

Warning Signs for Suicide: Theory, Research, and Clinical Applications

M. DAVID RUDD, PhD, ABPP, ALAN L. BERMAN, PhD, ABPP,
THOMAS E. JOINER, JR., PhD, MATTHEW K. NOCK, PhD, MORTON M. SILVERMAN, MD,
MICHAEL MANDRUSIAK, MSCP, KIMBERLY VAN ORDEN, MS, AND TRACY WITTE, BS

The current article addresses the issue of warning signs for suicide, attempting to differentiate the construct from risk factors. In accordance with the characteristic features discussed, a consensus set of warning signs identified by the American Association of Suicidology working group are presented, along with a discussion of relevant clinical and research applications.

CONCEPTUAL ISSUES: DIFFERENTIATING WARNING SIGNS AND RISK FACTORS

Warning signs have been widely utilized by the general community as a mechanism to prevent a broad spectrum of health problems and related disorders. For example, standardized warning signs for heart attack, stroke, and diabetes are widespread and commonly known (Carter, 2004; Lee, 2004).

Closer to the field of mental health, the American Psychological Association teamed up with MTV to produce warning signs for youth violence (Peterson & Newman, 2000). The basic rationale behind warning signs is that improved public education and awareness promotes early detection and intervention, with the net result being improved health outcomes in the targeted domain (Gould, Greenberg, Velting, & Shaffer, 2003). In cases of suicide risk, the end goal would be lives saved.

The standardization and dissemination of warning signs for suicide have considerable appeal from both public health and clinical perspectives and is an issue that has received national attention. The President's New Freedom Commission on Mental Health (TPNF CMH, 2003) and the Children's Mental Health Screening and Prevention Act (CMHSPA, 2003) both call for increased screening for suicidality. Warning signs for suicide are routinely distributed to teachers, mental health professionals, primary care providers, and adolescents as part of suicide awareness curricula and programs administered in school districts around the nation (e.g. AAS, 2005; Nelson, 1987; Shaffer, Garland, Gould, Fisher, & Trautman, 1990). The most frequently identified warning signs have included thoughts of suicide

M. DAVID RUDD is with Texas Tech University; MICHAEL MANDRUSIAK is with Baylor University; ALAN BERMAN is with the American Association of Suicidology; THOMAS JOINER, KIMBERLY VAN ORDEN, and TRACY WITTE are with Florida State University; MATTHEW K. NOCK is with Harvard University; and MORTON M. SILVERMAN is with the University of Chicago.

American Association of Suicidology Working Group members included: M. David Rudd, Lanny Berman, Thomas Joiner, Matthew Nock, Greg Brown, Dana Carr, David Chambers, Yeates Conwell, Jan Fawcett, Keith Hawton, Karen Clapper Morris, James Overholser, Mitch Prinstein, David Shaffer, Peter Sheras, and Morton Silverman.

Address correspondence to M. David Rudd, PhD, ABPP, Texas Tech University, Psychology Department, MS 42051, Lubbock, TX 79409-2051; E-mail: david.rudd@ttu.edu

or self-harm; obsessions with death; writing about death; sudden changes in personality, behavior, eating, or sleeping patterns; feelings of guilt; and decreased academic or work performance (Hosansky, 2004). Warning signs for suicide are also commonly listed on the Internet, although there is little consistency and continuity across sites (e.g., Mandrusiak et al., 2006). This is likely due to the fact that these lists are not based on a clear set of empirical guidelines that might better define the construct of a warning sign. To some degree warning signs, as currently conceptualized, are both *signs* (something observed in another) and *symptoms* (what the individual reports to another). It is important to note that the low base rate of completed suicide in the general population significantly decreases our ability to accurately predict its occurrence (Baldessarini, Finklestein, & Arana, 1988). Thus, any warning sign or set of warning signs will likely result in a number of false positives, although it is decidedly preferable to err on the side of caution when dealing with such a devastating outcome.

