

CASE RECORDS of the MASSACHUSETTS GENERAL HOSPITAL

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## Case 28-2021: A 37-Year-Old Woman with Covid-19 and Suicidal Ideation

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and Jacqueline T. Chu, M.D.

### PRESENTATION OF CASE

*Dr. Reuben A. Hendler (Psychiatry):* A 37-year-old woman was admitted to this hospital because of fever, shortness of breath, and suicidal ideation in March 2020, during the pandemic of coronavirus disease 2019 (Covid-19).

Ten days before this admission, fever, fatigue, sore throat, cough, and myalgias developed. The symptoms did not abate after the patient took aspirin and acetaminophen. Five days before this admission, she sought evaluation at the urgent care clinic of this hospital because Covid-19 had been diagnosed in two coworkers. A test for Covid-19 was not performed because of limited test availability; tests for influenza A and B viruses and respiratory syncytial virus were not performed because of a statewide shortage of nasopharyngeal swabs. The patient was instructed to quarantine at home.

During the next 5 days, the patient quarantined in a room in her apartment. Her husband periodically brought food to the door of the room. The fever, fatigue, sore throat, cough, and myalgias persisted; new shortness of breath and anosmia developed. She had decreased appetite, and she consumed minimal food and drink.

One day before this admission, nausea, vomiting, and diarrhea developed, and the patient sought evaluation at the emergency department of another hospital. Intravenous fluid, ondansetron, and ketorolac were administered, and she was discharged home with instructions to continue to quarantine.

On the day of admission, the patient had dizziness while standing, as well as shortness of breath, and she returned to the urgent care clinic of this hospital. The temperature was 38.7°C, the heart rate 127 beats per minute, the respiratory rate 38 breaths per minute, and the oxygen saturation 97% while she was breathing ambient air. The patient was anxious and tearful. The lungs were clear on auscultation. Intravenous fluid, ondansetron, and oral acetaminophen were administered. The dizziness resolved, and the fever, shortness of breath, and anxiety decreased. The patient was advised to return home to quarantine; however, she disclosed that if she were sent home, she planned to overdose on medications to die by suicide because of her anxiety and feelings of sadness and loneliness. Owing to concern

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about the patient's risk of harming herself, an order authorizing temporary involuntary hospitalization was implemented. Emergency medical services were called, and the patient was brought to the emergency department.

On evaluation in the emergency department, the patient reported anxiety, palpitations, and shortness of breath and noted that her anxiety and feelings of isolation and loneliness had developed during quarantine. She also reported poor sleep, decreased energy, and anhedonia. The patient described that she felt like a burden to her husband and was terrified that she would transmit severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) to her children, including her 4-year-old son, who had been born prematurely and had a congenital pulmonary condition.

In addition, the patient reported a 1-week history of new, recurring nightmares in which she would see herself playing with her own severed body parts; these nightmares occurred more frequently during periods of high fever. She intermittently had the sensation that someone was in the room with her while she was awake, even though she was aware that she was alone. She disclosed that, on the previous day, she had had new suicidal ideation associated with fear of transmitting SARS-CoV-2 to her family and that she had taken five aspirin–paracetamol–caffeine pills at once. There had been no history of suicidal ideation or attempt, self-harm, or homicidal ideation.

The patient had a history of depression and panic attacks when she was a teenager and had been treated for less than 1 year with a medication that she could not recall; the symptoms had resolved by 19 years of age, and there had been no mental health follow-up. She also had a history of migraines, which occurred four times per week. She took aspirin, acetaminophen, and aspirin–paracetamol–caffeine as needed; there were no known drug allergies. The patient was born in Central America and had been living in the United States for 19 years. She lived with her husband, four children, and mother-in-law in an urban area of New England in a community that was predominantly Latinx and that had a high rate of Covid-19–related infections and deaths. The patient did not complete high school while she was living in Central America and was currently employed full time in a food-production

factory. She reported that she enjoyed her job but that she had been reluctant to work during the Covid-19 pandemic because of concern about becoming ill; however, she described that she felt obligated to work to support her family. The patient did not smoke cigarettes, drink alcohol, or use illicit drugs. Her mother had died from cancer.

