



## From Bench to Bedside in the Prevention of Suicide: A Never-Ending Back and Forth Journey

Maurizio Pompili

Department of Neurosciences, Suicide Prevention Center, Sapienza University of Rome, Italy, and  
McLean Hospital – Harvard Medical School, Belmont, MA, USA

The beginning of the 20th century marked a very important time for suicide research and for suicide prevention (De Leo, in press). First efforts were made to provide help to suicidal individuals (by the Salvation Army and other groups). In the mid-1950s, a new discipline called suicidology was born (something far different from the mere study of suicide) thanks to the pioneering work of Shneidman, Farberow, and Litman. Since then, hundreds of suicide prevention centers were created, and research in suicide prevention began producing brilliant results to help us better understand this enigmatic phenomenon. In 1997, it was reported that, “Science means research. Current research in suicidology, however, needs development” (Leenaars et al., 1997). Since then we have witnessed major improvements, and the findings of recent years are indeed major discoveries.

However, to improve human health, scientific discoveries must be translated into practical applications. Such discoveries, especially with reference to medicine and biology, typically begin at “the bench” with basic research in which scientists study “disease” at a molecular or cellular level and then progress to the clinical level – the patient’s “bedside.” But is the same true for suicide?

As a psychiatrist, my model of dealing with suicidal patients uses two distinct dimensions that often overlap, one comprising psychiatric disorders and the other referring to suicidality. When substantial overlap exists, there is a major risk of suicide while the patient is being “attacked” in two ways. However, suicide can occur with no psychiatric disorder at all, for example, when profound distress and psychological pain become unbearable or when suicide is seen as the perfect solution. In suicidal individuals, psychological pain affects the very core of their human condition and threatens life, which is deemed unacceptable in its pre-

sent condition. A psychiatric disorder alone may not be sufficient to precipitate suicide; rather, there must also be the suicidality dimension that carries some variant of negative emotions (Pompili, in press). This should lead to the development of new models that allow the integration of research findings into clinical practice (Mann, Waternaux, Haas, & Malone, 1999).

One main issue in suicide prevention and in suicide research in general is the lack of a “royal route” that integrates the entire knowledge in the field. The prolific production of scientific papers, many of them of high standard, provides information that is only rarely integrated into clinical practice. I sometimes imagine current suicidology as a moon landscape with someone leaping about on it for the first time, leaving first-ever footprints in the virgin dust. We can conquer a new enigmatic space and place a flag on it – but what advantages does that provide us with? No one can actually say what changes landing on the moon has provided to our daily life. In truth, possibly many more in the future, but very few for the time being.

The association between suicide and psychiatric disorders has been documented in many studies, though it is not always present (Bertolote, Fleischmann, De Leo, & Waserman, 2004; De Leo, 2002, 2004). The conclusion derived from psychological autopsy studies, namely, that the vast majority of individuals who die by suicide had suffered from a mental disorder at the time of their death, has now been shown to suffer from various biases (Pouliot & De Leo, 2006). Scholars have come to believe that alternative approaches must be found since the vast majority of depressed, schizophrenic, alcoholic, or organically psychotic patients do not commit or even attempt suicide (Leenaars, 2004; Lester, 1987, 1989). Much suicide research focuses on psychiatric patients but ignores the cry for help that im-

plies loss, humiliation, failure, and shame (Shneidman, in press).

It is clear that some biological markers can be useful in assessing suicide risk (Mann, 2003; Oquendo et al., 2003; Pompili, Innamorati et al., 2008; Pompili, Serafini et al., in press). There are candidate genes related at least casually to suicide. But is it clear that these relate to suicide *per se* and not merely to some psychiatric disorder? And if they are associated with suicide, do they help us to save lives? If so, how?

We have only partial explanations for some phenomena. For example, why do antiepileptic drugs increase the risk of suicide in epileptic patients but not in psychiatric patients who generally take such drugs as mood stabilizers (Pompili, Tatarelli, Girardi, Tondo, & Baldessarini, in press)? Why are antidepressants of little use when it comes to suicide risk (Baldessarini, Tondo et al., 2006)? Do lithium (Baldessarini, Pompili, & Tondo, 2006) and clozapine (Melzer et al., 2003) have real antisuicidal properties?