A number of issues need to be clarified before the utility of warning signs for suicide can be explored empirically. First, little has been written about differentiating warning signs from risk factors in the suicide literature (e.g., Rudd, 2003). We suggest that there are differences between the two. Although Goodwin (2003) hinted at some of the distinctive features of "acute suicide risk" (i.e., within one year), the time frame discussed is still of limited practical utility in clinical contexts where decisions are made, and instructions provided, emphasizing time frames of hours to days. Second, if the conceptual parameters of warning signs can be identified, expert consensus needs to be reached as to what constitutes an identifiable set of warning signs for suicide. And, third, the effects of distributing warning signs for suicide is not understood and some are concerned that exposure to subject matter about suicide may have negative iatrogenic effects (Gould et al., 2005; Shaffer et al., 1990). This is more of an issue in the public education domain which emphasizes prevention and

early intervention programs than it is in clinical settings.

How do warning signs differ from risk factors for suicide? How do we define a warning sign for suicide? These two questions trigger a cascade of relevant questions. For example, are there different warning signs for suicide attempts relative to completions? Do some risk factors also serve as warning signs for suicide? At present, though, we will focus on the most fundamental questions; that is, how to distinguish risk factors from warning signs and how to define warning signs for suicide. The suicide literature identifies a wealth of risk factors for suicide, along with numerous conceptual approaches to identifying risk factors, associated clinical formulation, and intervention or treatment and prevention (e.g. Joiner, in press; Maris, Berman, & Silverman, 2000; Rudd, Joiner, & Rajab, 2004). For example, Hendin, Maltzberger, Lipschitz, Haas, and Kyle (2001) define suicide risk as the presence of any factor empirically shown to correlate with suicidality, including age, sex, psychiatric diagnosis, and past suicide attempts; they contrast suicide risk with the emergence of a suicide crisis, which is time-limited (not chronic and long-standing) and signals potential imminent risk of a suicide attempt or completion regardless of the number or type of risk factors present.

In contrast to the enormous literature base identifying risk factors, the concept of warning signs has yet to be effectively defined and differentiated from risk factors. Joiner and colleagues (1999) report that the key domain in assessment of suicidal risk is previous history of suicide attempt in combination with current suicidal symptoms. Thus, long-standing risk factors (e.g., mental illness or history of past suicide attempt) are not sufficient to assess suicide risk; the current state of the individual must be taken into account. It is our position that warning signs should be specific to the current state of the individual and thus are theoretically and practically distinct from risk factors (see Table 1). Perhaps most apparent, warning signs suggest a proximal rather than distal relationship to

TABLE 1
Differentiating Warnings Signs and Risk Factors for Suicide

Characteristic Feature	Risk Factor	Warning Sign
Nature of Relationship to Suicide	Distal	Proximal
Definitional Specificity	Defined constructs (e.g., <i>DSM-IV</i> diagnosis)	Poorly defined constructs (e.g., behaviors such as buying a weapon)
Empirical Foundation Population	Empirically derived Population dependent (i.e., clinical samples)	Clinically identified/derived Individually applied
Timeframe	Implies enduring or longer-term risk	Implies imminent risk
Nature of Occurrence	Static nature (e.g., age, sex, abuse history)	
Episodic or transient nature (i.e., warning sign resolves)		
Application Context	Can be individually explored and applied	Likely useful only within constellation
Implications for Clinical Practice	Limited implications for intervention	Specific intervention demanded
Experiential Character	Objective	Subjective
Intended Target Group	Experts and clinicians	Lay public and clinicians

suicidal behaviors. In other words, they suggest near-term risk rather than acute or longer-term risk, with the time period for near-term risk being hours to a few days.

As has been discussed elsewhere (Rudd, 2003), there are additional conceptual distinctions between risk factors and warning signs (see Table 1). What are the characteristic features of warning signs relative to risk factors? We can consider a number of characteristic features including: definitional specificity, empirical foundation, time frame, nature of occurrence (static versus episodic), application context, implications for clinical practice, experiential character, and intended target group. With respect to definitional specificity, risk factors are for the most part well-defined constructs that are empirically derived and population dependent, including both clinical and nonclinical samples. In the health literature, warning signs have been poorly defined constructs, often without essential empirical support. For example, shoulder, arm, and neck pain prior to a heart attack are considered warning signs (e.g., American