On examination, the temperature was 38.2°C, the blood pressure 148/84 mm Hg, the heart rate 110 beats per minute, the respiratory rate 22 breaths per minute, and the oxygen saturation 97% while the patient was breathing ambient air. She appeared well-groomed and fatigued, and she was tearful with a depressed and dysphoric mood. Her behavior was described as “sullen,” and there was limited eye contact and reduced psychomotor activity. Her speech, in Spanish, was fluent but was slow and mumbling, with reduced prosody. She had no derailment of thought, delusions, or obsessions, but she ruminated on her nightmares. She stated that she had no current suicidal ideation but that she might attempt suicide if she had to return to her children and expose them to SARS-CoV-2 again.

Nucleic acid testing of a nasopharyngeal swab for SARS-CoV-2 RNA was positive. Additional laboratory test results are shown in Table 1. Radiography of the chest revealed ground-glass opacities in the right middle and lower lobes and in the left lower lobe. Intravenous ceftriaxone, oral azithromycin, atorvastatin, and hydroxychloroquine were administered, and the patient was admitted to the hospital.

Management decisions were made.

#### DIFFERENTIAL DIAGNOSIS

*Dr. Carol S. North:* This 37-year-old woman had been feeling ill for 10 days, with symptoms that were consistent with Covid-19.<sup>1–5</sup> The patient divulged that she had a plan to overdose on medications to die by suicide and also that she had ingested five aspirin-based pills the day before the current admission. Clinical personnel had no knowledge of her suicidal ideation until she was informed of the plan to discharge her to home from her second urgent care visit, on the day that she was later admitted to the hospital. The history of ingestion of pills was not known until her inpatient evaluation.

When a patient has suicidal symptoms, it is

important to rule out the possibility of an active psychiatric disorder that requires identification and professional care.<sup>6,7</sup> This patient had no history of suicidal symptoms but had reportedly been treated for depression and panic attacks as a teenager, without known recurrence of psychiatric difficulties. Thus, her current psychiatric situation appears to have developed suddenly in the context of her SARS-CoV-2 illness within the larger pandemic and its social effects. Assessment of the patient's clinical history in conjunction with the criteria for mental disorders outlined in the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-5),<sup>8</sup> is prudent for consideration of potential psychiatric disorders that may be playing a role in this patient's clinical presentation. A suicide attempt in a young adult who had no psychiatric history and had acute Covid-19 has been reported previously,<sup>9</sup> but unlike the patient in this case, that patient had prominent confusion and florid psychotic symptoms.

#### MAJOR DEPRESSIVE DISORDER

At this point in the patient's history, it is not possible to diagnose major depressive disorder, although her presentation has several features suggestive of this diagnosis, including depressed mood, anhedonia, sleep disturbance, psychomotor retardation, loss of energy, anorexia, feelings of worthlessness (feeling like a burden to her family and having a fear of infecting them), and thoughts of suicide. However, this patient's symptoms had been present for only 5 days, and several of her symptoms could be related to medical illness (e.g., fatigue, loss of appetite, and insomnia). It is possible that the symptoms represent the development of a new depressive episode, especially given the patient's history of depression, but such a diagnosis cannot yet be made. Similarly, her recent history reveals anxiety symptoms but not panic attacks, and she did not have ongoing symptoms for 1 month, which is one of the requirements for a diagnosis of panic disorder. Shortness of breath can provoke symptoms of anxiety and panic, as can fear of illness resulting from exposure to a pathogen such as SARS-CoV-2.

