

The American Journal of Psychiatry

Residents' Journal

January 2017

Volume 12

Issue 1

Inside

2 Suicidal Behavior: A Distinct Psychobiology?

Naji C. Salloum, M.D.

Examining the serotonergic system, hypothalamic pituitary adrenal axis, neuroinflammation, kynurenine pathway, and neuroplasticity, as well as interplay of biological systems.

5 Supporting Residents in the Wake of Patient Suicide

Charles A. Whitmore, M.D., M.P.H., Jenna Cook, M.D., Lucas Salg, M.D.

Review of a newly-developed curriculum at the University of Colorado.

8 Current Challenges in the Management of LGBT Suicide

Rafik Sidaros, M.D.

Analysis of risk factors, minority stress, and transgender issues, as well as positions on therapy and interventions.

11 Suicide Rates in Cancer Patients in the Current Era in United States

Vivek Kumar, M.D., Neha Chaudhary, M.D., Parita Soni, M.B.B.S., Prameeta Jha, M.B.B.S.

Comparisons between patients and the general population.

15 Suicide Prediction With Machine Learning

Gopalkumar Rakesh, M.D.

Examining use of statistical techniques that utilize complex calculations in analyzing large data sets to predict risk factors.

18 Countertransference Reactions to a Suicidal Patient

Mary-Catherine Rensko, D.O.

Discussion of a case in which the resident physician's avoidance of the patient demonstrated unconscious feelings of countertransference hatred.

20 Suicide by Cop: A Psychiatric Phenomenon

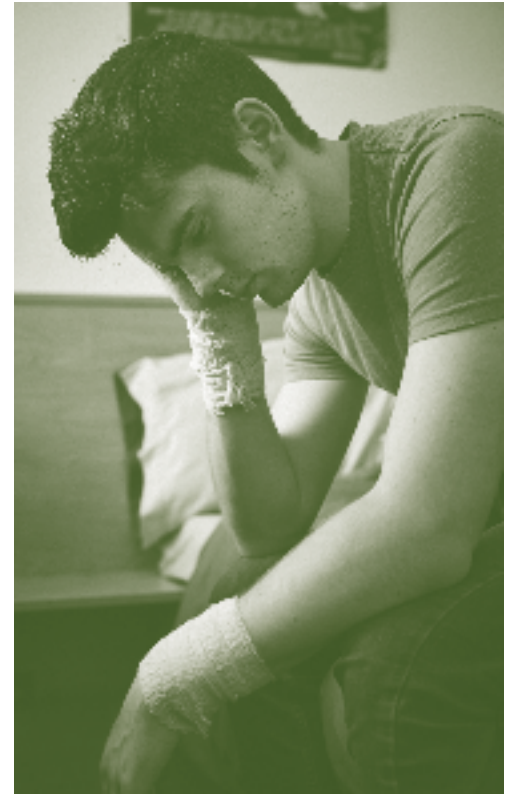
Ralph H. de Similien, M.D., M.S., M.Ed., Adamma Okorafor, M.D.

Analysis of statistical characteristics, sociodemographic variables, and treatment approaches.

23 A Tale of Shamans, Exorcism, and Finally Suicide: A Perspective From Two Worlds

Nandhini Madhanagopal, M.D.

A resident's cultural viewpoint on suicide in India and America.



© Shutterstock.com

EDITOR-IN-CHIEF

Katherine Pier, M.D.

SENIOR DEPUTY EDITOR

Rachel Katz, M.D.

DEPUTY EDITOR

Oliver Glass, M.D.

GUEST EDITOR

Gopalkumar Rakesh, M.D.

ASSOCIATE EDITORS

Gopalkumar Rakesh, M.D.

Janet Charoensook, M.D.

MEDIA EDITOR

Michelle Liu, M.D.

CULTURE EDITOR

Aparna Atluru, M.D.

STAFF EDITOR

Angela Moore

EDITORS EMERITI

Rajiv Radhakrishnan, M.B.B.S., M.D.

Misty Richards, M.D., M.S.

Arshya Vahabzadeh, M.D.

Monifa Seawell, M.D.

Sarah M. Fayad, M.D.

Joseph M. Cerimele, M.D.

Molly McVoy, M.D.

Sarah B. Johnson, M.D.

Suicidal Behavior: A Distinct Psychobiology?

Naji C. Salloum, M.D.

Over 800,000 suicide-related deaths are reported around the world every year, with one person committing suicide every 40 seconds (1). Extensive work aimed at improving suicide prevention has yet to deliver objective tools for better assessment and management of suicide risk. One of the hurdles has been a lack of full understanding of the underlying biological manifestations that lead to suicide. In order to conceptualize this complex phenomenon, the stress-diathesis model was proposed almost two decades ago and is still regarded as the most widely accepted hypothesis for understanding suicide. It describes suicidal behavior as the interplay between a stressor (e.g., an acute psychiatric condition or a negative psychosocial event) and an individual's vulnerability to experience suicidality. This vulnerability, or diathesis, potentially results from a genetic predisposition and epigenetic mechanisms related to early-life adversity (2, 3). Within this framework, substantial effort has been made to uncover the pathophysiology that would account for this diathesis. Thus far, findings are indicating that the suicide biological architecture consists of a distinct network of interrelated neural systems at play. Further study may unravel a holistic psychobiological foundation for suicidal behavior. This in turn would add support to the latter as being a discrete psychiatric disorder, a point that was suggested in DSM-5 and will be discussed in more details later. The present article reviews the most salient systems involved in the neurobiology of suicidal behavior and the interactions between them.

SEROTONERGIC SYSTEM

Owing to its major role in mediating impulsive aggression and affective instability, serotonin has already been linked to

multiple psychopathologies and is heavily involved in the biological mechanism of suicide (4). Earlier studies have established a robust association between low CSF 5-hydroxyindoleacetic acid (5-HIAA), the main metabolite of serotonin and a reliable indicator of serotonin turnover, and suicide attempts, irrespective of psychiatric diagnoses (5). In contrast, suicide victims were found to have elevated tryptophan hydroxylase 2, the rate-limiting enzyme in serotonin synthesis in the brain, decreased serotonin transporter binding affinity, and increased serotonin neurons and concentration in the brainstem, perhaps compensating for low serotonergic activity (4). Taken together, these findings imply a defective transmission of serotonin (6). One proposed explanation is the elevated 5-HT_{1A} autoreceptors binding affinity in the dorsal raphe nucleus of depressed suicide victims, which leads to decreased serotonin firing, and has been shown to predict more lethal suicidal behavior in a prospective cohort (7).

HYPOTHALAMIC PITUITARY ADRENAL (HPA) AXIS

The HPA axis has also been heavily researched in relation to suicide, owing to its role in the stress-response system. To assess HPA axis dysregulation, the dexamethasone suppression test has been most commonly used, in which failure to suppress cortisol constitutes evidence for a hyperactive HPA axis. Several studies have found associations between dexamethasone suppression test non-suppression and a history of suicide attempts, higher hospitalization rate for suicide attempts, completed suicides, and a 14-fold higher risk for completed suicide (8–11).

Cortisol levels have also been used as a proxy measure for HPA axis activity. Both elevated and blunted levels have been associated with suicide attempts (12). Inter-

estingly, a recent meta-analysis concluded that the direction of the association between cortisol and suicide attempts may be related to age (13), with higher levels in samples with a mean age under 40 compared with lower levels in samples with a mean age over 40 (13). While this finding may further elucidate the nature of the relationship between cortisol and suicide, it is important to remain cognizant of the marked methodological variability across studies included in this meta-analysis.

NEUROINFLAMMATION

Since the emergence of interferon-induced suicidal ideation and depression (14), the role of the inflammatory system in suicide has been garnering a lot of attention. Disturbances in cytokine levels have been associated with suicidality. The most consistent finding has been an elevated pro-inflammatory IL-6 level in blood and postmortem brain samples of individuals with suicidality compared with individuals without suicidality and healthy controls (15, 16).

Microgliosis, another indicator of neuroinflammation, has also been associated with suicide. In one study, a higher proportion of activated microglia and perivascular macrophage density was observed in the dorsal anterior cingulate white matter of postmortem brain samples from suicide deaths compared with matched nonpsychiatric deaths (17).

Additionally, large case-control studies found that omega-3 fatty acids, known for their anti-inflammatory properties, are low in individuals who attempted or completed suicide. Low levels also predicted future attempts in a prospective cohort (4). Although further studies are needed to confirm the association between omega 3 fatty acids and suicide, inflammation is nonetheless proving to be an area requiring further investigation.

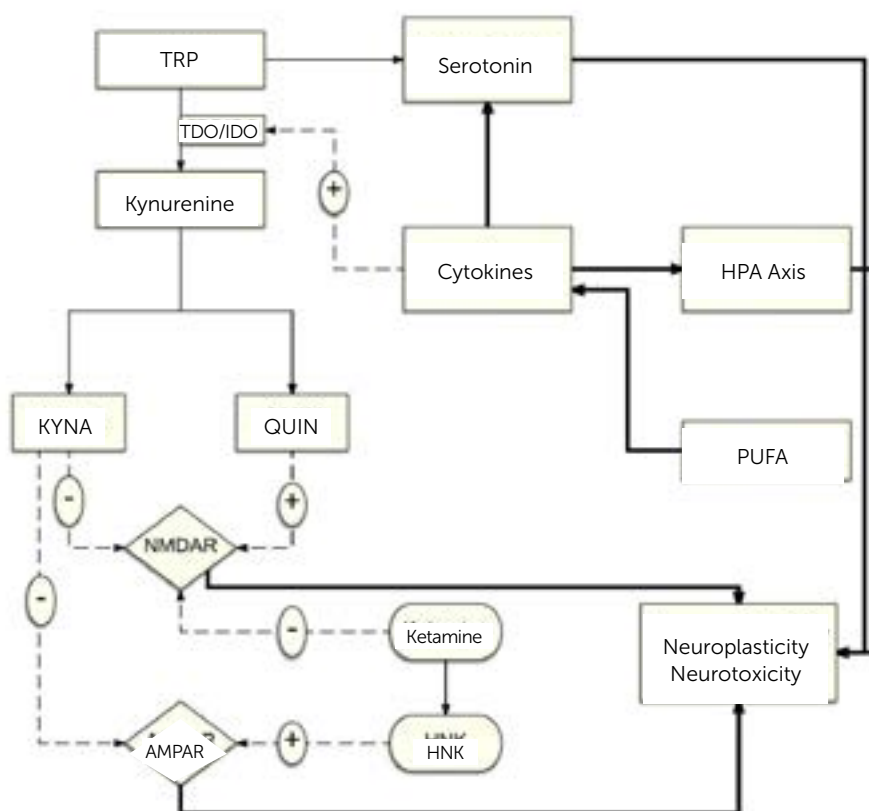
KYNURENINE PATHWAY

The kynurenine pathway, the main metabolic pathway for the degradation of tryptophan (see Figure 1), has made a relatively newer introduction to the suicide literature in the last few years. Quinolinic acid (QUIN), one of the main metabolites, is considered neurotoxic due to its activation of *N*-methyl-D-aspartate (NMDA) receptors, as well as the increased release of glutamate and inhibition of glutamate uptake, leading to glutamatergic neurotransmission overactivation. Another important metabolite, kynurenic acid (KYNA), is known for its neuroprotective, anticonvulsive, and antioxidant properties and acts mainly through NMDA, alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) and kainate receptors antagonism (18). A significantly higher level of QUIN in the CSF has been associated with suicide intent and attempts, with QUIN/KYNA ratio, otherwise known as the neurotoxic ratio, being 2-fold higher in suicide attempters compared with healthy controls. Furthermore, these abnormal QUIN levels were still elevated 2 years post-attempt. These findings, along with the fact that ketamine, an NMDA antagonist, has been demonstrated to have antisuicidal properties, make the kynurenine system worthy of further exploration (18).

NEUROPLASTICITY

Neuroplasticity refers to the processes by which the brain, through neurotrophic factors, undergoes functionally necessary adaptations in response to internal or environmental stimuli. Low levels of brain-derived neurotrophic factor (BDNF), a crucial mediator for neuronal survival and growth, and its receptor tropomyosin receptor kinase B or TrkB, have been found in suicide victims irrespective of the underlying psychiatric disorder (4), in some cases as a result of epigenetic changes (19). Reduced volume in crucial areas of the brain, such as the ventrolateral prefrontal cortex, has also been reported in patients with previous suicide attempt (20). These findings indicate increased neuronal loss and decreased neurogenesis in suicide.

FIGURE 1. Interplay Between the Biological Systems Associated With Suicide^a



^a This figure highlights the interplay between the different neurobiological systems shown to be associated with suicidal behavior. AMPAR: α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid receptor; HNK: (2R,6R)-hydroxynorketamine; HPA: hypothalamic-pituitary-adrenal; IDO: indoleamine 2,3-deoxygenase; KYNA: kynurenic acid; NMDAR: N-methyl-D-aspartate receptor; PUFA: polyunsaturated fatty acid; TDO: tryptophan 2,3-dioxygenase; TRP: tryptophan; QUIN: quinolinic acid.

INTERPLAY OF BIOLOGICAL SYSTEMS

As previously mentioned, a common suicide diathesis irrespective of psychiatric diagnosis has been suggested. This would require an underlying coherent pathophysiological mechanism that manifests itself into suicidal behavior (6). Therefore, a closer look at the dynamic and complex interplay between the different implicated systems is crucial to a better understanding of this machinery (Figure 1).

Neuroinflammation, by way of inflammatory cytokines, may contribute to the pathophysiology of suicide through different mechanisms, including stimulation of the HPA axis and dysregulation of the serotonin system (21, 22). Inflammatory cytokines also activate the enzyme indoleamine 2,3-deoxygenase, which catalyzes the initial step of the kynurenine pathway (23). Although yet unstudied, this may theoretically con-

tribute to decreased tryptophan metabolism into serotonin (16, 24). Additionally, downstream along the kynurenine pathway, QUIN's neurotoxic effects through NMDA receptor agonism might offer an explanation for the antisuicidal actions of NMDA antagonist ketamine. Moreover, in recent findings, ketamine's metabolite, (2R,6R)-hydroxynorketamine, has been shown to exert antidepressant effects through AMPA receptor activation (25). This in turn leads to BDNF release (26), which makes this pathway a plausible therapeutic target for antidepressants, as well as antisuicidal agents. Neurogenesis has also been observed to be significantly affected by different systems' dysfunctions, including dysregulation of the HPA axis and impaired serotonin transmission (6). Much research needs to be conducted to understand the precise nature of these interactions and how they fit into a coherent scheme.