Heart Association, 2005), but likely lead to disproportionately high rates of false positives given the subjective nature of the symptom and the fact that shoulder, arm, and neck pain can have multiple etiologies. A broad range of warning signs for suicide has been identified in school-based suicide prevention programs, with little consistency across programs and many simply incorporating signs and symptoms of depression (e.g., Hosansky, 2004). In terms of a time frame, warning signs imply near-term risk, whereas risk factors suggest risk over much longer periods, ranging from a year to a lifetime (e.g., Rudd et al., 2004). For example, one of the most prominent risk factors for suicide is hopelessness (Brown, Beck, Steer, & Grisham, 2000), with the time period covered in empirical studies ranging anywhere from 1 to 20 years. In terms of the nature of occurrence, many risk factors are static and enduring (e.g., lifetime psychiatric diagnosis), whereas warning signs are episodic and variable (e.g., thoughts of suicide, behaviors preparing for suicide), although this is not always the case. Similarly,

risk factors are often explored and applied individually; for example, the role of hopelessness in suicide. Warning signs per se appear to have limited meaning and predictive utility outside the notion of a targeted “constellation” or collection of other signs, aside from direct statements or behaviors threatening suicide. As with the emergence of physical illness (e.g., heart attack), it is the constellation of certain signs that raise the bar (i.e., signifies the emergence of a possible disorder), not any one or two symptoms alone. In terms of experiential character, risk factors have a more objective quality (e.g., history of previous suicidal behavior), whereas warning signs are more subjective (e.g., threats, talking, or writing about suicide). In light of the time frame and other conceptual issues mentioned, risk factors have limited implications for immediate intervention and clinical practice. For example, age and sex as suicide risk factors have limited impact on immediate clinical decision making with a patient. The presence of a risk factor that elevates the long-term probabilistic risk for a suicidal crisis, in which warning signs indicate the presence of an active suicidal crisis. Thus, the presence of warning signs would, by definition, demand specific and immediate intervention. Finally, the primary target group in the risk factor literature is experts in general, including clinicians, educators, and researchers. For warning signs, the target is the lay public, with hopes of improving awareness and opportunities for clinical intervention and clinicians, with hopes of improving clinical assessment and treatment planning.

Consistent with the characteristic features reviewed, the following is one possible definition for a suicide warning sign:

A suicide warning sign is the earliest detectable sign that indicates heightened risk for suicide in the near-term (i.e., within minutes, hours, or days). A warning sign refers to some feature of the developing outcome of interest (suicide) rather than to a distinct construct (e.g., risk factor) that predicts or may be casually related to suicide.

As is apparent, the definition offered is potentially problematic but captures the intent behind the identification of warning signs, with an emphasis on its proximal nature to suicide or suicidal behavior.

REACHING EXPERT CONSENSUS

In the late fall of 2003, the AAS convened the working group to explore the issue of warning signs for suicide, with the goal of reviewing the applicable empirical research and reaching a consensus on an identifiable set of warning signs. Since the goal of this article is to address the issue of warning signs for suicide, we will not offer an extensive review of the risk factor literature here (such reviews are available elsewhere; e.g., Maris et al., 2000; Rudd et al., 2004) or of the background discussions leading to the final list of signs documented in Table 2. The central problem in applying the risk factor literature to warning signs identified by the expert working group was the issue of time frame, emphasizing the proximal nature of warning signs to suicide and suicidal behaviors. Despite an extensive and impressive risk factor literature, few researchers have identified specific signs related to near-term suicide risk. For example, Hendin et al. (2001) identified three signs that immediately preceded the suicide of a patient: a precipitating event, “one or more intense affective states other than depression,” and one of three recognizable patterns of behavior (speech or actions suggesting suicide, deterioration in occupational or social functioning, and increased substance abuse). Similarly, Maltzberger, Hendin, Haas, and Lipschitz (2003) identified the characteristics of precipitating events in cases of suicide (e.g., initiated by the patient, external event), finding that a precipitating event occurred in 25 of 26 suicide completions studied. Chiles, Strosahl, and Cowden (1986) found substance abuse and communication of intent were factors that most commonly preceded suicide attempts. In one of the largest studies ever done with

TABLE 2
Consensus Warning Signs for Suicide

Are you or someone you love at risk for suicide? Get the facts and take action.