To illustrate these problems, consider the fact that there is a significant decrease in the rate of suicide attempts in patients prescribed lithium compared to the rate prior to their taking lithium. This is the case, not only in those patients with excellent treatment outcome, but also in patients with moderate or even poor response toward lithium prophylaxis. This suggests that there is an impact on the suicidal dimension independent of the impact on the psychiatric symptoms (Ahrens & Muller-Oerlinghausen, 2001; Pompili, in press). Very recently, the FDA issued a warning about the increase of suicide risk among persons being treated with antiepileptic drugs – though this increase is found only in neurological patients and not in psychiatric patients who are regularly treated with these drugs as mood stabilizers (Pompili, Tatarelli et al., in press).

A similar problem exists with psychometric evaluations, often found in research protocols. We know how to classify patients as suicidal or not, and we know the degree of risk involved. In this way we are able to write good research papers that may also get published in international peer-reviewed journals. But do psychometric evaluations actually save lives?

Suicidology differs from other behavioral sciences by involving not just the study of suicide but also its prevention. Consequently, a major task of suicidology should be an integration of the various contributions from suicide research into clinical interventions in order to facilitate the prevention of suicide (Tatarelli, Pompili, & Lester, 2005).

A recent paper (Cardone et al., 2009) reported that suicide was the second most frequent sentinel event (an adverse event of particular seriousness that demands an investigation) in Italian hospital units, and the site most often noted was in a nonpsychiatric department. We are faced with the fact that health professionals are not familiar with suicide prevention even if they encounter suicidal individuals in the course of their work. On average, in fact, 45% of suicide victims had contact with primary care providers

within a month of their suicide (Luoma, Martin, & Pearson, 2002).

During my time at medical school, suicide was never even mentioned (apart from during the psychiatry course). In most places, suicide prevention is not part of residency training in psychiatry at all. Our understanding of suicide risk should involve a journey back and forth from our own clinical experience and the results of research (Pompili & Tatarelli, in press).

The current emphasis on psychiatric disorders in the published research needs to be balanced by a better analysis of socioenvironmental contributors to suicide, particularly by developing and adopting standardized instruments and structured interviews to permit the appropriate weighting of these variables. Efforts in this direction should promote a truly ecological approach to understanding suicide and assist in the development of better preventive strategies (Pouliot & De Leo, 2006)

Suicidal patients tell us of their misery and unbearable psychological pain (Pompili, 2008; Pompili, Lester, Leenaars, Tatarelli, & Girardi, 2008; Shneidman, in press), a feature often traceable in survivors as well (Pompili, Lester, De Pisa et al., 2008). Morselli called this moral pain – the pain of the negative emotions (Morselli, 1881). Although genetics, biology, and neuroscience play major roles in making a given individual vulnerable to suicide, I would like to stress the need to reconcile this with the fact that suicide might be better understood as a phenomenon centered in the individual. In other words, the motives for suicide can be found in the individual viewed as a unique human being whose personality contains the real reasons for wanting to die. Suicide research is not enough; we must work seated at the suicidal individuals' bedside, trying our very best to feel what that persons feels and how these feelings lead the wish to die.

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#### About the author

Maurizio Pompili, MD, PhD, is Professor of Suicidology at the II Medical School of Sapienza University of Rome, Italy. He is the coordinator of the Suicide Prevention Center at Sant' Andrea Hospital in Rome. He is also part of the McLean Hospital at the Harvard Medical School, USA. He is the recipient of the American Association of Suicidology's 2008 Shneidman Award.

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#### Maurizio Pompili

Department of Neurosciences  
Mental Health and Sensory Functions  
Suicide Prevention Center  
Sant' Andrea Hospital  
Sapienza University of Rome  
1035 Via di Grottarossa  
I-00189 Roma  
Italy  
Tel. +39 06 33775675  
Fax: +39 06 33775342  
E-mail [maurizio.pompili@uniroma1.it](mailto:maurizio.pompili@uniroma1.it) or  
[mpompili@mclean.harvard.edu](mailto:mpompili@mclean.harvard.edu)