CONCLUSIONS

The neurobiology of suicide is a highly complex phenomenon involving multiple interconnected neural systems. However, suicide research faces many limitations: small sample sizes, absence of animal models for suicidal behavior, phenotypic heterogeneity of suicidality, and exclusion of suicidal subjects from clinical trials for safety purposes. Additionally, the interplay between biological systems remains largely unstudied.

Considerations for the addition of suicidal behavior disorder as a separate DSM-5 diagnosis were made in an effort to resolve some of the issues mentioned above. Notably, suicidal behavior fulfills the criteria for diagnostic validity determined by Robins and Guze (27) and has been demonstrated to be a reliable diagnosis (28). Reframing our concept of suicide as a separate disorder may lead to a higher screening and detection of suicidal behavior in clinical practice and a common nomenclature for a well-defined phenotype. It may also help expand suicide research to analyses of large national or insurance data sets, providing a remedy to current small sample sizes (28).

With the advances in genetics, variants associated with psychiatric disorders are being detected at unprecedented rates, shedding light on novel biological systems that could explain the phenotype in question. Neuroimaging also constitutes a valuable tool for identifying the premise of the suicide diathesis on a circuitry level. As resources continue to be allocated to genetics and brain imaging research, the future for a better understanding of suicide and its prevention looks promising.

Dr. Salloum is a fourth-year resident in the Department of Psychiatry, Washington University St. Louis.

REFERENCES

1. World Health Organization: Preventing suicide: a global imperative. Geneva, Switzerland, World Health Organization, 2014
2. Mann JJ, Waternaux C, Haas GL, et al: Toward a clinical model of suicidal behavior in psychiatric patients. *Am J Psychiatry* 1999; 156(2):181-189
3. Turecki G, Ernst C, Jollant F, et al: The neurodevelopmental origins of suicidal behavior.

KEY POINTS/CLINICAL PEARLS

- The stress-diathesis model for suicide refers to an individual's vulnerability to suicidal behavior in the context of psychosocial stress or an acute psychiatric condition.
- The psychobiological nature of suicidal behavior consists of a distinct interplay between multiple neural systems, supporting the idea of suicidal behavior as a discrete psychiatric disorder.
- Suicidal behavior satisfies the criteria for diagnostic validity and has been demonstrated to represent a reliable diagnosis.

- Trends Neurosci 2012; 35(1):14-23
4. Oquendo MA, Sullivan GM, Sudol K, et al: Toward a biosignature for suicide. *Am J Psychiatry* 2014; 171(12):1259-1277
5. Träskman L, Asberg M, Bertilsson L, et al: Monoamine metabolites in CSF and suicidal behavior. *Arch Gen Psychiatry* 1981; 38(6):631-636
6. van Heeringen K, Mann JJ: The neurobiology of suicide. *Lancet Psychiatry* 2014; 1(1):63-72
7. Oquendo MA, Galfalvy H, Sullivan GM, et al: Positron emission tomographic imaging of the serotonergic system and prediction of risk and lethality of future suicidal behavior. *JAMA Psychiatry* 2016; 73:1048-1055
8. Jokinen J, Nordström P: HPA axis hyperactivity and attempted suicide in young adult mood disorder inpatients. *J Affect Disord* 2009; 116(1-2):117-120
9. Yerevanian BI, Feusner JD, Koek RJ, et al: The dexamethasone suppression test as a predictor of suicidal behavior in unipolar depression. *J Affect Disord* 2004; 83(2-3):103-108
10. Coryell W, Schlessler MA: Suicide and the dexamethasone suppression test in unipolar depression. *Am J Psychiatry* 1981; 138(8):1120-1121
11. Coryell W, Schlessler M: The dexamethasone suppression test and suicide prediction. *Am J Psychiatry* 2001; 158(5):748-753
12. Mann JJ, Currier D: A review of prospective studies of biologic predictors of suicidal behavior in mood disorders. *Arch Suicide Res* 2007; 11(1):3-16
13. O'Connor DB, Ferguson E, Green JA, et al: Cortisol levels and suicidal behavior: a meta-analysis. *Psychoneuroendocrinology* 2016; 63:370-379
14. Dieperink E, Ho SB, Tetrack L, et al: Suicidal ideation during interferon-alpha2b and ribavirin treatment of patients with chronic hepatitis C. *Gen Hosp Psychiatry* 2004; 26(3):237-240
15. Black C, Miller BJ: Meta-analysis of cytokines and chemokines in suicidality: distinguishing suicidal versus nonsuicidal patients. *Biol Psychiatry* 2015; 78(1):28-37
16. Ganança L, Oquendo MA, Tyrka AR, et al: The role of cytokines in the pathophysiology of suicidal behavior. *Psychoneuroendocrinology* 2016; 63:296-310
17. Torres-Platas SG, Cruceanu C, Chen GG, et al: Evidence for increased microglial priming and macrophage recruitment in the dorsal anterior cingulate white matter of depressed suicides. *Brain Behav Immun* 2014; 42:50-59
18. Bryleva EY, Brundin L: Kynurenine pathway metabolites and suicidality. *Neuropharmacology* 2017; 112(Pt B):324-330
19. Ernst C, Deleva V, Deng X, et al: Alternative splicing, methylation state, and expression profile of tropomyosin-related kinase B in the frontal cortex of suicide completers. *Arch Gen Psychiatry* 2009; 66(1):22-32
20. Ding Y, Lawrence N, Olié E, et al: Prefrontal cortex markers of suicidal vulnerability in mood disorders: a model-based structural neuroimaging study with a translational perspective. *Transl Psychiatry* 2015; 5:e516
21. Dunn AJ: Cytokine activation of the HPA axis. *Ann N Y Acad Sci* 2000; 917:608-617
22. Zhu CB, Blakely RD, Hewlett WA: The proinflammatory cytokines interleukin-1beta and tumor necrosis factor-alpha activate serotonin transporters. *Neuropsychopharmacology* 2006; 31(10):2121-2131
23. Mándi Y, Vécsei L: The kynurenine system and immunoregulation. *J Neural Transm (Vienna)* 2012; 119(2):197-209
24. Brundin L, Bryleva EY, Thirtamara Rajamani K: Role of inflammation in suicide: from mechanisms to treatment. *Neuropsychopharmacology* 2017; 42(1):271-283
25. Zanos P, Moaddel R, Morris PJ, et al: NMDAR inhibition-independent antidepressant actions of ketamine metabolites. *Nature* 2016; 533(7604):481-486
26. Lepack AE, Fuchikami M, Dwyer JM, et al: BDNF release is required for the behavioral actions of ketamine. *Int J Neuropsychopharmacol* 2015; 18(1)
27. Robins E, Guze SB: Establishment of diagnostic validity in psychiatric illness: its application to schizophrenia. *Am J Psychiatry* 1970; 126(7):983-987
28. Oquendo MA, Baca-Garcia E: Suicidal behavior disorder as a diagnostic entity in the DSM-5 classification system: advantages outweigh limitations. *World Psychiatry* 2014; 13(2):128-130

Supporting Residents in the Wake of Patient Suicide

Charles A. Whitmore, M.D., M.P.H.

Jenna Cook, M.D.

Lucas Salg, M.D.

CASE VIGNETTE

A patient arrived on the psychiatric unit after being transferred from the medicine service, where he had been treated in the intensive care unit following a suicide attempt by polypharmacy ingestion. “Mr. M” gave few details about his life and was never consistent with the team about why he tried to commit suicide. The treatment team worked with him and his family for a week, during which time he was diagnosed with depression, cognitive-behavioral therapy was initiated, and a new medication for depression was started. Multiple safety evaluations were performed during the patient’s hospitalization and prior to discharge, but Mr. M consistently denied thoughts or urges to kill himself. His family visited regularly and looked forward to having him come home. After a thorough safety plan was created and reviewed with his family, he was discharged to his family’s care on a Friday afternoon. Later that day, he committed suicide at home. A debrief session was scheduled with staff at the hospital but did not occur until the resident had rotated off service onto a month of night float.

Those who practice medicine are often faced with the inevitability of death, often at untimely or tragic times. Psychiatry is no exception, and patient suicide is an unfortunately common cause of death (1). A review of the literature (2) found that between 31% and 69% of psychiatry residents experience patient suicide as a trainee. Experiencing a patient committing suicide during residency may induce symptoms of acute stress disorder, posttraumatic stress disorder (1), shame, guilt, self-doubt, and

professional dissatisfaction (3–5). Even though patient suicide is a known aspect of psychiatry, its impact on trainees is palpable and at times severe.

The experience of suicide can be particularly difficult for new trainees. It can leave residents feeling isolated and questioning their abilities. Fear of being seen as weak or incompetent may cause residents to isolate and internalize the loss, leading them to feel that they are the only ones who have lost a patient. Although there is no direct connection between experiencing a patient suicide and developing burnout, physicians experience a high rate of provider fatigue during their careers, as evidenced by up to 60% of physicians reporting symptoms of burnout and professional distress (6–9). Symptoms of burnout and provider fatigue result in poor patient care, patient dissatisfaction, more frequent medical errors, and more frequent malpractice lawsuits (8–10).

PATIENT SUICIDE AT THE UNIVERSITY OF COLORADO

Over the past academic year, there were at least four patient suicides experienced by residents at the University of Colorado’s Psychiatry Resident Program. Given the documented impact such events can have on trainees (1–5), it became clear that residents need to learn about all of the resources available to them when dealing with patient suicide during intern orientation. Furthermore, there is literature supporting the creation of curricula teaching residents about patient suicide (11).

We constructed a new curriculum about patient suicide designed to help incoming intern residents feel more supported,

less isolated, and better informed about how our institution supports residents when one of their patients attempts or completes suicide. We then assessed the influence of this revised curriculum on the attitudes of new intern psychiatry residents.

METHOD

Curriculum Details

To better prepare incoming residents, the topic of patient suicide is now addressed during intern orientation. Through collaboration between residents who have experienced patient suicide and the director of student mental health, a 4-hour course was developed to address both safety assessment and patient suicide. The course discusses safety assessments, a packet of resident resources, and the study institution’s response to patient suicide. This course also includes two written cases and a role-playing exercise, which are each followed by a group discussion. At the end of the course, a panel of psychiatrists with different levels of experience discusses their experiences with patient suicide. The panel includes two residents, two psychiatrists in practice, and one retired psychiatrist. Incoming interns are then given the opportunity to ask questions for the remainder of the session.

MEASURING THE EFFECTIVENESS OF THE INTERN ORIENTATION INITIATIVE

The effectiveness of the orientation session was evaluated with pre- and post-session surveys completed by all 12 incoming interns. The survey included 11 items graded on a Likert scale, as well

TABLE 1. Survey Questions and Participant Responses Before and After Completing the Revised Patient Suicide Curriculum During Intern Orientation

Response	Pre-Session	Post-Session	Change	p
I had adequate opportunity to learn about evidence-based models of supporting physicians during periods of high stress during medical school.	3.17	3.25	0.08	0.42
I would have benefited from additional educational activities related to wellness and physician support models during medical school.	3.42	3.92	0.50	0.08
I am aware of the resources available to residents at the University of Colorado School of Medicine.	1.96	4.00	2.04	<0.001
I know the process of accessing resources in the psychiatry residency program to help me when I feel overwhelmed or stressed beyond my typical ability to cope.	2.17	4.08	1.92	<0.001
I am confident that I can complete a thorough safety assessment of a patient and can apply this to clinical decisions about their care.	3.25	3.67	0.42	0.08
I know the psychiatry residency program's process for supporting resident who experience the suicide of a patient.	1.75	4.42	2.67	<0.001
I would pursue my own mental health services if I thought they would be beneficial.	4.58	4.75	0.17	0.20
I am confident in my ability to handle the stress associated with the suicide of one of my patients.	2.83	3.33	0.50	0.04
I am confident that I would be able to discuss a patient suicide with a peer.	3.92	4.17	0.25	0.19
I feel competent to provide support for a peer who has had a patient commit suicide.	3.21	4.00	0.79	0.01
I am confident that I could refer a peer for additional support in the setting of a patient suicide.	3.33	4.25	0.92	<0.001

^a 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree. Findings of statistical significance are indicated in bold.

as a question to ascertain whether the intern had previously experienced a patient suicide. Within this scale, a score of 1 corresponded with strongly disagree, 2 with disagree, 3 with neutral, 4 with agree, and 5 with strongly agree. Feedback on the quality of the session was also obtained with an additional post-session survey. Data from the surveys were compiled, and question scores from Likert scales were averaged for pre- and post-session surveys to determine possible changes to future sessions. Compiled scores for each question were also compared using an unmatched, one-tailed t-test to determine significance of change.

RESULTS

Following the orientation session, there was no significant change in interns' confidence in their ability to complete a thorough safety assessment ($p=0.08$) (Table 1). Significant improvement occurred in awareness of resources available to residents ($p<0.001$), the process of accessing these resources in times of stress ($p<0.001$), and awareness of the program's process for supporting resi-

dents who experience patient suicide ($p<0.001$). Furthermore, incoming interns had a significant increase in their confidence that they could handle a patient suicide event ($p=0.04$), support a peer through a patient suicide ($p=0.01$), or provide referrals to peers in need of additional support after experiencing the suicide of a patient ($p<0.001$). There was no significant change in participants' interest in pursuing their own mental health care, their rated ability to discuss patient suicide with a peer, or their feelings about previous education regarding physician support. No new intern reported having experienced patient suicide.

DISCUSSION

The possibility of patient suicide is ever present for psychiatrists and can become a troubling reality even early in the intern year, before newly anointed MDs have had a chance to develop their identity as physicians. For this reason, it is vitally important to make sure 1) incoming residents are capable and prepared to perform appropriate safety assessments and 2) that they are aware of the support

system available to them should they experience a patient suicide. As a result of the experiences of members of the 2015 intern class at the study institution, it became clear that more could be done to prepare new residents for how to deal with a patient suicide, in addition to refining and strengthening the available support system.