#### POST-TRAUMATIC STRESS DISORDER

Literature regarding post-traumatic stress disorder (PTSD) related to the Covid-19 pandemic is

**Table 1. Laboratory Data.\***

| Variable                               | Reference Range, Adults† | On Admission |
|----------------------------------------|--------------------------|--------------|
| Hemoglobin (g/dl)                      | 12.0–16.0                | 13.2         |
| Hematocrit (%)                         | 36.0–46.0                | 38.2         |
| Platelet count (per $\mu$ l)           | 150,000–450,000          | 174,000      |
| White-cell count (per $\mu$ l)         | 4500–11,000              | 6660         |
| Differential count (per $\mu$ l)       |                          |              |
| Neutrophils                            | 1800–7700                | 5030         |
| Lymphocytes                            | 1000–4800                | 1570         |
| Monocytes                              | 200–1200                 | 60           |
| Urea nitrogen (mg/dl)                  | 8–25                     | 3            |
| Creatinine (mg/dl)                     | 0.60–1.50                | 0.55         |
| Alanine aminotransferase (U/liter)     | 7–33                     | 28           |
| Aspartate aminotransferase (U/liter)   | 9–32                     | 34           |
| Lactate dehydrogenase (U/liter)        | 110–210                  | 318          |
| Creatine kinase (U/liter)              | 40–150                   | 154          |
| High-sensitivity troponin T (ng/liter) | 0–9                      | <6           |
| Ferritin ( $\mu$ g/liter)              | 10–200                   | 267          |
| D-dimer (ng/ml)                        | <500                     | 551          |
| C-reactive protein (mg/liter)          | <8.0                     | 51.1         |
| Serum toxicology tests                 |                          |              |
| Acetaminophen ( $\mu$ g/ml)            | 0.0–25.0                 | 8.7          |
| Ethanol (mg/dl)                        | 0                        | 0            |
| Salicylates (mg/dl)                    | 0.0–20.0                 | <0.3         |
| Tricyclic antidepressants              | Negative                 | Negative     |
| Urine toxicology tests                 |                          |              |
| Amphetamines                           | Negative                 | Negative     |
| Barbiturates                           | Negative                 | Negative     |
| Benzodiazepines                        | Negative                 | Negative     |
| Cannabinoids                           | Negative                 | Negative     |
| Cocaine metabolites                    | Negative                 | Negative     |
| Opiates                                | Negative                 | Negative     |

\* To convert the values for urea nitrogen to millimoles per liter, multiply by 0.357.

† To convert the values for creatinine to micromoles per liter, multiply by 88.4.

‡ Reference values are affected by many variables, including the patient population and the laboratory methods used. The ranges used at Massachusetts General Hospital are for adults who are not pregnant and do not have medical conditions that could affect the results. They may therefore not be appropriate for all patients.

accruing rapidly, but this diagnosis is not plausible in this case, given that the DSM-5 criteria for a diagnosis of PTSD exclude naturally occurring illness, such as viral infection, from the definition of trauma.<sup>10,11</sup> A suggestive feature in

this patient's clinical presentation is the history of nightmares about playing with her own severed body parts; however, these are not nightmares related to exposure to the virus, which would be a required criterion to qualify as intrusive recollection symptoms associated with PTSD. Furthermore, there are no other PTSD symptoms, and the current episode of symptoms has lasted far less than the 1 month required to establish this diagnosis.

#### ADJUSTMENT DISORDER

A diagnosis of adjustment disorder would require determination that the distress is out of proportion to the severity or intensity of the stressor. Given this patient's personal risk as an essential worker and her understandable concerns about potentially catastrophic or fatal viral exposure to herself and her family members during the Covid-19 pandemic, application of this diagnosis would not be warranted.

The patient's bizarre nightmares could potentially arise from her febrile state. Her otherwise intact orientation and cognitive capacities do not suggest delirium, dementia, or another neurocognitive disorder resulting from SARS-CoV-2 infection.<sup>12,13</sup> There are no accompanying features of psychosis, such as distinct hallucinations, delusions, or thought disorder, that would suggest new development of a primary psychotic illness.

#### SOMATOFORM DISORDERS

The revised criteria for somatoform disorders in the DSM-5 are excessively broad, as exemplified by the new diagnosis of somatic symptom disorder, which is established in patients who are found to have a disproportionate concern about the seriousness of their illness or persistent anxiety about health concerns. Regardless, the presentation of symptoms in this patient does not reflect such characteristics, given the acute development of her suicidal symptoms. Malingering differs fundamentally from somatoform processes, and even though the patient expressed suicidal ideation as a response to discharge from the urgent care clinic, she did not have other features, such as personality disorder or uncooperativeness, that are included in the diagnostic criteria for malingering.

