individuals at risk for suicide through research<sup>16</sup> |
| 8                 | Ensure that people at risk for suicidal behavior can access affordable care that works, no matter where they are. | • National pathways for suicide prevention and health services research<sup>17</sup>  
• Prioritizing research to reduce youth suicide and suicidal behavior<sup>18</sup> |
| 9                 | Ensure that people getting care for suicidal thoughts and behaviors are followed throughout their treatment so they do not fall through the cracks. | • National pathways for suicide prevention and health services research<sup>17</sup>  
• Prioritizing research to reduce youth suicide and suicidal behavior<sup>18</sup> |
| 10                | Increase help-seeking and referrals for at-risk individuals by decreasing stigma. | • Increasing help-seeking and referrals for individuals at risk for suicide by decreasing stigma: the role of mass media<sup>19</sup> |
| 11                | Prevent the emergence of suicidal behavior by developing and delivering the most effective prevention programs to build resilience and reduce risk in broad-based populations. | • Suicide in later life: challenges and priorities for prevention<sup>20</sup>  
• Developmental approach to prevent adolescent suicides: Research pathways to efficacious interventions<sup>21</sup>  
• Promising strategies for advancement in knowledge of suicide risk factors and suicide prevention<sup>22</sup> |
| 12                | Reduce access to lethal means that people use to attempt suicide. | • Reducing a suicidal persons’ access to lethal means of suicide: a research agenda<sup>23</sup> |
strategy to inform priorities that can improve the effectiveness of spending on health research. \textsuperscript{24} VOI provides an analytic approach to establish the value of acquiring additional information to inform a decision about how to approach a clinical problem. In the context of the RPTF, an informal VOI-like approach helped the experts identify gaps in knowledge and focus on essential information needed in the U.S. to refine suicide research prioritization that would contribute to the ultimate goal of reducing the number of suicide attempts and deaths.

**Future Directions to Advance Suicide Prevention Science**

Suicide has been a challenging and perplexing behavior to study because suicidal behaviors are multidetermined and multifactorial, thus defying simple models of etiology and pathogenesis. As with the aforementioned Australian review and research prioritization, the RPTF process and literature reviews highlight the fact that much more is known about the general epidemiology of suicide and potential risk factors.

Although the literature is replete with studies that identify various correlates, much less is known about mutable risk factors that carry substantial variance and might represent actionable intervention targets, and far less is known about effective strategies for preventing attempts and deaths. Despite the fact that, from a distance, the epidemiologic data suggest that we have made very little headway in significantly reducing the national suicide rate over the last 50 years, the research findings have been accumulating. The building blocks have been put in place: The critical factors have been identified and methodologies to study the problems have been evolving.

As part of the RPTF process, the NIH issued a “request for information” (RFI) regarding key methodological roadblocks and potential new paradigms for suicide prevention science (Guide Notice: NOT-MH-12-017; see Action Alliance’s RPTF agenda, pp. 66–70, for a description of the RFI process and responses). Across the papers, many authors explicitly or implicitly suggest similar themes regarding challenges and barriers that parallel the responses to the RFI.

The authors also noted various strategies that might help overcome barriers and facilitate progress, such as enhanced research infrastructure, including the development of a national cadre of well-trained researchers and clinicians with specialized expertise, to increase research capacity in the field; more timely, integrated regional and national surveillance data systems, to allow for more accurate burden estimates and to track progress at reducing attempts and deaths; a uniform classification system to describe suicidal phenomena paired with standardized data collection,\textsuperscript{25} integration, and sharing (and application of emerging strategies for leveraging “big data”) to promote data sharing and meta-analyses; and utilization of new methodologies and analytic approaches to facilitate study of low base rate events.

Within and across the AGs, it is also evident that translational science and interdisciplinary research collaboration (“team science”) will be critical for advancing science and ultimately identifying effective prevention strategies. We believe that the time is now to stimulate and support creative, cross-cutting research on suicide. A careful reading of these research summaries will confirm that we are on the brink of breakthroughs in many areas and lines of research.

One goal in publishing this supplement is to highlight opportunities for researchers in the area of suicide and for other talented scientists who have not yet applied their skills and techniques to the study of suicidal behaviors. As noted above, the papers in this series highlight the fact that progress will require interdisciplinary, collaborative science; likewise, coordinated, collaborative approaches to supporting research, involving both public and private partners, can effectively advance the prevention of suicide through cross-cutting and interactive research. The papers in this supplement, like the RPTF agenda itself, are intended as inspirational resources that highlight the challenges and rewards of engaging in suicide prevention research, and suggest future research directions that have the potential to advance the overall goal of reducing attempts and deaths.

---

**References**


www.ajpmonline.org