

Editorial



Emergency Departments Are Underutilized Sites for Suicide Prevention

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Each year approximately 1,000,000 people die by suicide, accounting for nearly 3% of all deaths and more than half (56%) of all violent deaths in the world (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). Suicide ideation and suicide attempts are strongly linked to death by suicide and powerfully predict further suicidal behavior (Institute of Medicine, 2002). There are an estimated 100–200 suicide attempts for each completed suicide in young people, and 4 attempts for each completed suicide in the elderly (Institute of Medicine, 2002).

Emergency departments (EDs) are the most important site, epidemiologically speaking, for treating those who make suicide attempts. EDs in the United States, for example, record over 500,000 suicide-related visits annually (Larkin, Smith, & Beautrais, 2008). The majority of suicide attempt patients are discharged after medical stabilization and psychosocial evaluation, but carry a significant risk of recidivism (Larkin, Smith, & Beautrais, 2008). Similarly, ED patients who present with suicide ideation (without attempt) have risks of returning to the ED with further ideation or with suicide attempts which are as high as those who present with attempts (Larkin, Beautrais, Gibb, & Laing, 2008). In addition, a significant fraction of those who present to EDs for nonmental health reasons often have occult or silent suicide ideation (estimated at 8–12%) (Claassen & Larkin, 2005).

The worldwide economic tsunami and sky-rocketing healthcare costs have ensured that mental health-related visits and presentations for suicidal behavior will continue to rise in the foreseeable future. The closure of psychiatric inpatient facilities, reductions in inpatient beds, moves to treat people in the community, and increased costs of general practitioner visits have coincided with – and likely account for – increased ED attendances by psychiatric and suicidal patients who previously might have been admitted or seen in primary care. The ED is now the default, *de facto*

option for urgent and acute contact for suicidal patients within the health system – and in many countries the ED is the only access to 24/7 healthcare (Fields et al., 2001).

The ED Is a Revolving Door Through Which Suicidal Patients Frequently Return

Although suicide risk is extremely difficult to predict in the general population (Goldney, 2000), ED patients with substance abuse, depression, conduct disorder, and impulsivity are a readily identifiable population with transparently high risks of suicidal behavior and death (Crandall, Fullerton-Gleason, Aguero, & LaValley, 2006; Gairin, House, & Owens, 2003; Owens, Horrocks, & House, 2002). Up to 25% of suicide attempters seen in the ED make another attempt, and 5–10% eventually die by suicide – far higher than age- and gender-matched samples in the general population (Beautrais, 2003; Beautrais, 2004; Owens et al., 2002). Those who make suicide attempts use ED services for a range of medical problems and have increased risks of homicide, accidents, disease, and premature death in general (Beautrais, 2004; Cuijpers & Schoevers, 2004).

The ED Is a Critical Link to Outpatient Care in the Chain of Suicide Prevention

EDs are thoroughfares for acute and chronically suicidal individuals (Claassen & Larkin, 2005). An important chal-