The patient works full time and supports a family that includes four children, a husband, and

the husband's mother, all of whom live together with her. Her longstanding management of these responsibilities and stressors bodes well for her psychosocial outcome. However, the baseline stressors of her life under these conditions are unknown and will need further exploration to fully determine her potential ability to function in her life roles and her need for social support on the basis of the stressors she may face after hospital discharge. Her Central American origin and residence for the first half of her life suggest a possible influence of cultural factors in her current presentation, but she has expressed her psychiatric symptoms in unmistakable language that maps directly to the U.S. concepts of psychopathology such as depression, anxiety, and suicidal ideation.

#### DISASTER MENTAL HEALTH

Established principles of disaster mental health that have converged over decades of research address the assessment and management of emotional and psychiatric responses of persons to disasters<sup>14-16</sup> and have relevance to patients presenting for medical care in the context of the current pandemic. The underlying principles are that persons with psychiatric disorders need to be identified and connected with appropriate psychiatric care and that the distress of other members of affected populations is best addressed through psychosocial interventions, such as psychological first aid, without labeling the normative responses to disaster trauma as abnormal. This patient will benefit from observation for the development of a recurrent depressive or anxiety disorder, as well as attention to address her understandable emotional distress. A mental health professional can assess any psychiatric illness that may develop and can assist in the psychosocial aspects of her recovery from her illness through psychotherapeutic interventions including psychosocial support, education, reassurance, and assistance with resumption of her previous level of functioning.

In my opinion, this patient is having understandable psychosocial distress in the context of a serious medical illness during the Covid-19 pandemic. The key to understanding this case is to acknowledge that this patient's distress is a normative response and does not meet criteria for a psychiatric diagnosis.

## DR. CAROL S. NORTH'S DIAGNOSIS

Understandable psychosocial distress in the context of serious illness during the Covid-19 pandemic.

DISCUSSION OF SUICIDALITY  
ASSOCIATED WITH ACUTE STRESS

*Dr. Emily M. Sorg:* Although the development of Covid-19 in this patient motivated her to present for care, it was her report of suicidal ideation that led to hospitalization. On admission, measures were taken to ensure her safety while a psychiatric evaluation was performed. The goals of such an evaluation in the inpatient medical setting are to assess short-term safety risk; to identify contributing factors to suicidal ideation or behavior, including (but not limited to) a psychiatric disorder; to provide treatment as needed; and to refer the patient to appropriate resources for ongoing care and support.

From a safety perspective, the patient's preference to live was evident in her repeated presentations for medical care. She reported having been physically and mentally well before the development of Covid-19 and, apart from the circumstances of her illness and quarantine, did not wish to die. She stated that she did not intend to attempt suicide while she was in the hospital and that she had suicidal thoughts only when considering discharge home. These thoughts were not an attempt to use the hospital as refuge; they represented a genuine weighing of what she saw as her available options. During her hospital stay, she was monitored closely, and she received care for her Covid-19 symptoms; she was kept safely away from her family to alleviate her sense of being a burden and her fear of spreading infection. Thus, her immediate risk of harming herself during the hospitalization was thought to be low. Direct observation and suicide precautions were discontinued.