LIMITATIONS

The limitations of this analysis include its small sample size, inclusion of results from a single year, and lack of survey results from prior-year residents. Additionally, these results are only applicable to the University of Colorado interns and may not be applicable to other programs. Finally, given the importance of this curriculum, it would not be ethical to randomize participation between the current and prior curriculum for the purposes of comparison. Instead, continued assessment and analysis of participant responses over multiple years will be required in order to understand the impact this curriculum may have on residents following patient suicide experienced during residency.

KEY POINTS/CLINICAL PEARLS

- Patient suicide can have a profoundly negative, isolating impact on psychiatry trainees.
- Experiencing patient suicide can increase the risk of provider burnout, which can have a significantly negative impact on patient outcomes and the quality of their care.
- Discussing patient suicide with interns during orientation can significantly improve their understanding of how the program supports residents following a patient's suicide and confidence about what to do if one of their patients commits or attempts suicide.

FUTURE DIRECTIONS

The continued goal of this and similar projects is to improve the mental health of psychiatry residents at all institutions during all years of training. To that end, we will continue to address the issue of education and support surrounding patient suicide in the coming years. First, we plan to continue with the interventions above, making improvements based on resident and faculty feedback as appropriate. For example, we will attempt to improve education regarding safety assessment to improve interns' confidence that this is something they can do upon starting their rotations. When residents do experience patient suicide, they will have the voluntary opportunity to discuss how this loss affected them, whether they felt supported, whether the program followed their own policies, and how we can improve didactics about patient suicide during training. Using feedback from affected residents, as well as the annual survey results dur-

ing intern orientation, we will be able to make adjustments to the entire curriculum to improve the ways our program supports residents in the wake of patient suicide. Furthermore, we will collaborate with each clinical site to determine whether there are site-specific protocols in place that should be added to the patient suicide checklist or site-specific orientations.

Drs. Whitmore, Cook, and Salg are second-year residents in the Department of Psychiatry, University of Colorado, Aurora, Colo.

All authors contributed equally to this study.

The authors thank the members of the University of Colorado Suicide Task Force and Rachel Davis, M.D., Director of Student Mental Health, University of Colorado School of Medicine, for supervising the revised patient suicide didactics during intern resident orientation.

REFERENCES

1. Ruskin R, Sakinofsky I, Bagby RM: Impact of patient suicide on psychiatrists and psychiatric trainees. *Acad Psychiatry* 2004; 28(2):104-110
2. Puttagunta R, Lomax ME, McGuinness JE: What is the prevalence of the experience of death of a patient by suicide among medical students and residents? A systematic review. *Acad Psychiatry* 2014; 38(5):538-341
3. Gitlin M: A psychiatrist's reaction to a patient's suicide. *Am J Psychiatry* 1999; 156(10):1630-1634
4. Lafayette JM, Stern TA: The impact of a patient's suicide on psychiatric trainees: a case study and review of the literature. *Harv Rev Psychiatry* 2004; 12(1):49-55
5. Coverdale JH, Roberts LW, Louie AK: Encountering patient suicide: emotional responses, ethics, and implications for training programs. *Acad Psychiatry* 2007; 31(5):329-332
6. Shanafelt T, Habermann T: Medical residents' emotional well-being. *JAMA* 2002; 288(15):1846-1847
7. Spickard A Jr, Gabbe SG, Christensen JF: Mid-career burnout in generalist and specialist physicians. *JAMA* 2002; 288(12):1447-1450
8. Shanafelt TD, Sloan JA, Habermann TM: The well-being of physicians. *Am J Med* 2003; 114(6):513-519
9. Shanafelt TD, West C, Zhao X, et al: Relationship between increased personal well-being and enhanced empathy among internal medicine residents. *J Gen Intern Med* 2005; 20(7):559-564
10. Crane M: Why burned-out doctors get sued more often. *Med Econ* 1998; 75(10):210-212, 215-218
11. Schwartz AC, Kaslow NJ, McDonald WM: Encountering patient suicide: a requirement of the residency program curriculum. *Acad Psychiatry* 2007; 31(5):338-339

Current Challenges in the Management of LGBT Suicide

Rafik Sidaros, M.D.

Reports of elevated risk of suicide in the LGBT community have existed for four decades. LGBT youths are four times more likely, and questioning youths are three times more likely, to attempt suicide compared with their heterosexual peers (1). Racial minority (African American and Hispanic) LGBT youths are more severely affected, at nearly twice the suicide attempt rate (2). Given that death records do not routinely mention the deceased's sexual orientation, the actual numbers are likely to be higher. Additionally, gay and lesbian individuals are twice as likely to experience suicidal ideation compared with their heterosexual counterparts. It is noteworthy that gay/bisexual men attempt suicide more than lesbian/bisexual women, contrary to gender patterns in the heterosexual population (3).

RISK FACTORS

There is a limited understanding of which facets of sexual orientation are most related to suicidal behavior. Data suggest that mood and anxiety disorders (which are potential harbingers of suicidal behavior) are more strongly associated with an LGBT *identity* rather than any particular sexual behavior (4). This is echoed by the finding that adolescents who experience same-sex attraction or behavior yet self-identify as heterosexual do not manifest an elevated risk of suicidal behavior compared with their peers (5).

Although some studies suggest that LGBT suicide follows the national trend of occurring more frequently in adolescents and young adults (6), there is some evidence that suicide in sexual minorities is more widely distributed across the lifespan, suggesting that suicidal attempts are more closely associated with the ages at which gay men and women

acknowledge and disclose their sexual orientation ("come out"), rather than their chronological age (7). An association exists between suicidal attempts in LGBT individuals and major depression, generalized anxiety disorder, and alcohol/substance use disorders (8). Nonetheless, psychiatric diagnoses alone do not fully explain the elevated risk of suicidal behavior in the LGBT population. The risk remains elevated (two- to threefold) compared with heterosexual individuals, even after controlling for psychiatric morbidities.

MINORITY STRESS

The prejudice faced by sexual minorities is posited to account, at least in part, for their elevated risk of suicidal behavior. Literature on minority stress (9) broadly separates the stressors to which minorities are exposed into objective (discriminatory or prejudice events) and subjective, (i.e., when stigma and negative attitudes seep into the self-image of an LGBT individual, for example, internalized homophobia, a state that has been linked to suicidal ideation) (10). The distinction between these two types of stressors serves to delineate institutional remedies on a societal level (such as awareness campaigns and policy changes) and individual remedies that address, among other things, cognitive appraisal of stress and stress-coping techniques. Among objective stressors, rejection at home proves to be the most dangerous and therefore merits a special focus by clinicians and researchers. LGBT young adults (ages 21–25) who experience frequent rejecting behaviors by their parents or caregivers during adolescence are over eight times more likely to attempt suicide than those with accepting parents (11). The long-term repercussions of paren-

tal rejection are most elucidated by the fact that up to 40% of homeless youths in the United States are LGBT (12). This is particularly harmful when combined with the effects of bullying at school and on social media, as well as victimization by hate-crime violence. While data suggest that LGBT individuals are more likely to be consumers of mental health services, several hurdles exist that affect the provision of adequate care in this population. Negative attitudes of some providers toward LGBT patients and lack of providers knowledgeable in LGBT lifestyle and mental health issues are major contributors to health disparities noted in these patients (13). Combatting discrimination against sexual minorities therefore emerges as a matter of public health.

TRANSGENDER ISSUES

Information on the suicidal risk in transgender individuals tends to focus on those who seek hormonal treatment and/or gender confirmation surgery, due to greater access of researchers to this subgroup of the transgender population. However, the rates of suicide attempts appear to be somewhat comparable between transgender people seeking surgery (19%–25%) (14) and self-identified transgender individuals (with one in three reporting at least one lifetime attempt) (15). The factors underlying the suicidal risk in transgender individuals are not dissimilar from those in gay and lesbian people. These include an association with depression, anxiety, and substance use (16), as well as parental rejection, in transgender youths (17). Most troubling is the weight of stigma and discrimination in this group. One in two transgender individuals will experience an adverse job action because of transgender sta-

tus. This includes being denied employment, being denied a promotion, or being fired. Transgender members of communities of color are especially vulnerable. The majority of transgender people are likely to experience verbal abuse or being referred to as the wrong gender at the workplace on purpose. Overall, transgender individuals are twice as likely to be unemployed as the general population (18).

POSITIONS ON THERAPY

The American Psychiatric Association has taken a clear stance against conversion/reparative or any therapy aimed at changing sexual orientation, stating that it “opposes any psychiatric treatment, such as reparative or conversion therapy which is based upon the assumption that homosexuality per se is a mental disorder or based upon the a priori assumption that the patient should change his/her sexual homosexual orientation,” (19) and further recommending that “ethical practitioners refrain from attempts to change individuals’ sexual orientation, keeping in mind the medical dictum to first, do no harm” (19). The American Psychological Association has adopted a similar position, given that efforts to change orientation are unlikely to succeed and carry a risk of psychological harm (20). For children experiencing gender discordance, the American Academy of Child and Adolescent Psychiatry has asserted that whether treatment modalities aim to limit or to tolerate gender-discordant feelings and behaviors, further evidence on the long-term risks and benefits of these interventions is needed before any treatment can be endorsed (American Academy of Child and Adolescent Psychiatry assessment principles can be accessed online [http://www.lgbthealtheducation.org/wp-content/uploads/SO.GD_MH-in-Children-and-Adolescents.pdf]). However, for adolescents and adults who experience persistent gender dysphoria, the goal of treatment ought to focus on helping them make developmentally appropriate decisions about sex reassignment and managing any associated psychiatric morbidity (21).

KEY POINTS/CLINICAL PEARLS

- Individuals who identify as LGBT are at a higher risk of suicidal ideation and behavior than their heterosexual counterparts.
- The association between LGBT suicide and major depression, generalized anxiety disorder, and alcohol/substance use disorders does not fully account for the elevated suicide risk.
- Minority stressors can be objective or subjective; parental rejection and internalized homophobia are directly linked to an increased risk of suicidal ideation and behavior.
- LGBT-specific treatment programs and suicide prevention efforts are greatly needed. Important patient resources include the Trevor Project; the Gay, Lesbian and Straight Education Network; Services and Advocacy for Gay, Lesbian, Bisexual and Transgender Elders; and Parents, Families and Friends of Lesbian, Gay, Bisexual and Transgender People.

INTERVENTIONS

The broad initiative launched by the American Foundation for Suicide Prevention has yielded expert consensus and recommendations on addressing the suicide risk in LGBT individuals (22). It underscores the paucity of existing initiatives aimed at improving help seeking in LGBT people and the need for provision of culturally appropriate mental health services tailored for this population. In this regard, the Trevor Project represents a unique model incorporating the only national crisis and suicide prevention hotline for LGBT and questioning youths, as well as in-school workshops, online educational resources, and advocacy work for public policy changes to combat LGBT stigma. Mainstream suicide prevention interventions still have ways to go in order to become more LGBT inclusive. Other national organizations serving the LGBT population and offering important resources for LGBT patients include GLSEN [the Gay, Lesbian and Straight Education Network], SAGE [Services and Advocacy for Gay, Lesbian, Bisexual and Transgender Elders], and PFLAG [Parents, Families and Friends of Lesbian, Gay, Bisexual and Transgender People] (23). Certain initiatives such as the Family Acceptance Project based at San Francisco State University are focusing on addressing parental rejection of gay youths by using evidence-based family interventions. New efforts in some European countries are engendering LGBT-specific behavioral health

interventions that are fostered by LGBT community organizations.

Therefore, physicians and other clinicians are positioned to make important contributions to mitigating the psychiatric vulnerabilities of LGBT patients. Patients require clinicians that are not only clinically competent in screening, diagnosis, and treatment planning, but also mindful at managing any countertransference they might have toward LGBT patients.

From a training perspective, the management of psychiatric morbidities and suicidal risk in LGBT patients is not a standard item in clinical and didactic teaching in psychiatry residencies. The Group for the Advancement of Psychiatry developed an LGBT mental health syllabus for psychiatry residents, which is available online (www.aglp.org/gap). It includes a brief history of the relationship between psychiatry and homosexuality. It also covers clinically relevant topics such as sexual history taking in LGBT patients. It addresses medical issues and psychotherapy concerns, as well as ethical considerations in daily practice. The Association of American Medical Colleges has produced a landmark comprehensive resource for medical educators and students titled “Implementing Curricular and Institutional Climate Changes to Improve Health Care for Individuals Who Are LGBT, Gender Nonconforming, or Born with DSD” (difference of sex development), which is available online (<http://offers>).

aamc.org/lgbt-dsd-health). Finally, the Gay and Lesbian Medical Association has compiled a guide for fostering an inclusive environment at schools of health professions titled “Recommendations for Enhancing the Climate for LGBT Students and Employees in Health Professional Schools,” also available online (<http://www.glma.org/index.cfm?fuseaction=Page.viewPage&pageId=1027&grandparentID=534&parentID=1010&nodeID=1>).

Dr. Sidaros is a forensic psychiatry fellow in the Division of Law and Psychiatry, Yale University School of Medicine, New Haven, Conn.