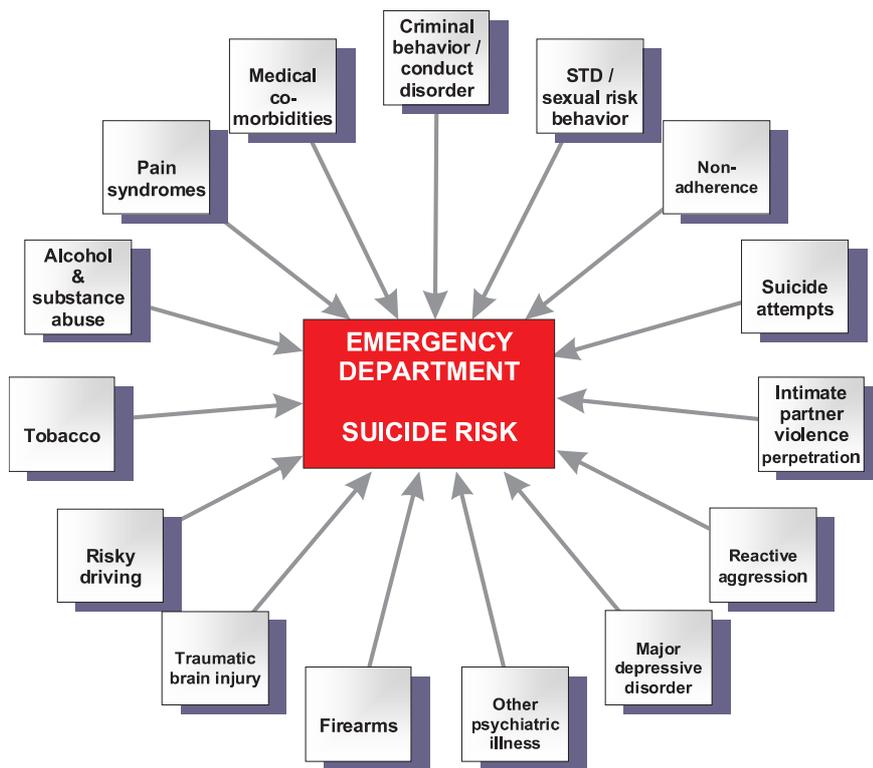


Figure 1. The emergency department nexus for suicide-related endophenotypes.

lenge is to engage at-risk patients into accessible outpatient care management and suicide prevention programs. However, ED patients who survive suicide attempts are notoriously difficult to engage in follow-up treatment. Up to half of suicide attempters refuse outpatient treatment altogether (Kurz & Moller, 1984; Rudd et al., 1996), and up to 60% of suicide attempters do not attend as much as 1 week of treatment after discharge from the ED (Jauregui, Martinez, Rubio, & Santo-Domingo, 1999). Of those attempters who do attend treatment, 3 months later 40–60% will be receiving no treatment (Monti, Cedereke, & Jehagen, 2003); within a year, treatment dropout is almost 75% (Krulick & Hales, 1988). Adherence building and engaging care transition strategies are needed.

High dropout rates and poor initial attendance in post-ED treatment following an attempt suggest that the ED is a vital link in the suicidal patient's chain of survival. The ED may be patients' sole access to care (Miller & Taylor, 2005), creating a unique opportunity, indeed a responsibility, to engage them and initiate treatment. Suicide prevention work to date has not taken advantage of ED volumes, "teachable moments," or ED opportunities for care linkage, relying instead on traditional models of outpatient mental healthcare delivery, with attendant attrition, lack of engagement, and broken links in the chain of care. However, isolated from the suicide prevention community, emergency medicine (EM) practitioners have developed their own brief interventions for patients with hazardous alcohol drinking, drug use, and smoking (Academic ED SBIRT Collaborative, 2007). While these models might be extend-

ed to suicidal behaviors, more inter- and transdisciplinary collaborations between emergency and mental health workers are needed.

The ED Is an Appropriate Site for Screening and Intervening for Suicide Risk

Three distinct groups of ED patients can be identified as being at significant risk of suicidal ideation and behavior:

- Those who present to ED with transparent suicidal ideation or following suicide attempts;
- Those who attend with mental health problems that are not suicide-related;
- Those who attend with specific physical problems but who have occult or silent suicide risk.

A host of at-risk endophenotypes converge on the ED setting: males, youth, prisoners, gun-owners, homeless, psychiatrically ill, substance abusers, and older adults (Figure 1). Men, for example, use healthcare services less than women, but are at higher risk of suicide, gun ownership, and visiting EDs for trauma, assault, and substance problems. These presentations provide an opportunity to screen for suicide risk. Other high-risk groups likely to present to EDs include young people who have dropped out of school or who are not affiliated with school, college, or work-

places, substance-abusing youth, violent youth, those with conduct disorder, and those in foster and welfare care; patients with severe, chronic mental disorders, including those with depression, psychosis, and personality disorders; older adults with physical health problems, persistent pain, disability, and/or depression.

ED-based interventions must take into account both suicide states and traits, and ED teams must tailor approaches based upon complex endophenotypes and varied presentations, histories, and psychopathologies. Opportunities that address the current crisis and precipitating events must be distinguished from the competing need to engage suicidal ED patients in longer-term mental health care. While some commentators are pessimistic about the potential for an acute emergency medicine service to be able to intervene with a population possessed of both chronic social and mental health problems (Forster, & King, 1994a,b), psychosocial issues for suicidal patients are no more complex than those associated with alcohol and drug users for whom ED-based brief interventions have been shown to be effective. A substantial body of evidence shows that the ED is an appropriate site for screening and identification of hazardous alcohol, drug, and tobacco use, for implementing brief interventions or brief negotiated interventions based on motivational interviewing, and for making facilitated referrals to longer-term treatment to address these problems (Academic ED SBIRT Collaborative, 2007).