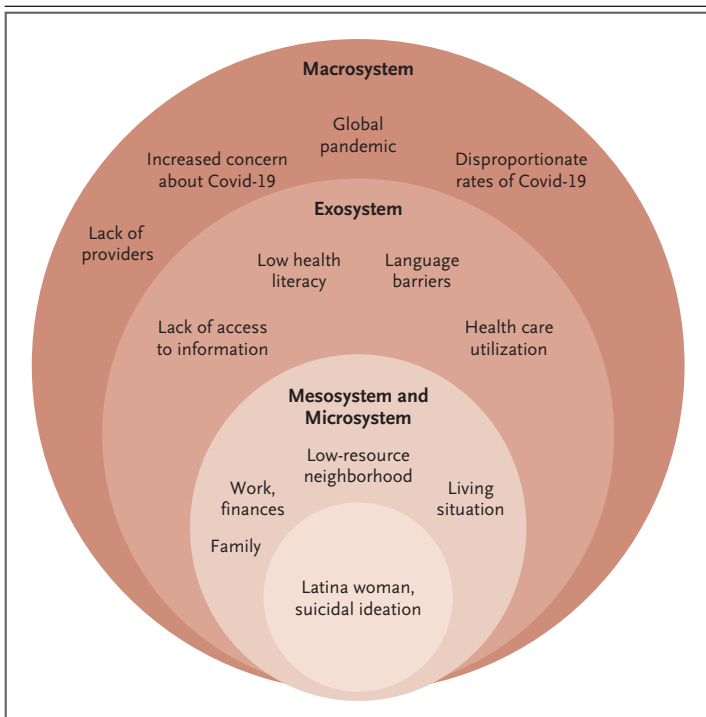
The patient's current situation and level of stress were key features in this case. She faced Covid-19 during the first wave of the pandemic as a person who was multiply marginalized. After having known exposures in the workplace, she repeatedly sought medical care for escalating viral symptoms, and she began having thoughts of suicide when her only option was to return

home to quarantine (a spatial challenge in her living situation), where she feared that her symptoms would worsen and that she would fatally infect her children.

How might this patient's symptoms of anxiety, depression, and suicidal ideation be best understood? Her psychological symptoms did not correlate with diagnostic criteria for a psychiatric disorder, although any diagnosis made during a cross-sectional assessment in extreme circumstances is provisional at best. A diagnosis of adjustment disorder could reasonably be considered, given the seriousness of suicidal ideation. The DSM-5 criterion that the person's distress be "out of proportion to the severity or intensity of the stressor" should be considered in the context of the stress caused by the pandemic, especially in communities of color that have been disproportionately affected by Covid-19. In Boston, Spanish-speaking persons with limited English proficiency represented at one point more than 40% of the patients who were admitted to our hospital because of Covid-19; rates were even higher in other parts of the country.<sup>17,18</sup> In a nationwide survey from April and May 2020, 40.3% of Hispanic and Latinx responders reported depression and 22.9% had suicidal thoughts, as compared with 25.3% and 5.3% of White responders, respectively.<sup>19</sup> What does this patient's occurrence of suicidal ideation signify, if nearly one fourth of Hispanic and Latinx persons felt the same? Who, or what, is sick?

The way we frame this patient's distress — either as psychopathological or as a normative response to an unprecedented crisis — is important. A normative response does not belie her need for care. However, framing it as "disordered" privatizes her stress and risks placing the locus of pathologic manifestation on the individual person and her internal processes while ignoring the myriad structural factors that amplified her suffering and arguably merit equal attention.<sup>20</sup>

Additional psychological symptoms, although nonspecific in the context of viral illness and cytokine-induced sickness behavior, were uncomfortable and distressing to the patient. Sickness behavior refers to a set of adaptive behavioral changes that the body undergoes to conserve energy and prioritize recovery from infection; many of these changes can mimic the neurovegetative symptoms of depression.<sup>21</sup> The patient



**Figure 1. Ecological Framework of Factors That May Have Affected This Patient's Mental Health.**

Shown are the factors that may have affected the patient's mental health, according to the systems described in Bronfenbrenner's ecological systems theory. The microsystem includes the immediate environment and the factors that directly affect an individual person. The mesosystem refers to the relationships among these factors within the microsystem. The exosystem includes the larger social system context, which may not affect the individual person directly but does affect the person indirectly through interaction with the microsystem. The macrosystem encompasses the larger cultural context, including the broader economy, cultural values, and political system where the person resides. The chronosystem is not shown in the figure, and the mesosystem and microsystem factors have been combined for ease of presentation.

was particularly troubled by vivid nightmares, which had correlated with periods of high fever. Treatment with the alpha-1 adrenergic antagonist prazosin was started with the goal of reducing adrenergic activity in the central nervous system. Prompt resolution of the nightmares was reported the next day, which suggests either a treatment effect or spontaneous remittance. To address persistent disturbances in sleep and appetite, nightly treatment with mirtazapine, a noradrenergic and specific serotonergic antidepressant, was started. Mirtazapine is commonly prescribed in the hospital setting for presentations of adjustment disorder, probably owing to its antihistaminergic sedating effect and its ac-

ceptable side-effect profile.<sup>22</sup> She reported improvement in sleep and oral intake over the course of the next 48 hours, although these effects occurred in the context of diminishing medical symptoms. Social work and spiritual care services provided coping support.