REFERENCES

- Centers for Disease Control and Prevention: Sexual Identity, Sex of Sexual Contacts, and Health-Risk Behaviors Among Students in Grades 9–12: Youth Risk Behavior Surveillance. Atlanta, Centers for Disease Control and Prevention, 2011
- Centers for Disease Control and Prevention: Youth Risk Behavior Surveillance. Atlanta, Centers for Disease Control and Prevention, 2011
- King M, Semlyen J, Tai S, et al: A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay, and bisexual people. *BMC Psychiatry* 2008; 8(70)
- Bostwick WB, Boyd CJ, Hughes TL: Dimensions of sexual orientation and the prevalence of mood and anxiety disorders in the United States. *Am J Pub Health* 2010; 100(3): 468–475
- Zhao Y, Montoro R, Igartua K, et al: Suicidal ideation and attempt among adolescents reporting “unsure” sexual identity or heterosexual identity plus same-sex attraction or behavior: Forgotten groups? *J Am Acad Child Adolesc Psychiatry* 2010; 49(2):104–113
- de Graaf R, Sandfort TG, ten Have M: Suicidality and sexual orientation: differences between men and women in a general population-based sample from the Netherlands. *Arch Sex Behav* 2006; 35(3):253–262
- Paul JP, Cantania J, Pollack L, et al: Suicide attempts among gay and bisexual men: lifetime prevalence and antecedents. *Am J Pub Health* 2002; 92(8):1338–1345
- Fergusson DM, Horwood J, Ridder EM: Sexual orientation and mental health in a birth cohort of young adults. *Psychol Med* 2005; 35:971–981
- Meyer IH: Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull* 2007; 129(5):674–697
- McLaren S: The interrelations between internalized homophobia, depressive symptoms, and suicidal ideation among Australian gay men, lesbians, and bisexual women. *J Homosexuality* 2016; 63(2):156–168
- Ryan C, Huebner D, Diaz R, et al: Family rejection as a predictor of negative health outcomes in White and Latino LGB young adults. *Pediatrics* 2009; 123:346–352
- Ray N: Lesbian, Gay Bisexual and Transgender Youth: An Epidemic of Homelessness. National Gay and Lesbian Task Force Policy Institute and the National Coalition for the Homeless, 2006
- Susan D, Cochran JGS, Mays VM: Prevalence of mental disorders, psychological distress, and mental health services use among lesbian, gay, and bisexual adults in the United States. *J Consult Clin Psychol* 2014; 71(1):53–61
- Dixen JM, Maddever H, van Maasdam J: Psychosocial characteristics of applicants evaluated for surgical gender reassignment. *Arch Sex Behavior* 1984; 13(3):269–276
- Xavier J, Honnold JA, Bradford J: The Health, Health-Related Needs, and Life-course Experiences of Transgender Virginians. Richmond, Va, Virginia Department of Health, 2007
- Clements-Nolle K, Marx R, Guzman R, et al: HIV prevalence, risk behaviors, health care use, and mental health status of transgender persons: implications for public health intervention. *Am J Pub Health* 2001; 91(6): 915–920
- Grossman AH, D’Augelli AR: Transgender youth and life threatening behaviors. *Suicide Life Threat Behav* 2008; 37(5): 527–537
- National Center for Transgender Equality: Preliminary findings: National Transgender Discrimination Survey, 2009. Washington, DC, National Center for Transgender Equality, 2009
- American Psychiatric Association: Position statement on therapies focused on attempts to change sexual orientation (reparative or conversion therapies). *Am J Psychiatry* 2000; 157(10):1719–1721
- American Psychological Association: Appropriate Therapeutic Responses to Sexual Orientation, Report of the American Psychological Association Task Force, 2009. Washington, DC, American Psychological Association, 2009, 84–86
- Adelson SL, et al: Practice parameter on gay, lesbian or bisexual sexual orientation, gender nonconformity, and gender discordance in children and adolescents. *J Am Acad Child Adolesc Psychiatry* 2012; 51:957–974
- Haas AP, Eliason M, Mays VM, et al: Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: review and recommendations. *J Homosexuality* 2011; 58(1):10–51
- Center SPR: Suicide Risk and Prevention for Lesbian, Gay, Bisexual, and Transgender Youth. Newton, Mass, Education Development Center, 2008

Suicide Rates in Cancer Patients in the Current Era in United States

Vivek Kumar, M.D.
Neha Chaudhary, M.D.
Parita Soni, M.B.B.S.
Prameeta Jha, M.B.B.S.

Suicide rates are higher in cancer patients when compared with the general population. This is secondary to an increase in psychosocial stress due to poor prognosis of cancer and treatment-related morbidity (1–4). Improvements in cancer treatment and increased awareness relating to the higher risk for suicide in this population has resulted in a decline in suicide rates in some European countries (1, 5). However, a population-based retrospective study conducted in England during 1996–2005 revealed no change in the suicide rates in cancer patients (6). In the United States, a previous study based on the Surveillance Epidemiology and End Results (SEER) database concluded that cancer patients diagnosed during 1973–2002 were at double the risk of committing suicide when compared with the general population (7). The awareness about higher risk of suicide among cancer patients increased in the United States after a series of events such as the development of the National Strategy for Suicide Prevention by the U.S. Surgeon General in 2001 (8, 9). Moreover, awareness regarding the psychosocial needs of cancer survivors increased following initiatives by the National Cancer Institute (10). The survival rates of cancer patients has increased due to advancements in cancer treatment (11). However, there are no data on the risk of suicide in cancer patients in more recent years. The purpose of the present study was to estimate the suicide rates in cancer patients compared with the general population in the United States from 2000 onward. We further compared suicide rates among patients diagnosed in 2000–2006 and 2007–2013.

METHOD

Cancer patients over the age of 20 diagnosed from 2000 to 2013 with a cause of death as “suicide and self-inflicted injury” were identified in the SEER database. The SEER program is a population-based registry that collects data on cancer patients from nine SEER registries in the United States. Patients were excluded if the cancer was diagnosed during autopsy.

The SEER files include data on sex, age at diagnosis, race, marital status, surgical and radiotherapy treatment, reasons for not receiving treatment, latency period, and year at diagnosis. Data on anatomic site, stage, date of last follow-up, and vital status at last follow-up were also available. Information on chemotherapy and comorbid medical and psychiatric conditions was not available.

Statistical Analyses

Standardized mortality ratios and 95% confidence intervals were calculated (12). The follow-up time was calculated for each patient in years from the time of diagnosis to suicide. The number of years were then added to estimate person-years. Statistical analyses were performed with SEER Stat 8.3.2 (Surveillance Research Program, National Cancer Institute, Bethesda, Md. [<https://seer.cancer.gov/data/>]).

RESULTS

The demographic data and tumor characteristics in the two study periods are summarized in Table 1. The mean age of patients who committed suicide was 67.6 years and 66.4 years

in 2000–2006 and 2007–2013, respectively. A total of 1,495 suicides were identified in 1,486,140 eligible cancer patients followed for 6,346,155 person-years. This resulted in a standardized mortality ratio of 1.37 (95% confidence interval [CI]=1.3–1.4) during 2000–2013, compared with the U.S. general population. The suicide rates were not significantly different in the two study periods (Table 2). The standardized mortality ratio at 0–12 months did not change significantly in 2007–2013 (2.21, 95% CI=1.9–2.5) compared with 2000–2006 (2.57, 95% CI=2.3–2.9). Likewise, the standardized mortality ratio in 1- to 5-year survivors remained stable in the two study periods, at 1.17 (95% CI=1.1–1.3) in 2000–2006 compared with 1.28 (95% CI=1.1–1.4) in 2007–2013 (Table 3). Among the patients who committed suicide, 84% were male, 89% were Caucasian, and 37% were over the age of 70 years. Ninety-two percent of patients had a single cancer, and in 47% the patient’s cancer was localized or only regionally spread. Forty-six percent of patients did not receive any treatment, and approximately 2% refused definite treatment for any cancer. The suicide rates in all subgroups were higher than the general population. The sites with higher standardized mortality ratios were esophagus followed by pancreas, lung with bronchus, and oropharynx (Table 2). The risk was not different in the two study periods and was highest in the first year after cancer diagnosis. The suicide rate declined thereafter, with a leveling off after 5 years (Table 3).

TABLE 1. Demographic and Tumor Characteristics With Corresponding Suicide Rates in Cancer Patients Diagnosed During 2000–2013

Characteristic	2000–2013			2000–2006		2007–2013	
	Total Number of Cancer Patients (%)	Observed Suicide (%)	Standardized Mortality Ratio (95% CI)	Observed Suicide (%)	Standardized Mortality Ratio (95% CI)	Observed Suicide (%)	Standardized Mortality Ratio (95% CI)
Sex							
Male	768,420 (51)	1,255 (84)	1.39 (1.3–1.5)	812 (84)	1.29 (1.2–1.4)	443 (84)	1.61 (1.5–1.8)
Female	717,720 (49)	240 (16)	1.27 (1.1–1.4)	154 (16)	1.20 (1–1.4)	86 (16)	1.43 (1.1–1.8)
Race							
Caucasian	1,207,446 (81)	1,335 (89)	1.31 (1.2–1.4)	871 (90)	1.23 (1.2–1.3)	464 (87)	1.49 (1.4–1.6)
African American	154,082 (10)	57 (4)	1.62 (1.2–2.1)	32 (3)	1.34 (0.9–1.9)	25 (5)	2.2 (1.4–3.2)
Other	124,612 (9)	103 (7)	2.49 (2.1–3.1)	63 (7)	2.25 (1.7–2.9)	40 (8)	3 (2.1–4.1)
Age group							
20–44 years old	144,020 (10)	130 (9)	1.15 (0.9–1.4)	93 (10)	1.12 (0.9–1.4)	37 (7)	1.25 (0.9–1.7)
45–60 years old	406,955 (27)	419 (28)	1.29 (1.2–1.4)	266 (27)	1.22 (1.1–1.4)	153 (29)	1.45 (1.2–1.7)
60–70 years old	386,130 (26)	392 (26)	1.42 (1.3–1.6)	251 (26)	1.36 (1.2–1.5)	141 (27)	1.55 (1.3–1.8)
≥70 years old	549,035 (37)	554 (37)	1.46 (1.3–1.6)	356 (36)	1.31 (1.2–1.5)	198 (37)	1.81 (1.6–2.1)
Marital status							
Married	828,705 (56)	751 (50)	1.03 (1.5–1.9)	510 (53)	0.99 (0.9–1.1)	241 (46)	1.14 (1–1.3)
Single	204,145 (14)	238 (16)	1.90 (1.7–2.2)	147 (15)	1.75 (1.5–2.1)	91 (17)	2.19 (1.8–2.7)
Previously married	343,029 (23)	344 (23)	2.37 (2.1–2.7)	221 (23)	2.24 (2–2.6)	123 (23)	2.65 (2.2–3.2)
Unknown	110,261 (7)	162 (11)	1.67 (1.4–2)	88 (9)	1.43 (1.2–1.8)	74 (14)	2.09 (1.6–2.7)
Tumor stage							
Localized/in situ	1,001,074 (67)	413 (28)	1.14 (1–1.3)	277 (29)	1.1 (1–1.2)	136 (26)	1.23 (1–1.5)
Regional	137,527 (9)	296 (20)	1.96 (1.8–2.2)	184 (19)	1.81 (1.6–2.1)	112 (21)	2.29 (1.9–2.8)
Local regional (prostate)	118,049 (8)	334 (22)	0.85 (0.8–0.9)	236 (24)	0.83 (0.7–0.9)	98 (19)	0.91 (0.7–1.1)
Distant	144,904 (10)	268 (18)	3.17 (3–3.6)	151 (16)	2.98 (2.5–3.5)	117 (22)	3.44 (2.9–4.1)
Unknown	85,441 (6)	184 (12)	1.75 (1.5–2.1)	118 (12)	1.69 (1.4–2.1)	66 (12)	1.88 (1.4–2.5)
Primary tumor							
Single	1,333,843 (90)	1,376 (92)	1.48 (1.4–1.6)	878 (91)	1.40 (1.3–1.5)	498 (94)	1.66 (1.5–1.8)
Multiple	152,297 (10)	119 (8)	0.71 (0.6–0.9)	88 (9)	0.67 (0.5–0.8)	31 (6)	0.89 (0.6–1.3)
Treatment							
Treated	873,549 (59)	803 (54)	1.15 (1.1–1.2)	548 (57)	1.12 (1–1.2)	255 (48)	1.22 (1.1–1.4)
Not Treated	587,910 (40)	656 (44)	1.72 (1.6–1.9)	396 (41)	1.53 (1.4–1.7)	260 (49)	2.12 (1.9–2.4)
Refused Treatment	24,681 (1)	31 (2)	2.67 (1.8–3.8)	22 (2)	2.41 (1.5–3.7)	09 (2)	3.65 (1.7–7)

DISCUSSION

This study reveals that cancer patients in the United States are at 1.37-fold higher risk of committing suicide compared with the general population. The

results of this study affirm the findings from previous studies that suicide rates are still higher in male sex, older age, advanced stage, and in patients with single cancer in the more recent period.

The risk of committing suicide in the first year after diagnosis (2–11 months) was more than twice the overall risk and did not change across the two study periods.

TABLE 2. Suicide Rates in Cancer Patients at Selective Sites Diagnosed During 2000–2013 in the Surveillance Epidemiology and End Results Database

Cancer Type	2000–2013	2000–2013	2000–2006	2007–2013
	Number of Observed Suicides	Standardized Mortality Ratio (95% CI)	Standardized Mortality Ratio (95% CI)	Standardized Mortality Ratio (95% CI)
All sites	1,495	1.37 (1.3–1.4)	1.27 (1.2–1.5)	1.58 (1.4–1.7)
Oral cavity and pharynx	95	3.36 (2.7–4.1)	3.14 (2.4–4.1)	3.79 (2.7–5.2)
Esophagus	21	3.85 (2.4–5.9)	3.58 (1.9–5.9)	4.27 (2–8)
Stomach	20	2.50 (1.5–3.9)	2.51 (1.3–3.9)	2.49 (1–5.1)
Liver	19	3.55 (2–5.5)	3.13 (1.4–5.5)	3.92 (2–7)
Pancreas	18	3.8 (2.3–6)	2.93 (1.2–6.0)	4.72 (2.4–8.5)
Larynx	20	2.04 (1.3–3.2)	2.18 (1.2–3.2)	1.72 (0.6–4)
Lung and bronchus	137	3.37 (2.8–4)	3.3 (2.6–4)	3.48 (2.6–4.6)
Myeloma	20	2.08 (1.3–3.2)	2.56 (1.4–3.2)	1.33 (0.4–3.1)

In a study using the SEER database, Misono et al. (7) concluded that U.S. cancer patients were at 2-fold higher risk (standardized mortality ratio=1.88, 95% CI=1.83–1.93) of committing suicide than the general population. However, their study was limited to cancer patients diagnosed during 1973–2002. The outcome of cancer patients has improved significantly in the previous decade.