Intervening in the ED with People at Risk of Suicide

While there is strong justification for improving the management and support of those who make suicide attempts, there is a notable lack of well-designed studies that could lead to clear recommendations. Existing guidelines focus upon patient safety, treatment of the medical effects of injury or poisoning, and psychosocial assessment (Jacobs, 1999; Rudd, 2006; Shea, 2002).

Candidate brief ED interventions and treatments for suicidal patients include:

- Education about restricting access to lethal means of suicide, including firearms (Brent, Baugher, Birmaher, Kolko, & Bridge, 2000; Larkin, 2003; Kruesi et al., 1999);
- Teaching brief problem-solving, coping, and self-soothing skills (Brown et al., 2005; Donaldson, Spirito, & Esposito-Smythers, 2005);
- Youth-nominated support teams (King et al., 2006);
- Building social support (Randell, Eggert, & Pike, 2001);
- Informal help with clinical and social needs (Cedereke & Ojehagen, 2007);
- Safety plans (Stanley & Brown, 2008);
- Family therapy (Rotheram-Borus, Piacentini, Cantwell, Belin, & Song, 2000);

- (brief) CBT (Esposito-Smythers, Spirito, Uth, & LaChance, 2007).

Many of these interventions have been developed for adolescents alone, and many promising interventions have been piloted in single studies only without replication or wide validation.

Simple, Low-Burden, Post-Discharge Interventions May Reduce Suicidal Behavior

There is increasing evidence that simple, low-burden, “push” interventions delivered after ED discharge may reduce suicidal behavior in select patient subgroups: Friendly letters (“postcards”) sent to patients during the first year following ED admission for self-poisoning reduced self-poisoning repetitions in women in the intervention group (Carter, Clover, Whyte, Dawson, & D’Este, 2005, 2007). Subjects contacted by telephone 1 month after ED discharge by a psychiatrist had significantly lower repeat attempt rates than those who received no contact; in addition, those contacted 3 months after ED discharge had rates of repeat attempts which did *not* differ from control subjects who did not receive calls (Vaiva et al., 2006). Most reattempts after an index visit for suicide attempt occur within 3 months; hence, interventions must be initiated promptly after ED discharge and sustained for several months if they are to have meaningful impact on suicide reattempt rates.

Education of ED Staff About Suicidal Behavior

While an expansion of interested stakeholders could help build multidisciplinary, ED-based, suicide-prevention teams, self-harm patients are often regarded by ED staff as undesirable and difficult to treat. Numerous studies report that hospital and ED staff do not enjoy treating suicidal patients and feel poorly trained to care for patients with suicide ideation and related psychosocial problems (Friedman et al., 2006). Healthcare staff attitudes toward patients are important because they may influence the quality of treatment provided, the likelihood of engagement with aftercare, and the subsequent risk of further self-harm (MacKay & Barrowclough, 2005). However, despite clear demand for staff education about suicidal behavior, few EDs incorporate suicide education into medical and nursing staff training curricula (Weissberg, 1990).

Careful recruitment, selection, and education of ED staff and attention to staff attitudes and “burnout” could reduce patient stigmatization and ensure provision of professional

and compassionate care. While it is possible that overly compassionate care could lead to an increase in ED care-seeking, most EDs are so oversubscribed and under-resourced that few patients would logically choose to wait in an ED if given alternatives. Research is urgently needed to explore the extent to which selecting and training ED staff for attitudes, abilities, interests, and virtues that are sympathetic to patients with mental health needs can enhance identification and assessment of suicidal behavior, and result in more professional, compassionate care and attention to patients' psychiatric and psychosocial issues in ways that enhance care linkage, adherence behaviors, and mental health outcomes (Larkin, Beautrais, Spirito, Kirrane, Lippmann et al., 2009).

Improving Data Surveillance and Recording

One of the barriers to developing and evaluating interventions with suicidal patients is the lack of definitional precision around suicidal behaviors. Suicidal behavior ranges from passive ideation and mildly injurious self-harm to the determinedly lethal attempt. There is no agreed-upon terminology or operational definition of suicidal behavior in English-speaking countries, let alone the rest of the non-English-speaking world. This imprecision is reflected in poor data recording and surveillance. The classification algorithm for assessment of suicidal behavior, developed by Posner and colleagues, begins to address this issue by offering standardized definitions (Posner, Oquendo, Gould, Stanley, & Davies, 2007). The utility and applicability of this schema has yet to be demonstrated in ED settings, but it may ensure consistency both within and across institutional settings.