Call 9-1-1 or seek immediate help from a mental health provider when you hear, say or see any one of these behaviors:

- Someone threatening to hurt or kill themselves
- Someone looking for ways to kill themselves: seeking access to pills, weapons, or other means
- Someone talking or writing about death, dying, or suicide

Seek help by contacting a mental health professional or calling 1-800-273-TALK for a referral should you witness, hear, or see anyone exhibiting any one or more of these behaviors:

- Hopelessness
 - Rage, anger, seeking revenge
 - Acting reckless or engaging in risky activities, seemingly without thinking
 - Feeling trapped—like there's no way out
 - Increasing alcohol or drug use
 - Withdrawing from friends, family, or society
 - Anxiety, agitation, unable to sleep, or sleeping all the time
 - Dramatic changes in mood
 - No reason for living; no sense of purpose in life
-

relevance to the issue of warning signs, Busch, Fawcett, and Jacobs (2003) found that “severe anxiety and/or extreme agitation” was the most common factor precipitating inpatient suicides. Aside from these few studies, little is available in the literature addressing very short periods of risk (i.e., hours to days) consistent with the concept of warning signs. Accordingly, the working group was highly sensitive to the need for an empirical foundation to public education and awareness campaigns.

After considerable discussion, the working group reached consensus on two points: First, that warning signs need to be presented in hierarchical fashion (see Table 2), recognizing the importance of the overt expression of heightened suicidality; and second, that any public campaign about suicide warning signs needs to provide clear and specific directions about what to do if someone manifests signs of suicidality. The working group

differentiates the need for immediate help by using a two-tier model. The first tier clearly directs the individual to call 9-1-1 or seek immediate professional help in response to overt suicide threats, preparatory acts (e.g., looking for method), and expressed (i.e., verbal or written) thoughts about death, dying, or suicide. In contrast, the second tier directs the individual to seek help, without specifying immediate assistance, when someone manifests one of a range of behaviors, all of which are also recognized risk factors for suicide. As should be clear, the working group had a simple goal of directing individuals to take action under the conditions noted in Table 2, wholly consistent with the imminent risk nature of warning signs. Certainly this two-tier system differentiates warning signs more clearly associated with near-term risk from those associated with acute and chronic risk (i.e., those warning signs that also serve as risk factors; ultimately, though, research is

needed to answer questions about what truly qualifies as a suicide warning sign.

A RESEARCH AGENDA

The American Association of Suicidology (AAS) working group had little difficulty reaching consensus on the need for additional research on warning signs for suicide. There are three identifiable relevant domains: identification, dissemination, and impact. As mentioned above, differentiating warning signs from risk factors is an area of considerable need given that a concise, clear list of indicators of imminent danger will enable the general public to appropriately respond as soon as the potential for suicidal behavior is recognized. As Table 1 indicates, many of the currently identified warning signs are also commonly accepted risk factors, with ample support in the empirical literature. What is needed is research that explores variables associated with suicide risk over clinically relevant time frames of hours to days are presented in Table 2. Clinicians make decisions about suicidal patients with short time periods in mind, asking questions such as: Will this patient be safe for the next several hours? Will he or she be safe for the next several days? Similarly, research is needed that recognizes that suicidal ideation and behaviors are not constant; rather, they fluctuate (sometimes dramatically) in specificity and intent over periods of hours and days. This is in stark contrast to warning signs for other disorders such as skin cancer or heart disease, where the warning sign constellations do not shift or fluctuate as dramatically as those for suicide. What is clearly needed is research targeting suicide risk over clinically meaningful time periods. The net result will be a more concise identification of warning signs for suicide.