The higher risk of committing suicide among patients with esophageal, pancreatic, hepatic, lung and bronchus, and

oropharyngeal cancers is most likely related to the patient having a grave prognosis, low quality of life due to comorbid depression, the disease's impact on appearance, impaired vital functioning, and chronic pain. However, these results may be confounded by concomitant substance abuse and higher incidence of depression in these patients (1, 13–17).

Higher suicide rates in elderly white males mirror trends in the general population and have been attributed to the inability to handle stress due to

a cancer diagnosis and the psychological brittleness in old age (18, 19) (see Table 1). The increased risk in the first year postdiagnosis has also been reported in other studies (20, 21) and may be related to disease behavior. During a highly aggressive disease, depression resulting from inadequately controlled pain and treatment failure could lead to hopelessness and suicide (1, 22). Surprisingly, our data suggest that the difference in suicide rates may decrease after 5 years. This is most likely due to a short follow-up period, with fewer patients followed beyond 5 years. Clinicians should be aware of symptoms of depression and suicidality beyond the initial years of their patient's cancer diagnosis (23) (see Table 3).

The higher suicide rates in the first year following a cancer diagnosis may partially explain absence of any significant decline in overall suicide rates in the more recent era (2007 onward), despite improvements in cancer treatment and patient survival. However, compared with the previous study (examining data from 1973 to 2002), overall suicide rates decreased by 25% after the year 2000 (7). This could be due to increased awareness about higher suicide rates among cancer patients, as well as improvements in cancer treatment and outcomes.

Nevertheless, the findings in the present study should be interpreted with caution due to misclassification bias (e.g., cause of death mistakenly labelled as “suicide”) and lack of information on confounding factors, such as concomi-

TABLE 3. Suicide Rates in Cancer Patients According to Time Since Diagnosis

Latency	2000–2013		2000–2007		2007–2013	
	Number of Observed Suicides (%)	Standardized Mortality Ratio (95% CI)	Number of Observed Suicides (%)	Standardized Mortality Ratio (95% CI)	Number of Observed Suicides (%)	Standardized Mortality Ratio (95% CI)
0–11 Months	486 (33)	2.39* (2.2–2.6)	256 (26)	2.57* (2.3–2.9)	230 (43)	2.21* (1.9–2.5)
12–59 Months	636 (42)	1.22* (1.1–1.3)	368 (38)	1.17* (1.1–1.3)	268 (51)	1.28* (1.3–1.4)
60–119 Months	373 (25)	1.03 (0.9–1.2)	342 (36)	1.00 (0.9–1.1)	31 (6)	1.38 (0.9–2)

*p<0.05.

KEY POINTS/CLINICAL PEARLS

- Cancer patients are at higher risk of committing suicide than the general population.
- The risk of committing suicide is highest in the first year after the diagnosis of cancer.
- Suicide rates are highest in patients with esophageal, pancreatic, hepatic, lung and bronchus, and oropharyngeal cancers.
- The suicide rates in the first year after diagnosis have not changed significantly in the more recent time period, despite advances in cancer treatment.

tant psychiatric illnesses or substance abuse. The data based upon the population registry were also undoubtedly subject to drop out of patients during follow-up. However, the outcome measured in this study is mortality, which is accurately recorded by the SEER program for all the patients in the registry.

CONCLUSIONS

Overall, the suicide rate among cancer patients is slightly higher than the general U.S. population and has not changed significantly in more recent years. The emotional experience of cancer patients in the period immediately after cancer diagnosis deserves further study. Despite enormous gains in terms of cancer treatment and outcome, the suicide rates in patients with certain cancers remain high.

Dr. Kumar is a third-year resident in internal medicine at Maimonides Medical Center, Albert Einstein College of Medicine, New York. Dr. Chaudhary is a second-year pediatric resident at Maimonides Children Hospital, Albert Einstein College of Medicine. Dr. Soni is a second-year resident in internal medicine at Maimonides Medical Center, Albert Einstein College of Medicine. Dr. Jha is a first-year resident in internal medicine at Maimonides Medical Center, Albert Einstein College of Medicine.

The data in this study are from the SEER database (<https://seer.cancer.gov/data/>). The interpretation and reporting of these data are the sole responsibility of the authors.

The authors thank Melvyn Hecht, M.D., from the Division of Geriatric Medicine,

Maimonides Medical Center. The authors also thank the Applied Research Program, National Cancer Institute, Information Management Services, and SEER program registries in the creation and maintenance of the database used in this study as a research resource, as well as members of the American Journal of Psychiatry-Residents' Journal Editorial Board: Drs. Katherine Pier, Gopalkumar Rakesh, and Oliver M. Glass, for their editorial assistance.

REFERENCES

1. Yousaf U, Christensen M-LM, Engholm G, et al: Suicides among Danish cancer patients 1971-1999. *Br J Cancer* 2005; 92:995-1000
2. Hem E, Loge JH, Haldorsen T, et al: Suicide risk in cancer patients from 1960 to 1999. *J Clin Oncol* 2004; 22:4209-4216
3. Dormer NRC, McCaul KA, Kristjanson LJ: Risk of suicide in cancer patients in Western Australia, 1981-2002. *Med J Aust* 2008; 188:140-143
4. Miccinesi G, Crocetti E, Benvenuti A, et al: Suicide mortality is decreasing among cancer patients in Central Italy. *Eur J Cancer* 2004; 40:1053-1057
5. Björkenstam C, Edberg A, Ayoubi S, et al: Are cancer patients at higher suicide risk than the general population? A nationwide register study in Sweden from 1965 to 1999. *Scand J Public Health* 2005; 33:208-214
6. Robinson D, Renshaw C, Okello C, et al: Suicide in cancer patients in South East England from 1996 to 2005: a population-based study. *Br J Cancer* 2009; 101(1):198-201
7. Misono S, Weiss NS, Fann JR, et al: Incidence of suicide in persons with cancer. *J Clin Oncol* 2008; 26:4731-4738
8. Satcher D: National Strategy for Suicide Prevention: Goals and Objectives for Action. Rockville, Md, Department of Health and Human Services, 2001
9. Goldston DB, Walrath CM, McKeon R, et al: The Garrett Lee Smith Memorial Suicide

Prevention Program. *Suicide Life Threat Behav* 2010; 40(3):245-256

10. National Cancer Institute Office of Cancer Survivorship: About Cancer Survivorship Research: History. Rockville, Md, National Cancer Institute
11. Koepsell TD, Weiss NS: *Epidemiologic Methods: Studying the Occurrence of Illness*. New York, Oxford University Press, 2003
12. Ury HK, Wiggins AD: Another shortcut method for calculating the confidence interval of a Poisson variable (or of a standardized mortality ratio). *Am J Epidemiol* 1985; 122(1):197-198
13. Tang NK, Crane C: Suicidality in chronic pain: a review of the prevalence, risk factors and psychological links. *Psychol Med* 2006; 36:575-586
14. de Graeff A, de Leeuw JRJ, Ros WJG, et al: A prospective study on quality of life of patients with cancer of the oral cavity or oropharynx treated with surgery with or without radiotherapy. *Oral Oncology* 1999; 35:27-32
15. Pourel N, Peiffert D, Lartigau E, et al: Quality of life in long-term survivors of oropharynx carcinoma. *Int J Radiat Oncol Biol Phys* 2002; 54:742-751
16. Duffy SA, Terrell JE, Valenstein M, et al: Effect of smoking, alcohol, and depression on the quality of life of head and neck cancer patients. *Gen Hosp Psychiatry* 2002; 24:140-147
17. Malone KM, Waternaux C, Haas GL, et al: Cigarette smoking, suicidal behavior, and serotonin function in major psychiatric disorders. *Am J Psychiatry* 2003; 160:773-779
18. Centers for Disease Control and Prevention. *Suicide: Facts at a Glance*. Atlanta, Centers for Disease Control and Prevention
19. Canetto SS: Suicide: Why are older men so vulnerable? <http://jmm.sagepub.com/content/early/2015/11/19/1097184X15613832.abstract>
20. Fox BH, Stanek EJ III, Boyd SC, et al: Suicide rates among cancer patients in Connecticut. *J Chronic Dis* 1982; 35:89-100
21. Innos K, Rahu K, Rahu M, et al: Suicides among cancer patients in Estonia: a population-based study. *Eur J Cancer* 2003; 39:2223-2228.
22. Crocetti E, Arniani S, Acciai S, et al: High suicide mortality soon after diagnosis among cancer patients in central Italy. *Br J Cancer* 1998; 77(7):1194-1196
23. Schairer C, Brown LM, Chen BE, et al: Suicide after breast cancer: an international population-based study of 723,810 women. *J Natl Cancer Inst* 2006; 98(19):1416-1419

Suicide Prediction With Machine Learning

Gopalkumar Rakesh, M.D.

CASE VIGNETTE

“Mr. A” is a 35-year-old Caucasian veteran who just completed a tour of Iraq and returned stateside. He presents to the emergency department at the Veterans Affairs (VA) Hospital complaining of persistent nightmares, inability to go out at all, and inability to be normal around his children. He says he wants to die. He has no family history of suicide, and his wife has given away his guns. He is deemed to be a safety risk to himself and is admitted to the inpatient service. His symptoms are controlled on an optimal medication regimen, but a week after he leaves the hospital he discontinues his medications because they make him feel dull. At his outpatient follow-up appointment 2 weeks later, he reports feeling okay but endorses transient thoughts of dying, which become increasingly severe over the next few weeks. He expresses being at the end of the rope and wanting to die. He spends most of his time thinking about ways to kill himself, and one day calls the crisis line when his wife is away at work.

For anyone who has worked at the Veterans Affairs (VA), this situation described in the above case vignette may seem familiar. Despite all the psychotropic medications we have at our disposal, and despite our best efforts, as any mental health provider who has lost a patient to suicide knows all too well, there is no way to accurately predict what this veteran will do next.

Suicide is the 10th leading cause of death in the United States. A total of 41,149 people died by suicide in 2015. Suicide costs the health care industry \$51 billion annually (1). Firearms are responsible for more than 50% of suicides, and middle-aged white men have the highest rates (1). Given these statistics combined with the numerous

stressors associated with deployment and reintegration, it is perhaps unsurprising that suicide prevention is a top priority for the U.S. military.

Multiple studies have investigated factors correlated with completed suicide; a well-known strong predictor of completed suicide is a previous suicide attempt. A 2016 meta-analysis of longitudinal studies pointed out discrepancies between studies that have examined the influence of previous suicidal attempts on suicidal behavior (2). Individual studies report risk ranging from nonsignificant (3) to 40-fold (4) to 70-fold (5).

Clinical prediction rules are increasingly used to facilitate evidence-based decision making regarding diagnosis and treatment; in essence, a clinical prediction tool helps a clinician weigh the odds and arrive at an average predicted risk (6). Mental health prediction rules have been slower to develop than clinical prediction rules, such as the Wells Criteria (7) (to help assess risk of pulmonary embolism) or the CHADS2 score (8) (to help assess risk of stroke with atrial fibrillation). Efforts to validate specific scales to predict suicide risk have been undertaken, with studies evaluating the Columbia Suicide Severity Rating Scale, the Suicide Trigger Scale, and the Barwon Health Suicide Risk Assessment (9–11). Of these, the Columbia Suicide Severity Rating Scale is standardized for use in different populations, ranging from children to adults and veterans, and has reasonably good data for validity and reliability (12, 13).

Compounding the complexity of predicting suicide risk is the fact that 60% of deaths from suicide come about from the first suicide attempt, and a com-

plex relationship exists between previous suicide attempts, current suicidal ideation, and lifetime suicide risk (2, 13, 14). Adding the high degree of variability of type of illness associated with suicidal ideation (major depressive disorder, posttraumatic stress disorder [PTSD], borderline personality), mental health clinicians currently have no evidence-based or systematic way of arriving at a composite risk score for each patient from all of the individual risk factors (14). To date, the identification of a biomarker or biomarkers to predict suicide risk has remained elusive, and there is no blood test to predict suicide risk (15). In summary, the ability of a mental health provider to predict an individual patient's suicide risk with any certainty is limited by lack of clinical prediction rules, a problem that is compounded and highlighted by individual diagnostic, psychosocial, and medical comorbidity.

It is at this point where machine learning can enter the landscape of psychiatry care. For the last 10 years, machine learning has made its foray into medical practice and biomedical applications and has facilitated the development of well-accepted clinical prediction rules (6). A machine-learning algorithm is a statistical technique that utilizes complex calculations to look at large data sets to predict factors or variables that can influence outcomes. Using variables that have been identified as significantly predictive, a software interface can be designed so that a provider in a hospital setting can ascertain the variables relevant to the patient being examined, input the variables into the system, and receive output in the form of a risk calculated through the available data. When set up properly,

the information entered by providers can be harnessed to add to the data set and improve the accuracy of the clinical prediction rule.

Machine learning was initially used to build faster search engines like Google, for signal detection and for many other engineering feats. A recent article in JAMA highlights how machine learning is instrumental for health care in the 21st century(16). Studies have already shown the use of machine learning in risk stratification and outcome prediction in multiple medical and surgical specialties. It follows that machine learning may be a useful adjunct to the clinical assessment of suicide risk (14).

There are a few studies that have already used machine learning to predict suicidal risk in clinical and nonclinical settings. Querying PubMed with the MeSH terms “machine learning” and “suicide” and selecting studies that used clinical populations for assessment of suicidal risk, we chose two studies. Both studies applied machine learning to retrospective data sets encompassing clinical and demographic details of patients. The first study applied machine learning to predict suicide risk in a sample of outpatients with mood disorders and determined a sensitivity of 70% and specificity of 70% while finding previous hospitalization for major depressive disorder (using DSM-IV), a history of psychosis, cocaine dependence, and comorbid PTSD to be the strongest predictors of completed suicide risk (17).