Assessing Cost-Effectiveness of ED-Based Initiatives

Healthcare is expensive, but ED care is considered more expensive than other care. This assertion is untrue (Williams, 1996). Emergency departments are a national resource in all health systems and may be used maximally to enhance efficiency. The fixed costs of staffing, electricity, and space are high, but once spent the total costs are relatively unchanged by adding a few more patients. Hence, ED-based interventions with suicidal patients to reduce repeat presentations may be an excellent way to reduce healthcare costs. Screening and brief interventions for alcohol problems in trauma patients treated in EDs and hospitals was found to be cost-effective, resulting in savings of US \$89 for each patient screened and US \$330 for each patient offered an intervention (Gentilello, Ebel, Wickizer, Salkever, & Rivara, 2005). There is a need to evaluate the

cost-effectiveness of interventions with ED-treated suicidal patients to explore the extent to which savings of similar magnitude might apply, especially given the opportunity costs of letting patients at risk slip through the holes in our current healthcare safety net.

Summary

The emergency department is an increasingly important site for suicidal patients to have contact with the healthcare system. Suicidal patients have high near-term risks of suicide and suicide attempts after leaving the ED. Suicide-related ED visits are increasing in many countries; these patients have enduring and elevated risks of suicidal behaviors and repeat ED visits. For many, the ED functions as their *de facto* healthcare provider – creating new opportunities for surveillance, screening, brief interventions, and referral.

ED suicidal patients are frequently not adherent with traditional mental health interventions. There are increasing pressures on EDs to decompress and link patients into outpatient treatment, but cost-effective ED-initiated interventions to improve outpatient care transitions and symptom/illness self-management are lacking. There are few effective ED interventions for suicidal patients; none have assessed cost-effectiveness.

The ED is a veritable magnet for high-risk patients and suicide-related endophenotypes. Hence, the ED is an untapped setting for developing cost-effective approaches to screening, establishing suicide registers, developing brief interventions, promoting referrals, enhancing engagement, and ensuring follow-up. Armed with optimal staffing and resources, multidisciplinary ED teams consisting of professionals from emergency medicine, psychiatry, psychology, toxicology, social work, police, nursing, and related areas can partner with innovators and suicide researchers to leverage the ED as a suicide prevention resource for the entire community, a critical link in the chain of survival. Careful staff selection and continuing staff education about suicide, and improved data surveillance about suicide-related presentations, underpin ED-based suicide prevention activities and are also needed.

Note

The International Association for Suicide Prevention (IASP) Task Force on Suicide and Emergency Medicine will meet at the 13th European Symposium on Suicide and Suicidal Behaviors (ESSSB13), Rome, September 1–4, 2010. IASP members interested in joining this Task Force, attending the meeting, and/or presenting a paper at a Suicide and Emergency Medicine symposium at ESSSB13 are invited to contact the Task Force Chair, Gregory Luke Larkin, at gluke.larkin@yale.edu.