The second domain mentioned addresses the question of how best to package and disseminate warning signs for suicide. This is a question similar to that already asked by those conducting suicide prevention programs in the schools (e.g., Hosansky,

2004). Perhaps the primary concern is developing effective dissemination tools or presentation packages that lead to behavioral changes; that is, prompting individuals to seek help when needed. A potential model for the dissemination of suicide warning signs is Operation Heartbeat, a community-based information dissemination initiative coordinated by the American Heart Association (1998). The goal of Operation Heartbeat is to raise public awareness of both warning signs for heart attacks and appropriate emergency responses.

The final domain mentioned by the working group addresses the impact of warning signs programs. Concern persists that exposure to suicide-related content will have iatrogenic effects (e.g., Gould et al., 2005). Indeed, an important component of a public health campaign should involve factual information about suicide will not encourage individuals to consider attempting in combination with the list of warning signs. The design and implementation of studies in this area are simple enough and several are already under way. Van Orden, Joiner, Hollar, and Rudd (2006) used an experimental design with two conditions (experimental group and control group) to assess possible effects of the warning signs discussed here. The control group read a list of warning signs about diabetes then a list of warning signs about heart attacks, whereas the experimental group read the same list of warning signs for diabetes, then the key list of warning signs for suicide. Levels of confidence in the ability to recognize warning signs for suicide as well as questions addressing possible stigmatizing effects of the warning signs were administered to assess both preliminary indications of the effectiveness of disseminating the warning signs as well as indications of possible iatrogenic effects of disseminating the warning signs (e.g., stigmatization). If differences are found between the control group and experimental group on ability to recognize suicide warning signs, the study design will rule out certain explanations, such as the effect of reading warning signs (i.e., all groups read two sets). Mandrusiak and colleagues (2006) conducted an investigation of the role of the

Internet in the dissemination of warning signs for suicide and found little agreement across Web sites, with little specificity to suicide among the warning signs offered. For example, most sites included were heavily weighted with symptoms of depression as warning signs for suicide. Depression is a risk factor for suicide, not a warning sign per se.

CLOSING COMMENTS

The issue of establishing and disseminating empirically-based warning signs for suicide is an important one. To a large degree, empirical investigation requires a paradigm shift, conceptualizing risk in immediate, acute, and chronic fashion. It will certainly be necessary to redefine short-term risk as something far shorter than 12 months. Clini-

cians will most likely be highly receptive to such a shift, with an emphasis on empirical work that has direct impact on day-to-day clinical decision making with suicidal patients, hence, the choice of the *near-term* descriptor. In addition, a list of warning signs for imminent suicide risk will be a valuable resource for suicide hotline phone counselors, a large number of whom are lay volunteers, as well as emergency department staff and first responders (e.g., police and fire departments). Undoubtedly, many readily accepted risk factors will also prove to be important warning signs; however, an empirical foundation needs to be established first. We have attempted to lay the foundation for such empirical work here by clarifying some of the characteristic features of warnings signs and offering a working definition of the construct, along with identifying three domains for future research.