The second study comes from the STARRS [Study to Assess Risk and Resilience in Service Members] project. This study utilized machine learning to predict suicide risk among 53,769 previously deployed soldiers and veterans after discharge from inpatient hospitalization from 2004 to 2009 (18). Variables considered included demographics, diagnoses (as distinguished by appropriate ICD-9 codes), assessment tool results, pharmacotherapy, psychotherapy (if any), and information about hospital course. The STARRS model was able to predict suicide risk with sensitivity and specificity each approaching 70% and identified male sex, late age at enlistment, criminal offenses, and pres-

KEY POINTS/CLINICAL PEARLS

- Suicide is a complex neurobiological phenomenon, and there is great variability in validity of clinical assessment tools to predict suicidal risk.
- Machine learning is a statistical technique that can pinpoint suicide risk prediction variables that could be clinical or demographic information; with extrapolation this could also include investigational results such as cytokine levels or brain imaging parameters like neurotransmitter binding using PET imaging, white matter integrity, or brain cortical thickness.
- A composite score calculated from highlighted variables could help stratify suicidal risk for patients seen in various settings, much similar to CHADS2 score for risk of stroke in atrial fibrillation.
- The technique is not without limitations and would need to be used in conjunction with clinical assessment to decrease margin of error in suicidal risk prediction.

ence of previous suicidal ideation as the strongest predictors of completed suicide.

Generation of a composite risk score for an individual patient using machine learning relies on a computational process based on patterns seen in previously analyzed data sets. Both the score and the clinical prediction rule used for generating the score need adjunctive clinical interpretation before assigning relevance to the score. A trained mental health provider knows that presence of comorbid substance use disorders and psychotic symptoms (elucidated as predictive of completed suicide in a study by Passos et al. [17]) increase suicidal risk in patients with major depressive disorder or PTSD. The benefit of a machine-learning approach permits the validation and strengthening of clinical prediction rules as numbers of inputs rise while, at the same time, facilitating more accurate triage of patients and more reliable assessment of suicide risk in cases in which the clinical situation seems ambiguous, as in the case of the patient in the above clinical vignette. As with any computer application, the technology is only as good as the information and programming that goes in to it, and misclassification or wrongful assignment of risk is possible. It is for this reason that adjunctive clinical assessment and ongoing modifications are necessary to optimize the utility of the strategy.

Another avenue for strengthening risk prediction is applying machine learning to biomarker data in conjunc-

tion with clinical assessment data. Numerous candidate biomarkers have been postulated for suicide (15, 19). Some of them include neurotransmitter systems (dopamine, norepinephrine, serotonin, GABA), cytokine levels, imaging biomarkers (e.g., PET, diffusion tensor imaging), and cortisol/HPA systems. An optimal biomarker should be unique to suicide and have good validity and reliability. It is possible that lack of an optimal biomarker speaks to the complex neurobiology of suicide. An ideal research goal would be to apply machine learning to databases comprising clinical data, as well as candidate biomarker data. This would result in being able to choose both clinical and biomarker variables with the highest capability of suicide risk prediction to generate a composite score for patients seen in the emergency department or inpatient/outpatient settings, irrespective of diagnoses. These endeavors highlight a future direction in psychiatry that will help reduce our margin of error in suicide prediction.

Dr. Rakesh is a third-year resident in the Department of Psychiatry and Behavioral Sciences, Duke University Health System, Durham, N.C., as well as an Associate Editor of the *Residents' Journal* and Guest Editor for this issue.

The author thanks Jane Gagliardi, M.D., M.H.S., Associate Professor of Psychiatry and Internal Medicine, Duke University Health, for her suggestions and mentoring.

REFERENCES

1. <https://www.cdc.gov/>
2. Ribeiro JD, Franklin JC, Fox KR, et al: Self-injurious thoughts and behaviors as risk factors for future suicide ideation, attempts, and death: a meta-analysis of longitudinal studies. *Psychol Med* 2016; 46(2):225–236
3. Tejedor MC, Diaz A, Castillon JJ, et al: Attempted suicide: repetition and survival: findings of a follow-up study. *Acta Psychiatr Scand* 1999; 100(3):205–211
4. Harris EC, Barraclough B: Suicide as an outcome for mental disorders: a meta-analysis. *Br J Psychiatry* 1997; 170:205–228
5. Sanchez-Gistau V, Baeza I, Arango C, et al: Predictors of suicide attempt in early-onset, first-episode psychoses: a longitudinal 24-month follow-up study. *J Clin Psychiatry* 2013; 74(1):59–66
6. Adams ST, Leveson SH: Clinical prediction rules. *BMJ* 2012; 344:d8312.
7. Wolf SJ, McCubbin TR, Feldhaus KM, et al: Prospective validation of Wells Criteria in the evaluation of patients with suspected pulmonary embolism. *Ann Emerg Med* 2004; 44(5):503–510
8. Keogh C, Wallace E, Dillon C, et al: Validation of the CHADS2 clinical prediction rule to predict ischaemic stroke: a systematic review and meta-analysis. *Thromb Haemost* 2011; 106(3):528–538
9. Large M, Kaneson M, Myles N, et al: Meta-analysis of longitudinal cohort studies of suicide risk assessment among psychiatric patients: heterogeneity in results and lack of improvement over time. *PLoS One* 2016; 11(6):e0156322
10. Nelson HD, Denneson L, Low A, et al: Systematic Review of Suicide Prevention in Veterans: VA Evidence-Based Synthesis Program Reports. Washington, DC, Veterans Affairs Administration, 2015
11. Chan MK, Bhatti H, Meader N, et al: Predicting suicide following self-harm: systematic review of risk factors and risk scales. *Br J Psychiatry* 2016; 209(4):277–283
12. Chappell P, Feltner DE, Makumi C: Initial validity and reliability data on the Columbia-Suicide Severity Rating Scale. *Am J Psychiatry* 2012; 169(6):662–663
13. Posner K, Brown GK, Stanley B, et al: The Columbia-Suicide Severity Rating Scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. *Am J Psychiatry* 2011; 168(12):1266–1277
14. Ribeiro JD, Franklin JC, Fox KR, et al: Suicide as a complex classification problem: machine learning and related techniques can advance suicide prediction: a reply to Roaldset (2016). *Psychol Med* 2016; 46(9):2009–2010
15. Oquendo MA, Sullivan GM, Sudol K, et al: Toward a biosignature for suicide. *Am J Psychiatry* 2014; 171(12):1259–1277
16. Darcy AM, Louie AK, Roberts LW: Machine learning and the profession of medicine. *JAMA* 2016; 315(6):551–552
17. Passos IC, Mwangi B, Cao B, et al: Identifying a clinical signature of suicidality among patients with mood disorders: a pilot study using a machine learning approach. *J Affect Disord* 2016; 193:109–116
18. Kessler RC, Warner CH, Ivany C, et al: Predicting suicides after psychiatric hospitalization in US Army soldiers: the Army Study To Assess Risk and rEsilience in Servicemembers (Army STARRS). *JAMA Psychiatry* 2015; 72(1):49–57
19. Olvet DM, Peruzzo D, Thapa-Chhetry B, et al: A diffusion tensor imaging study of suicide attempters. *J Psychiatr Res* 2014; 51:60–67

Get Involved With the Residents' Journal!

The *American Journal of Psychiatry-Residents' Journal* is seeking **Guest Editors** to assist in coordinating special themes for upcoming issues. If you are interested in working with the *Residents' Journal* Editorial Board in this capacity, please contact the Editor-in-Chief, Katherine Pier, M.D. (katherine.pier@mssm.edu).

Countertransference Reactions to a Suicidal Patient

Mary-Catherine Rensko, D.O.

Physicians strive to prevent death and increase quality of life. Suicide goes against these teachings and to a psychiatrist is often thought to stem from mental illness. Suicide is prevented, often by restrictive means, whether it is hospitalization or physical restraints. When a patient wishes to choose death over life, it can invoke feelings of helplessness in the physician and call into question who is responsible for a person's life (1). Suicidal patients may elicit in a physician feelings of anxiety, pain, grief, and aggression, to name a few (2). Paradoxical combinations of hopefulness and distress with avoidance may occur when treating a suicidal patient (3).

In the treatment of suicidal patients, countertransference hate can be experienced. Countertransference can be broadly understood as past emotional reactions of the provider projected onto the present situation. Countertransference hate, as proposed by D.W. Winnicott, is a normal and understandable reaction of hate toward the patient's personality and behaviors (4). Countertransference hate, a mixture of aversion and malice, may be unconscious and further impedes the therapeutic alliance (5). The countertransference reactions may go unchecked and remain unconscious, interfering with patient care through the acting out of unresolved conflicts (6). D.W. Winnicott first described countertransference hate and cautioned physicians against ignoring the reaction. If countertransference hate is left unconscious, the therapy may adapt to the needs of the therapist, rather than the needs of the patient (4).

In treating patients with chronic suicidality, there has been a shift from psychotherapies that prioritize resolving unconscious conflicts in the therapist and patient to psychotherapy that

focuses on helping the patient reduce dangerous and treatment-interfering behaviors. An example of this shift would be the dialectic-behavioral therapy approach. This approach focuses on group therapy to teach coping skills behaviorally in order to reduce suicidality and self-injury. It also utilizes individual work to simultaneously address goals (7). By focusing on a patient's behavior, the treatment benefit is ideally a reduction in dangerous behaviors.

In approaching a suicidal patient, treatment modalities may differ based upon patient presentation, as well as comfort and knowledge of the provider. The following case illustrates the issue of countertransference reactions with suicidal patients.

CASE

"Mr. B," a mixed-race man in his early 20s, was admitted to an inpatient psychiatric ward for suicidal thoughts. His psychiatric diagnosis remained unclear. The differential diagnosis included adjustment disorder with mixed disturbance of emotions and conduct, mild intellectual disability, and attention deficit hyperactivity disorder. He had been expressing intermittent suicidal thoughts throughout his hospitalization and was placed on correspondingly increased levels of supervision to ensure his safety.

As his resident physician, I went to speak with him one morning; he endorsed having suicidal thoughts and exploring ways to attempt suicide on the inpatient ward. When I asked him if he could keep himself safe on the ward, he began stating ideas of how to harm himself in the hospital. He repeatedly said that he just wanted to be dead and could not see any other solution to his current distress. He stopped speaking and refused to move when I

asked him to walk to the nursing station to have someone stay with him. I asked for "line of sight" supervision and urged him to continue processing his emotions while I attended a meeting.

Soon after leaving for the meeting, I was called by nursing staff. The patient was actively trying to tie his bed sheet around his neck. Suddenly, there were swarms of staff piling into his room, as he writhed around grasping for anything he could reach. He continued grabbing for items to hold over his face. Four-point restraints were ordered and quickly applied. While he was restrained, he pleaded repeatedly, "Why won't you just let me die?" He received intramuscular medications for agitation, and I left the room as he dozed off. I felt rattled and uneasy, unable to push the pleading for death from my mind.

DISCUSSION

My immediate decision to attend to my administrative duties, thus avoiding my patient, illustrates a level of countertransference hate. Perhaps it was the difficulty formulating a diagnosis, or perhaps I was turning the countertransference hate toward myself, leading to hopelessness (5). A question I struggled with was, "Who was I to decide that his life, or anyone's life, is worth living?" I felt helpless and uncomfortable. I felt like a fraud; I was supposed to be helping his suffering, but I was so confused by his repeated presentations, and did not feel like I had helped him make any improvement. I knew that depression was evident and clouding his ability to rationally discuss death. But, why couldn't I let him die? I had the patient restrained to prevent self-harm that could not be maintained less restrictively. But, could I relate and feel connected to his suffering?

KEY POINTS/CLINICAL PEARLS

- Countertransference is past emotional reactions of the provider projected onto the present situation.
- Countertransference reactions are important to discuss with colleagues and supervisors to better understand their meaning and importance in patient care.
- Evaluation of one's own reaction toward a patient can help to determine whether one's own past experiences are being played out in the therapy.

My avoidance of this patient at his height of distress, through asking nursing staff to attend to him, is apparent. Although I initially had unconscious feelings of countertransference hate, it has been suggested that this countertransference can be managed through self-insight, self-integration, anxiety management, empathy, and improving skills in conceptualization (6). Other young physicians have experienced the need for relatedness, feeling that they had intervened completely, and being emotionally involved when treating suicidal patients (2). Five defenses have been described as preventing full countertransference awareness: repression of countertransference hate, countertransference hatred turned against the self, reaction formation, projection, distortion, and denial of reality for validation (5).

Without introspection into my reaction toward a suicidal patient, I may still be harboring unconscious countertransference hate, avoiding this patient, or unable to recognize the patient's withdrawal during crisis. Some level of consciousness was attained, helping to rec-

ognize the motivations behind behaviors exhibited by the patient.

CONCLUSIONS

The present case illustrated the importance of gaining awareness of countertransference reactions toward patients. When treating suicidal patients, physicians are sensitive to not only the patient's distress, but are also conscious of possible critiques or comments of their treatment and the fear of a bad outcome. With suicidal patients, physicians fear making mistakes, stress over uncertainties, and harbor concern for their reputation (2). Physicians are prone to confuse the limitation of professional ability to heal with a sense of personal worth because the nature of psychotherapy utilizes a physician's personality to heal (5). Although anxiety or hopelessness may occur, it remains essential to bring countertransference reactions to the consciousness. It is important to discuss experiences in order to elucidate the physician's defenses that could result in a patient acting out due to not feeling cared for, a physician losing

empathy, or eventually severing a therapeutic relationship. In the above case, supervision and processing of the event brought countertransference reactions to consciousness. This allowed for the preservation of the therapeutic alliance and continued care.

Dr. Rensko is a third-year resident at Tripler Army Medical Center, Honolulu.

The author thanks the patient for the opportunity for self-evaluation, as well as the staff at the Tripler Army Psychiatry Department for support and encouragement.

REFERENCES

1. Ho A: Suicide: rationality and responsibility for life. *Can J Psychiatry* 2014; 59 (3):141-147
2. Hoifodt T, Talseth A: Dealing with suicidal patients: a challenging task: a qualitative study of young physicians' experiences. *BMC Medical Educ* 2006; 6:1-8
3. Yaseen Z, Briggs J, Kopeykina I, et al: Distinctive emotional responses of clinicians to suicide-attempting patients: a comparative study. *BMC Psychiatry* 2013; 13(230):1-9
4. Winnicott DW: Hate in the countertransference. *J Psychother Pract Res* 1994; 3(4):348-356
5. Maltzberger J, Buie D: Countertransference hate in the treatment of suicidal patients. *Arch Gen Psychiatry* 1974; 30: 625-633
6. Gelso C, Latts M, Gomez M, et al: Countertransference management and therapy outcome: an initial evaluation. *J Clin Psychol* 2002; 58:861-867
7. Gunderson J, Weinberg I, Choi-Kain L: Borderline personality disorder, in Gabbard's *Treatments of Psychiatric Disorders*, 5th ed. Edited by Gabbard G, Washington, DC, American Psychiatric Publishing, 2014

Suicide by Cop: A Psychiatric Phenomenon

Ralph H. de Similien, M.D., M.S., M.Ed.
Adamma Okorafor, M.D.