References

- Academic ED SBIRT Collaborative. (2007). The impact of screening, brief intervention, and referral for treatment on emergency department patients' alcohol use. *Annals of Emergency Medicine*, *50*, 699–710.
- Beautrais, A. L. (2003). Subsequent mortality in medically serious suicide attempts: A 5-year follow-up. *Australian and New Zealand Journal of Psychiatry*, *37*, 595–599.
- Beautrais, A. L. (2004). Further suicidal behavior among medically serious suicide attempters. *Suicide and Life-Threatening Behavior*, *34*, 1–11.
- Brent, D. A., Baugher, M., Birmaher, B., Kolko, D. J., & Bridge, J. (2000). Compliance with recommendations to remove firearms in families participating in a clinical trial for adolescent depression. *Journal of the American Academy of Child and Adolescent Psychiatry*, *39*, 1220–1226.
- Brown, G. K., Ten Have, T., Henriques, G. R., Xie, S. X., Hollander, J. E., & Beck, A. T. (2005). Cognitive therapy for the prevention of suicide attempts: A randomized controlled trial. *Journal of the American Medical Association*, *294*, 563–570.
- Carter, G., Clover, K., Whyte, I. M., Dawson, A. H., & D'Este, C. (2005). Postcards from the EDge project: Randomised controlled trial of an intervention using postcards to reduce repetition of hospital treated deliberate self poisoning. *British Medical Journal*, *331*(7520), 805.
- Carter, G. L., Clover, K., Whyte, I. M., Dawson, A. H., & D'Este, C. (2007). Postcards from the EDge: 24-month outcomes of a randomised controlled trial for hospital-treated self-poisoning. *British Journal of Psychiatry*, *191*, 548–553.
- Cedereke, M., & Ojehagen, A. (2007). Formal and informal help during the year after a suicide attempt: A one-year follow-up. *International Journal of Social Psychiatry*, *53*, 419–429.
- Claassen, C. A., & Larkin, G. L. (2005). Occult suicidality in an emergency department population. *British Journal of Psychiatry*, *186*, 352–353.
- Crandall, C., Fullerton-Gleason, L., Aguero, R., & LaValley, J. (2006). Subsequent suicide mortality among emergency department patients seen for suicidal behavior. *Academic Emergency Medicine*, *13*, 435–442.
- Cuijpers, P., & Schoevers, R. A. (2004). Increased mortality in depressive disorders: A review. *Current Psychiatry Report*, *6*, 430–437.
- Donaldson, D., Spirito, A., & Esposito-Smythers, C. (2005). Treatment for adolescents following a suicide attempt: Results of a pilot trial. *Journal of the American Academy of Child and Adolescent Psychiatry*, *44*, 113–120.
- Esposito-Smythers, C., Spirito, A., Uth, R., & LaChance, H. (2007). Cognitive behavioral treatment for suicidal alcohol abusing adolescents: Development and pilot testing. *American Journal on Addictions*, *15* (Suppl. 1), 126–130.
- Fields, W. W., Brent, R. A., Gregory, L. L., Catherine, A. M., Loren, A. J., Charlotte, Y. et al. (2001). The Emergency Medical Treatment and Labor Act as a federal health care safety net program. *Academic Emergency Medicine*, *8*, 1064–1069.
- Forster, P., & King, J. (1994a). Definitive treatment of patients with serious mental disorders in an emergency service, Part I. *Hospital and Community Psychiatry*, *45*, 867–869.
- Forster, P., & King, J. (1994b). Definitive treatment of patients with serious mental disorders in an emergency service, Part II. *Hospital and Community Psychiatry*, *45*, 1177–1178.
- Friedman, T., Newton, C., Coggan, C., Hooley, S., Patel, R., Pickard, M. et al. (2006). Predictors of A&E staff attitudes to self-harm patients who use self-laceration: Influence of previous training and experience. *Journal of Psychosomatic Research*, *60*, 273–277.
- Gairin, I., House, A., & Owens, D. (2003). Attendance at the accident and emergency department in the year before suicide: retrospective study. *British Journal of Psychiatry*, *183*, 28–33.
- Gentilello, L. M., Ebel, B. E., Wickizer, T. M., Salkever, D. S., & Rivara, F. P. (2005). Alcohol interventions for trauma patients treated in emergency departments and hospitals: A cost-benefit analysis. *Annals of Surgery*, *241*, 541–550.
- Goldney, R. D. (2000). Prediction of suicide and attempted suicide. In K. Hawton & K. van Heeringen (Eds.), *The international handbook of suicide and attempted suicide* (pp. 585–595). New York: Wiley.
- Institute of Medicine. (2002). *Reducing suicide: A national imperative*. Washington, DC: National Academies Press.
- Jacobs, D. G. (1999). *Guide to suicide assessment and intervention*. San Francisco: HC Printing.
- Jauregui, J., Martinez, M. L., Rubio, G., & Santo-Domingo, J. (1999). Patients who attempted suicide and failed to attend mental health centres. *European Psychiatry*, *14*, 205–209.
- King, C. A., Kramer, A., Preuss, L., Kerr, D. C. R., Weisse, L., & Venkataraman, S. (2006). Youth-Nominated Support Team for suicidal adolescents (Version 1): A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *74*, 199–206.
- Kruesi, M. J., Grossman, J., Pennington, J. M., Woodward, P. J., Duda, D., & Hirsch, J. G. (1999). Suicide and violence prevention: parent education in the emergency department. *Journal of the American Academy of Child and Adolescent Psychiatry*, *38*, 250–255.
- Krug, E. G., Dahlberg, L., Mercy, J., Zwi, A., & Lozano, R. (2002). *World report on violence and health*. Geneva: World Health Organization.
- Kruee, D. A., & Hales, R. E. (1988). Compliance with psychiatric referrals from a general hospital psychiatry outpatient clinic. *General Hospital Psychiatry*, *10*, 339–345.
- Kurz, A., & Moller, H. J. (1984). [Help-seeking behavior and compliance of suicidal patients]. *Psychiatrische Praxis*, *11*(1), 6–13.
- Larkin, G. L. (2003). Screening for adolescent firearms-carrying: One more way to save a life. *Annals of Emergency Medicine*, *42*, 808–810.
- Larkin, G. L., Beautrais, A. L., Gibb, S., & Laing, N. (2008). The epidemiology of presentations for suicidal ideation to the emergency department. *Academic Emergency Medicine*, *15*(5) (Suppl. 1), S208–S209.
- Larkin, G., Beautrais, A., Spirito, A., Kirrane, B. M., Lippmann, M. J., & Milzman, D. P. (2009). Mental health and emergency medicine: A research agenda. *Academic Emergency Medicine*, *16*, 1110–1119.
- Larkin, G. L., Smith, R. P., & Beautrais, A. L. (2008). Trends in US emergency department visits for suicide attempts, 1992–2001. *Crisis*, *29*, 73–80.
- Mackay, N., & Barrowclough, C. (2005). Accident and emergency staff's perceptions of deliberate self-harm: Attributions, emotions and willingness to help. *British Journal of Clinical Psychology*, *44*(Pt. 2), 255–267.