REFERENCES

- AMERICAN ASSOCIATION OF SUICIDOLOGY. (2005). *Public education campaign for warning signs for suicide*. Manuscript in preparation.
- AMERICAN HEART ASSOCIATION. (1998). *Operation heartbeat implementation guide*. Dallas, TX: Author.
- AMERICAN HEART ASSOCIATION. (2005). *Heart attack, stroke, and cardiac arrest warning signs*. Retrieved on June 27, 2005, from http://www.americanheart.org/presenter.jhtml?identifier=3053#Heart_Attack
- BALDESSARINI, R. J., FINKLESTEIN, S., & ARANA, G. W. (1988). Predictive power of diagnostic tests. In F. Flach (Ed.), *Psychobiology and psychopharmacology* (pp. 175–189). New York: Norton.
- BROWN, G. K., BECK, A. T., STEER, R. A., & GRISHAM, J. R. (2000). Risk factors for suicide in psychiatric outpatients: A 20-year prospective study. *Journal of Consulting and Clinical Psychology, 68*, 371–377.
- BUSCH, K. A., FAWCETT, J., & JACOBS, D. G. (2003). Clinical correlates of inpatient suicide. *Journal of Clinical Psychiatry, 64*, 14–19.
- CARTER, A. (2004). *Warning signs of heart disease*. Retrieved June 27, 2005, from University of Michigan Health System Web site: http://www.med.umich.edu/1libr/aha/aha_warning_sha.htm
- CHILDREN'S MENTAL HEALTH SCREENING AND PREVENTION ACT: HR-3063. (2003). Retrieved June 27, 2005, from The Orator Web site: <http://www.theorator.com/bills108/hr3063.html>
- CHILES, J. A., STROSAHL, K., COWDEN, L., & GRAHAM, R. (1986). The 24 hours before hospitalization: Factors related to suicide attempting. *Suicide and Life-Threatening Behavior, 16*, 335–342.
- GOODWIN, F. K. (2003). Preventing inpatient suicide. *Journal of Clinical Psychiatry, 64*, 12–13.
- GOULD, M. S., GREENBERG, T., VELTING, D. M., & SHAFFER, D. (2003). Youth suicide risk and preventive interventions: A review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry, 42*, 386–405.
- GOULD, M. S., MARROCCO, F. A., KLEINMAN, M., THOMAS, J. G., MOSTKOFF, K., COTE, J., ET AL. (2005). Evaluating iatrogenic risk of youth suicide screening programs: A randomized controlled trial. *Journal of the American Medical Association, 293*, 1635–1643.
- HENDIN, H., MALTSBERGER, J. T., LIPSCHITZ, A., HAAS, A. P., & KYLE, J. (2001). Recognizing and responding to a suicide crisis. *Suicide and Life-Threatening Behavior, 31*, 115–128.
- HOSANSKY, D. (2004, February 13). Youth suicide: Should government fund more prevention programs? *CQ Researcher, 127*–147.
- JOINER, T. E. (in press). *Why people die by suicide*. Cambridge, MA: Harvard University Press.

- LEE, T. H. (2004). Planning pays off if a heart attack strikes. *Harvard Heart Letter*, 14(5), 1–3.
- MALTSBERGER, J. T., HENDIN, H., HAAS, A. P., & LIPSCHITZ, A. (2003). Determination of precipitating events in the suicide of psychiatric patients. *Suicide and Life-Threatening Behavior*, 33, 111–119.
- MANDRUSIAK, M., RUDD, M. D., JOINER, T., BERMAN, A. L., VAN ORDEN, K. A., & WITTE, T. (2006). Warning signs for suicide on the internet: A descriptive study. *Suicide and Life-Threatening Behavior*, 36, 263–271.
- MARIS, R. W., BERMAN, A. L., & SILVERMAN, M. M. (2000). *Comprehensive textbook of suicidology*. New York: Guilford.
- NELSON, F. L. (1987). Evaluation of a youth suicide prevention school program. *Adolescence*, 22, 813–825.
- PETERSON, J. L., & NEWMAN, R. (2000). Helping to curb youth violence: The APA-MTV “warning signs” initiative. *Professional Psychology: Research and Practice*, 31, 509–514.
- THE PRESIDENT’S NEW FREEDOM COMMISSION ON MENTAL HEALTH. (2003). *Achieving the promise: Transforming mental health care in America*. Retrieved June 27, 2005, from <http://www.mentalhealthcommission.gov/reports/FinalReport/toc.html>
- RUDD, M. D. (2003). Warning signs for suicide. *Suicide and Life-Threatening Behavior*, 33, 99–100.
- RUDD, M. D., JOINER, T., & RAJAB, M. H. (2004). *Treating suicidal behavior: An effective, time-limited approach*. New York: Guilford.
- SHAFFER, D., GARLAND, A., GOULD, M., FISHER, P., & TRAUTMAN, P. (1990). Preventing teenage suicide: A critical review. In S. Chess & M. E. Hertzog (Eds.), *Annual progress in child psychiatry and child development, 1989* (pp. 401–428). Philadelphia, PA: Brunner/Mazel.
- VAN ORDEN, K. A., JOINER, T. E., JR., HOLLAR, D., & RUDD, M. D. (2006). A test of the effectiveness of a list of suicide warning signs for the public. *Suicide and Life-Threatening Behavior*, 36, 272–287.

Manuscript Received: August 11, 2005

Revision Accepted: September 10, 2005