When a suicidal individual provokes a law enforcement officer into killing him or her, this is known in the law enforcement vernacular as “suicide by cop” (1). Other names by which this phenomenon is known are copicide, law enforcement-forced-assisted suicide, victim-precipitated homicide, hetero-suicide, and suicide by proxy. The present case report describes this unique phenomenon, along with its commonality with the generic form of suicide, and the treatment approach to suicide by cop is also addressed.

CASE

“Mr. A” was a 58-year-old self-described “faithful Christian,” African American man who carried a past psychiatric diagnosis of bipolar I disorder, generalized anxiety disorder, stimulant use disorder (cocaine), and alcohol use disorder. He presented to the Howard University Hospital emergency department with a chief complaint of depression, anxiety, and suicidal ideation with a plan to provoke law enforcement officers to shoot him. His plan was to “run down” a police precinct with a weapon such as a knife or gun in order to provoke the officers to shoot and kill him. Prior negative experiences with law enforcement agencies appeared to have been his motivation. His assurance that he could successfully provoke the police to shoot him stemmed from experiences with “a couple of people” he knew who died at the hands of officers of the law after provoking the officers to shoot them. He stated, “The easiest way to die is by police because they shoot without a second thought.”

DISCUSSION

Those who want to kill themselves and are not willing to complete the act themselves employ diverse methods of ac-

complishing death. Suicide by cop is one such method. Suicide by cop is a forensic phenomenon that is relatively common in the law enforcement field. Literature on suicide by cop estimate its prevalence at about 10% (2) to 36% (1) of police shootings. The concept is credited to Dr. Marvin E. Wolfgang (3), who, in 1959, named it “suicide by means of victim-precipitated homicide.” In his publication on research conducted on the topic between 1948 and 1952, Dr. Wolfgang reported on 588 cases of police officer-involved shootings in the city of Philadelphia’s Homicide Squad and concluded that 26% fit the criteria. The term was created to accentuate the fact that “the victim in these ... cases is considered to be a suicide prone [individual] who manifests his desire to destroy [him]self by engaging another person to perform the act” (3). The actual term suicide by cop was first used around the early 1980s by Karl Harris, a Los Angeles County examiner.

Suicide by cop shares some statistical characteristics when compared with the generic form of suicide. For example, like the generic form of suicide, suicide by cop is reported to be more prevalent in males with psychiatric disorders (i.e., chronic depression, bipolar disorders, schizophrenia, substance use disorders, among others psychiatric diagnoses), poor stress response skills, adverse life events, or recent stressors (4). A history of previous suicide attempt is another area of commonality between the two, where it is estimated that around 36% of suicide by cop victims have previously attempted suicide (1).

From a sociodemographic standpoint, these two forms of suicide also share common characteristics profiles (see Table 1). It is estimated that over 98% of suicide by cop victims are males

(1); 52% are Caucasian (1), and the mean age is about 31.8 years (5). In terms of trigger points for suicide, it is reported that stressful, adverse life events and/or conjugal conflicts (i.e., despondence over a relationship breakup, domestic violence, terminal illness, loss of a job, lawsuit, etc.) are present in over 70% of reported suicide by cop cases at the time the suicidal act was attempted or committed (5). Suicide by cop was noted to be more prevalent in those of lower socioeconomic class, with a majority of victims being unemployed and unmarried (5) (divorced or single) at the time the incident took place. In terms of psychopathology, comorbid psychiatric and/or personality disorders, especially borderline or antisocial personality disorders, were found to play a major role in this form of suicidal behavior (6).

As a method of suicide, however, suicide by cop has its unique characteristics. It is reported, for example, to be more common in those with previous encounters/experiences with law enforcement agencies. It is estimated that about 66% of victims have had criminal histories (1).

Religiosity/religious belief (1) is another aspect in which suicide by cop appears to be unique when compared with the generic form of suicide. While religiosity has been found to be a protective factor for suicide and suicidal behaviors in general, those who are religious (when suicidal) tend to choose different paths to suicide than those who are less faithfully religious. Even though we did not identify specific studies quantifying the link between suicide by cop and religiosity, suicide by cop victims, nevertheless, tend to express unique beliefs when it comes to reconciling suicidal ideations to their

TABLE 1. Profile of a Person Most Likely to Become Involved in a Suicide by Cop Incident

A. Prior experiences, encounters, and/or familiarity with law enforcement agencies, but usually minor criminal offenses that give the person some level of familiarity with how police officers operate in response to critical incidents.
B. History of previous suicide attempt/s.
C. Acute psychosocial stressors or interpersonal crisis of some sort involving a family member or other loved one.
D. Poor stress response skills.
E. Presence of a formally diagnosed or a yet to be diagnosed psychiatric disorder.
F. History of drug and alcohol abuse.
G. Religiosity.
H. Negative view of law enforcement agencies.

religious faith. The patient in the above case report reported his strong religious Christian faith as the reason for his chosen suicidal path. He reported to have reasoned that since his Christian beliefs preclude him from committing the suicidal act on his own, having officers of the law do the act would relieve him from committing what he saw, in his religious perception, as a sin (1). He reasoned that by forcing another person to kill him (i.e., a police officer) that he would still inherit heaven after death, as he would have not committed the act of taking his life on his own (1). He chose the police as his target in order to guarantee his quick demise—given his personal knowledge of past confrontational encounters—because of the potential lethality such an encounter with the police is bound to bring with it.

Suicide by cop is a form of suicide, and those who have attempted or wish to attempt it should be approached as suicidal. The treatment approach should be similar to the way one would approach any other patient with suicidal ideations. In other words, once suicidality is identified, it should be clinically treated. In this regard, psychotherapy, individual and/or group therapy, can go a long way in demystifying the suicidal thought processes in these individuals. Those who pres-

ent an imminent danger to themselves or to those around them should be admitted to an inpatient psychiatric unit for safety, stabilization, and treatment. And since the biggest risk factor for suicide is untreated or inadequately treated psychiatric disorders, it is therefore imperative to identify and treat the underlying psychiatric disorder. Symptoms and diagnoses should be the guide to pharmacological treatment. In this regard, lithium has been shown to reduce suicidality in those with bipolar disorder, depression, and/or other affective components to their suicidality. Some studies have shown significant reduction in suicide risk, as well as significant reduction in completed suicides, during treatment with this agent (7). Schizophrenia and schizoaffective disorder patients would benefit from adding clozapine to their regiment, as it has been shown to reduce suicide risk in this patient population. Clozapine is the only treatment option that has been approved by the Food and Drug Administration for this purpose (8). For suicidality related to treatment-resistant psychosis, depression, or mania, ECT remains an important treatment option (7). Antidepressants can also play an important role in the treatment protocol for the suicidal patient because they can be effective in relieving symptoms in those suffering from depressive disorders. While antidepressants are effective in treating depressive symptoms, there have not been any specific studies, to our knowledge, showing the superiority of

one antidepressant over another for relieving suicidality in suicidal depressed patients. In this regard, ketamine, an *N*-methyl-D-aspartate glutamate receptor antagonist, has shown encouraging results in most studies for its acute effect on depression and suicidality (9).

CONCLUSIONS

Each suicidal act represents a private life tragedy, often with a clear set of psycho-social triggers (financial, conjugal, socioeconomic, etc.) Suicide by cop crosses the privacy of the suicidal act to involve the life and psychosocial functioning of others. This is so, because as has been noted recently in the news media, when a police shooting takes place, the outcome is an increased friction and mistrust between the police and the public at large. In addition, suicide by cop has the potential to traumatize the officers who are forced to use deadly force that results in the death of the suicidal individual. Hence, this unique form of suicide has the potential to be a public health threat on a multitude of levels whenever and wherever it takes place. As mental health providers, we need to be aware of this unique form of suicide in our suicide screening assessment arsenal if we are to be effective in preventing it from happening.

Drs. de Similien and Okorafor are fourth-year residents in the Department of Psychiatry, Howard University Hospital, Washington, DC.

KEY POINTS/CLINICAL PEARLS

- Suicide by cop is a term used to describe an incident in which suicidal individuals provoke law enforcement officers to shoot them.
- It is known by many terms in the forensic and law enforcement literature, including, but not limited to “suicide by means of victim-precipitated homicide,” “hetero-suicide,” “suicide-by-proxy,” “copicide,” and “law-enforcement-forced-assisted suicide.”
- It is a public health hazard on many levels: it increases friction and mistrust between the police and the public; traumatizes the officers who are forced to use deadly force on a suicidal individual; and results in the death of the suicidal individual.
- It is most common among males with psychiatric disorder, substance use disorders, poor stress response skills, and recent stressors or adverse life events.

The authors thank Dr. Partam Manalai for his mentorship, guidance, and support.

REFERENCES

1. Mohandie K, Meloy JR: Clinical and forensic indicators of "suicide by cop". *J Forensic Sci* 2000; 45(2):384–389
2. Wright RK, Davis JH: Studies in the epidemiology of murder: a proposed classification system. *J Forensic Sci* 1977; 22:464
3. Wolfgang ME: Suicide by means of victim-precipitated homicide. *J Clin Exp Psychopathol Q Rev Psychiatry Neurol* 1959; 20:335–349
4. Foster T, Gillespie K, McClelland R, et al: Risk factors for suicide independent of DSM-III-R axis I disorder: case-control psychological autopsy study in Northern Ireland. *Br J Psychiatry* 1999; 175:175–179
5. Hutson HR, Anglin D, Yarbrough J, et al: Suicide by cop. *Ann Emerg Med* 1998; 32(6):665–669
6. Cheng AT, Mann AH, Chan KA: Personality disorder and suicide: a case-control study. *Br J Psychiatry* 1997; 170:441–446
7. Fink M, Kellner CH, McCall WV: The role of ECT in suicide prevention. *J ECT* 2014; 30(1):5–9
8. Ernst CL, Goldberg JF: Antisucide properties of psychotropic drugs: a critical review. *Harv Rev Psychiatry* 2004; 12(1):14–41
9. Al Jurdi RK, Swann A, Mathew SJ: Psychopharmacological agents and suicide risk reduction: ketamine and other approaches. *Curr Psychiatry Rep* 2015; 17(10):1–10

TEST YOUR KNOWLEDGE

TEST YOUR KNOWLEDGE HAS MOVED

Our Test Your Knowledge feature, in preparation for the PRITE and ABPN Board examinations, has moved to our Twitter (www.twitter.com/AJP_ResJournal) and Facebook (www.facebook.com/AJPResidents-Journal) pages.

We are currently seeking residents who are interested in submitting Board-style questions to appear in the Test Your Knowledge feature. Selected residents will receive acknowledgment for their questions.

Submissions should include the following:

1. Two to three Board review-style questions with four to five answer choices.
2. Answers should be complete and include detailed explanations with references from pertinent peer-reviewed journals, textbooks, or reference manuals.

**Please direct all inquiries to Rachel Katz, M.D., Senior Deputy Editor (rachel.katz@yale.edu).*

A Tale of Shamans, Exorcism, and Finally Suicide: A Perspective From Two Worlds

Nandhini Madhanagopal, M.D.

It was my first week on night float in the emergency room. I signed onto the pager and waited for my first ER consult. A page at 8:00 PM read, “23-year-old male with a suicide attempt and urine drug screen positive for cocaine. Needs psychiatric evaluation.” I trudged along to meet him.

During that walk, my mind drifted back to where I was 2 years prior. I was in another emergency room halfway around the world in Chennai, India. The pager then read something similar: “25-year old requiring psych evaluation for suicide attempt.” The family of this man told me that he was taken to a religious practitioner in the village. He began crying all day and pleaded that he had nothing to live for. The practitioner suggested a few rituals, somewhat akin to an exorcism. The practitioner performed these rituals, and yet, that patient still showed up in the emergency room.

I had learned the patient consumed pesticide, which is a common method for suicide in India. While barely conscious, he was intubated. His wife told me about a period of depression preceding this event. It had been months since he was his usual bubbly self, and recently he started telling his wife that he was hearing voices. These cruel

Most patients I saw in India would have seen a religious practitioner akin to a “shaman” before a psychiatrist.

voices told him to kill himself and join his ancestors.

I was brought back to the emergency room in America after an overhead announcement snapped me out of this kind memory. I evaluated the new patient. Although his urine was positive for cocaine, his history and mental status exam suggested he had been experiencing depressive symptoms for some time as well.

Despite occurring approximately 10,000 miles apart, I can’t help but notice the similarities and differences. Irrespective of location, when assessing prognosis and risk stratification, I go through the same thought process in my head.

When I trained in India, I never once worried about insurance, utilization reviews, or logistical barriers to care. Most patients I saw in India would have seen a

religious practitioner akin to a “shaman” before a psychiatrist.

There were no resources for my patient in India to see a therapist after he was hospitalized on inpatient medicine and then inpatient psychiatry. I spent time educating the family about mental illness, along with treatments such as medication and psychotherapy. I focused on psychoeducation in the hope that he would continue to take this medication. I remember how the whole family crowded around me with deep attention when I discussed mental health resources. They shared abundant gratitude toward me for taking the time.

Coming back to the present again, my patient was admitted to inpatient medicine and followed by the psychiatry consult service. I learned that this patient had a mother who could support him. This thought gave me comfort, as she had reminded me of that family back in Chennai. Regardless of setting or culture, I was pleased with the thought that both of these patients had families that cared for them. That alone is something to be grateful for.

Dr. Madhanagopal is a third-year resident in the Department of Psychiatry at Duke University Health System, Durham, N.C.