- Miller, T. R., & Taylor, D. M. (2005). Adolescent suicidality: Who will ideate, who will act? *Suicide and Life-Threatening Behavior*, 35, 425–435.
- Monti, K., Cedereke, M., & Jehagen, A. (2003). Treatment attendance and suicidal behavior 1 month and 3 months after a suicide attempt: A comparison between two samples. *Archives of Suicide Research*, 7, 167–174.
- Owens, D., Horrocks, J., & House, A. (2002). Fatal and non-fatal repetition of self-harm. Systematic review. *British Journal of Psychiatry*, 181, 193–199.
- Posner, K., Oquendo, M., Gould, M., Stanley, B., & Davies, M. (2007). Columbia Classification Algorithm of Suicide Assessment (C-CASA): Classification of suicidal events in the FDA's pediatric suicidal risk analysis of antidepressants. *American Journal of Psychiatry*, 164, 1035–1043.
- Randell, B. P., Eggert, L. L., & Pike, K. C. (2001). Immediate post intervention effects of two brief youth suicide prevention interventions. *Suicide and Life-Threatening Behavior*, 31, 41–61.
- Rotheram-Borus, M. J., Piacentini, J., Cantwell, C., Belin, T. R., & Song, J. (2000). The 18-month impact of an emergency room intervention for adolescent female suicide attempters. *Journal of Consulting and Clinical Psychology*, 68, 1081–1093.
- Rudd, M. D. (2006). *The assessment and management of suicidality*. Sarasota, FL: Professional Resource Press.
- Rudd, M. D., Rajab, M. H., Orman, D. T., Joiner, T., Stulman, D. A., & Dixon, W. (1996). Effectiveness of an outpatient intervention targeting suicidal young adults: preliminary results. *Journal of Consulting and Clinical Psychology*, 64, 179–190.
- Shea, S. C. (Ed.). (2002). *The practical art of suicide assessment*. Hoboken, NJ: Wiley Inc.
- Stanley, B., & Brown, G. K. (2008). *The safety plan treatment manual to reduce suicide risk: Veteran version*. Washington, DC: United States Department of Veterans Affairs.
- Vaiva, G., Ducrocq, F., Meyer, P., Mathieu, D., Philippe, A., Libersa, C., & Goudemand, M. (2006). Effect of telephone contact on further suicide attempts in patients discharged from an emergency department: Randomised controlled study. *British Medical Journal*, 332(7552), 1241–1245.
- Weissberg, M. (1990). The meagerness of physicians' training in emergency psychiatric intervention. *Academic Medicine*, 65, 747–750.
- Williams, R. M. (1996). The costs of visits to emergency departments. *New England Journal of Medicine*, 334, 642–646.

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