Call for Applications to Join the 2017 Editorial Board

The *American Journal of Psychiatry—Residents' Journal* is now accepting applications to join the 2017–2018 Editorial Board for the following positions:

SENIOR DEPUTY EDITOR POSITION 2017

Job Description/Responsibilities

- Frequent correspondence with AJP-Residents' Journal Editorial Board and AJP professional editorial staff, including a monthly conference call.
- Frequent correspondence with authors.
- Peer review manuscripts on a weekly basis.
- Make decisions regarding manuscript acceptance.
- Work with AJP editorial staff to prepare accepted manuscripts for publication to ensure clarity, conciseness, and conformity with AJP style guidelines.
- Coordinate selection of book review authors and distribution of books with AJP professional editorial staff.
- Recruit authors and guest editors for the journal.
- Manage the *Test Your Knowledge* questions and work closely with authors in developing Board-style review questions for the *Test Your Knowledge* section.
- Collaborate with the Editor-in-Chief in selecting the 2018 Senior Deputy Editor, Deputy Editor, and Associate Editors.
- Attend and present at the APA Annual Meeting.
- Commitment averages 10–15 hours per week.

Requirements

- Must be an APA resident-fellow member.
- Must be starting as a PGY-3 in July 2017, or a PGY-4 in July 2017 with plans to enter an ACGME fellowship in July 2018.
- Must be in a U.S. residency program.

Selected candidate will be considered for a 2-year position, including advancement to Editor-in-Chief.

DEPUTY EDITOR POSITION 2017

Job Description/Responsibilities

- Frequent correspondence with Residents' Journal Editorial Board and AJP professional editorial staff, including a monthly conference call.
- Frequent correspondence with authors.

- Peer review manuscripts on a weekly basis.
- Make decisions regarding manuscript acceptance.
- Work with AJP editorial staff to prepare accepted manuscripts for publication to ensure clarity, conciseness, and conformity with AJP style guidelines.
- Prepare a monthly *Residents' Resources* section for the Journal that highlights upcoming national opportunities for medical students and trainees.
- Recruit authors and guest editors for the journal.
- Collaborate with the Editor-in-Chief in selecting the 2018 Senior Deputy Editor, and Associate Editors.
- Attend and present at the APA Annual Meeting.
- Commitment averages 10 hours per week.

Requirements

- Must be an APA resident-fellow member.
- Must be a PGY-2, PGY-3, or PGY-4 resident starting in July 2017, or a fellow in an ACGME fellowship in July 2017.
- Must be in a U.S. residency program or fellowship.

This is a 1-year position only, with no automatic advancement to the Senior Deputy Editor position in 2018. If the selected candidate is interested in serving as Senior Deputy Editor in 2018, he or she would need to formally apply for the position at that time.

ASSOCIATE EDITOR POSITIONS 2017 (two positions available)

Job Description/Responsibilities

- Peer review manuscripts on a weekly basis.
- Make decisions regarding manuscript acceptance.
- Recruit authors and guest editors for the journal.
- Collaborate with the Senior Deputy Editor, Deputy Editor, and Editor-in-Chief to develop innovative ideas for the Journal.
- Attend and present at the APA Annual Meeting.
- Commitment averages 5 hours per week.

Requirements

- Must be an APA resident-fellow member.

- Must be a PGY-2, PGY-3, or PGY-4 resident in July 2017, or a fellow in an ACGME fellowship in July 2017.
- Must be in a U.S. residency program or fellowship.

This is a 1-year position only, with no automatic advancement to the Deputy Editor or Senior Deputy Editor position in 2018. If the selected candidate is interested in serving as Deputy Editor or Senior Deputy Editor in 2018, he or she would need to formally apply for the position at that time.

MEDIA EDITOR POSITION 2017 (one position available)

Job Description/Responsibilities

- Manage our Twitter and Facebook accounts
- Oversee podcasts
- We are open to many suggestions within reason
- Collaborate with the associate editors to decide on content
- Collaborate with Senior Deputy Editor, Deputy Editor, and Editor-in-Chief to develop innovative ideas for the Journal.
- Attend and present at the APA Annual Meeting.
- Commitment averages 5 hours per week.

Requirements

- Must be an APA resident-fellow member.
- Must be an upcoming PGY-2, PGY-3, or PGY-4 resident in July 2017, or a fellow in an ACGME fellowship in July 2017.
- Must be in a U.S. residency program or fellowship.

This is a 1-year position only, with no automatic advancement to the Deputy Editor or Senior Deputy Editor position in 2018. If the selected candidate is interested in serving as Deputy Editor or Senior Deputy Editor in 2018, he or she would need to formally apply for the position at that time.

For all positions, applicants should email a CV and personal statement of up to 750 words describing their reasons for applying, as well as any ideas for journal development to Rachel.Katz@yale.edu.

The deadline for applications is 3/2/2017.

APA/APAF FELLOWSHIPS

APA/APAF Leadership Fellowship

The aim of the APA/APAF Leadership Fellowship is to develop leaders in the field of organized psychiatry by providing opportunities for residents to engage, interact and participate at a national level and further develop their professional leadership skills, networks and psychiatric experience.

Child and Adolescent Psychiatry Fellowship

The Child and Adolescent Psychiatry Fellowship is designed to promote interest and a career in child and adolescent psychiatry.

Diversity Leadership Fellowship

The Diversity Leadership Fellowship is designed to develop leadership to improve the quality of mental health care for the following (not limited to) minority groups at risk and underrepresented in psychiatry.

Jeanne Spurlock Congressional Fellowship

The aim of the fellowship is to provide an opportunity for a senior psychiatry resident with significant interest in child and/or minority mental health advocacy to work in a congressional office.

Public Psychiatry Fellowship

The aim of the Public Psychiatry Fellowship is to create the next generation leaders in public psychiatry. This program creates opportunities for residents to engage in several mentorship sessions, conduct public psychiatry program site visits, and interact with thought leaders in the field of public psychiatry.

SAMHSA Funded Minority Fellowship Program

The goal of the APA SAMHSA Minority Fellowship is to enhance the knowledge and capabilities of racial and ethnic minority psychiatry residents to teach, administer, conduct services research and provide culturally competent, evidence-based mental health services to minorities and underserved populations. Minorities and applicants interested in serving minority and/or underserved populations are encouraged to apply.

SAMHSA Funded Substance Abuse Minority Fellowship Program

The goal of the APA SAMHSA Substance Abuse Minority Fellowship is to enhance the knowledge and capabilities of racial and ethnic minority psychiatry residents to teach, administer, conduct services research and provide culturally competent, evidence-based mental health services to minorities and underserved populations. Minorities and applicants interested in serving minority and/or underserved populations are encouraged to apply.

Psychiatric Research Fellowship

The fellowship provides funding for an early research career psychiatrist to design and conduct a health services/policy-related research study using national data housed at the APA. The fellow's research activities will be carried out under the supervision and guidance of a mentor at his/her institution in collaboration with his/her mentor(s) at the APA Division of Research.

FOR MORE INFORMATION VISIT US AT ONLINE AT WWW.PSYCHIATRY.ORG/FELLOWSHIPS

Residents' Resources

Here we highlight upcoming national opportunities for medical students and trainees to be recognized for their hard work, dedication, and scholarship.

**To contribute to the Residents' Resources feature, contact Oliver Glass, M.D., Deputy Editor (glassol@ecu.edu).*

JANUARY DEADLINES

Fellowship/Award, Organization, and Deadline	Brief Description and Eligibility	Contact and Website
Jeanne Spurlock Congressional Fellowship APA Deadline: January 30, 2017	The aim of the fellowship is to provide an opportunity for a psychiatry resident or early-career psychiatrist with significant interest in child and/or minority mental health advocacy to work in a congressional office. The recipient will serve a 10-month fellowship in Washington, DC, during which he/she will be introduced to the structure and development of federal and congressional health policy focused on mental health issues affecting minorities and underserved populations, including children. • APA member; • Must be a U.S. citizen or permanent resident; • Psychiatry resident, fellow or early-career psychiatrist.	Brandon Batiste, M.P.H. Phone: (703) 907-8653 e-mail: congressional@psych.org https://www.psychiatry.org/residents-medical-students/residents/fellowships/about/spurlock-congressional-fellowship
SAMHSA Minority Fellowship APA Deadline: January 30, 2017	To enhance the knowledge and capabilities of racial and ethnic minority psychiatry residents to teach, administer, conduct services research and provide culturally competent, evidence-based mental health services to minority and/or underserved populations. • APA member; • Must be at least a PGY-2 and remain in training the entire duration fellowship • U.S. citizen or permanent resident; • Federal employees and individuals on temporary or student visas are ineligible.	Tatiana P. Claridad Phone: (703) 907-7894 e-mail: apamfp@psych.org https://www.psychiatry.org/residents-medical-students/residents/fellowships/about/samhsa-minority-fellowship
APA Leadership Fellowship APA Deadline: January 30, 2017	To develop leaders in the field of organized psychiatry by providing opportunities for residents to engage, interact, and participate at a national level and further develop their professional leadership skills, networks, and psychiatric experience. • APA member; • Enrolled as PGY-2 in an accredited U.S. or Canadian psychiatry residency program; • Passed appropriate board examinations; • Need not be a U.S. citizen or permanent resident, or a graduate of a U.S. medical school.	Sejal Patel Phone: (703) 907-8579 e-mail: psychleadership@psych.org https://www.psychiatry.org/residents-medical-students/residents/fellowships/about/american-psychiatric-leadership-fellowship
Diversity Leadership Fellowship APA Deadline: January 30, 2017	To develop leadership to improve the quality of mental health care for the following (not limited to) minority groups at risk and underrepresented in psychiatry: American Indians/Native Alaskans, Asian Americans/Native Hawaiians/Native Pacific Islanders, Blacks/African Americans, Hispanics/Latinos, and the LGBTQ community. • APA member; • Need not be a U.S. citizen or permanent resident, or a graduate of a U.S. medical school; • Must be at least PGY-2 and remain in training the entire duration fellowship; • Federal employees are ineligible; • All applicants are welcome to apply regardless of race, ethnicity, gender, national origin, religion, sexual orientation or disability.	Tatiana P. Claridad Phone: (703) 907-7894 e-mail: mfp@psych.org https://www.psychiatry.org/residents-medical-students/residents/fellowships/about/diversity-leadership-fellowship
Child and Adolescent Psychiatry Fellowship APA Deadline: January 30, 2017	To promote interest and a career in child and adolescent psychiatry. • APA member; • At least a PGY-2 in an accredited U.S. or Canadian psychiatry residency program; • Need not be a U.S. citizen or permanent resident, or a graduate of a U.S. medical school.	Tatiana Claridad Phone: (703) 907-7894 e-mail: tclaridad@psych.org https://www.psychiatry.org/residents-medical-students/residents/fellowships/about/child-and-adolescent-psychiatry-fellowship

Author Information for *The Residents' Journal* Submissions

Editor-in-Chief

Katherine Pier, M.D.
(Icahn School of Medicine)

Senior Deputy Editor

Rachel Katz, M.D.
(Yale)

Deputy Editor

Oliver Glass, M.D.
(East Carolina)

The Residents' Journal accepts manuscripts authored by medical students, resident physicians, and fellows; attending physicians and other members of faculty cannot be included as authors.

To submit a manuscript, please visit <http://mc.manuscriptcentral.com/appi-ajp>, and select a manuscript type for *AJP Residents' Journal*.

1. **Commentary:** Generally includes descriptions of recent events, opinion pieces, or narratives. Limited to 500 words and five references.
2. **History of Psychiatry:** Provides a historical perspective on a topic relevant to psychiatry. Limited to 500 words and five references.
3. **Treatment in Psychiatry:** This article type begins with a brief, common clinical vignette and involves a description of the evaluation and management of a clinical scenario that house officers frequently encounter. This article type should also include 2–4 multiple choice questions based on the article's content. Limited to 1,500 words, 15 references, and one figure. This article type should also include a table of Key Points/Clinical Pearls with 3–4 teaching points.

4. **Clinical Case Conference:** A presentation and discussion of an unusual clinical event. Limited to 1,250 words, 10 references, and one figure. This article type should also include a table of Key Points/Clinical Pearls with 3–4 teaching points.
5. **Original Research:** Reports of novel observations and research. Limited to 1,250 words, 10 references, and two figures. This article type should also include a table of Key Points/Clinical Pearls with 3–4 teaching points.
6. **Review Article:** A clinically relevant review focused on educating the resident physician. Limited to 1,500 words, 20 references, and one figure. This article type should also include a table of Key Points/Clinical Pearls with 3–4 teaching points.
7. **Drug Review:** A review of a pharmacological agent that highlights mechanism of action, efficacy, side-effects and drug-interactions. Limited to 1,500 words, 20 references, and one figure. This article type should also include a table of Key Points/Clinical Pearls with 3–4 teaching points.

8. **Perspectives in Global Mental Health:** This article type should begin with a representative case or study on psychiatric health delivery internationally, rooted in scholarly projects that involve travel outside of the United States; a discussion of clinical issues and future directions for research or scholarly work should follow. Limited to 1,500 words and 20 references.
9. **Arts and Culture:** Creative, nonfiction pieces that represent the introspections of authors generally informed by a patient encounter, an unexpected cause of personal reflection and/or growth, or elements of personal experience in relation to one's culture that are relevant to the field of psychiatry. Limited to 500 words.
10. **Letters to the Editor:** Limited to 250 words (including 3 references) and three authors. Comments on articles published in the *Residents' Journal* will be considered for publication if received within 1 month of publication of the original article.
11. **Book and Movie Forum:** Book and movie reviews with a focus on their relevance to the field of psychiatry. Limited to 500 words and 3 references.

Upcoming Themes

If you have a submission related to the themes shown at right, contact the Section Editor listed below the topic.

Please note that we will consider articles outside of the theme.

If you are interested in serving as a **Guest Section Editor** for the *Residents' Journal*, please send your CV, and include your ideas for topics, to Katherine Pier, M.D., Editor-in-Chief (katherine.pier@mssm.edu).

Mental Health of Healthcare Providers

Charles Johnson, M.D., charles.a.johnson@ucdenver.edu

LGBT Mental Health

Mark Messih, M.D., M.Sc., mark.messih@gmail.com

War, Terror, and Psychopathology

Anna Kim, M.D., Anna.Kim@mountsinai.org