#### DISCUSSION OF MENTAL HEALTH IN LATINX POPULATIONS

*Dr. Soojeong Youn:* This case highlights the importance of attending to the intricate, multilevel, systemic factors that affect the mental health experience and clinical presentation of patients, especially among patients such as this one, who identified as Latina. Bronfenbrenner's ecological systems theory<sup>23,24</sup> can be used to provide a contextual framework to understand the complexity of systemic factors that differentially affect the mental health of Latinx patients<sup>25</sup> and to understand the way in which such factors may have affected this patient specifically (Fig. 1).

The patient identified as a Latina woman who prioritized her sense of self as a mother,<sup>26</sup> living with her husband, mother-in-law, and children, including a child who has a pulmonary disease, in a crowded, urban home. They live in a neighborhood that is predominantly Latinx, with high rates of Covid-19–related infections and deaths<sup>27</sup> and a high level of concern related to the virus.<sup>28</sup> At the time of this patient's admission, information that was accessible to the patient with regard to the virus, symptoms, and progression of the disease was lacking, possibly owing to the fact that she spoke predominantly Spanish,<sup>29</sup> and this lack of information increased the fear about the virus and the uncertainty that comes with having contracted it. She depended on her work in food production for her family's financial stability,<sup>30</sup> and therefore, even though she wanted to stay home for fear of infection and to protect her family, she felt obligated to work.<sup>31</sup>

To quarantine effectively, this patient had to take over one of the bedrooms in her crowded home; she was unable to leave the room or to see her children or husband, while being able to hear everything that was going on outside of the room. Her quarantining in a room probably led to a reorganization of where the rest of the family resided within her home, and her husband was left to take care of the children, which increased her sense of being a burden to her loved ones.<sup>31</sup>

If we were to think about the patient's symptoms in a vacuum and focus only on the presenting suicidal ideation, we would miss the myriad contextual factors that led to this Latina mother's despair and presentation. Only when we evaluate all the available data can we determine and assess the best course of action and treatment for this patient and all patients who present for care.

#### RESOURCES FOR MENTAL HEALTH IN LATINX POPULATIONS

*Dr. Jacqueline T. Chu:* Covid-19 has disproportionately affected racial and ethnic minorities in the United States, particularly Latinx, Black, and Native American communities. Social determinants of health are thought to be major drivers of differences in the incidence and severity of Covid-19.

The Centers for Disease Control and Prevention developed recommendations for multiple stakeholders to promote health equity.<sup>32</sup> Health care systems can facilitate dissemination of information, provide linguistically and culturally sensitive patient support, train staff to recognize and address implicit bias, increase availability and accessibility of Covid-19 testing and vaccination for populations that are disproportionately affected, and ensure equitable access to and provision of treatments.

Our community, a densely populated, low-income neighborhood where this patient lived and where our clinic is located, used this framework to respond to the Covid-19 pandemic. We quickly erected testing and clinical evaluation centers that included social service "rapid-response" teams of community health workers who connected patients to food, utility, and rental assistance. In this case, a cramped environment and income pressures caused the patient to feel

that she could not keep her family safe without an external form of support, and that feeling evoked hopelessness. Cases such as this one raised red flags. Our community reacted by developing hotel-based isolation centers similar to others that have opened around the world.<sup>32-36</sup>

As we slowly work toward recovery from the Covid-19 pandemic, we are challenged to face the reality that improvement in social determinants of health warrants systemic solutions that unite stakeholders. We can remain hopeful that successful programs from the Covid-19 era provide stress-tested blueprints to help the most vulnerable populations.

#### FOLLOW-UP

*Dr. Sorg:* By hospital day 5, the patient's physical and psychological symptoms had abated, and she was ready to return home to her family. She remained anxious about the risk of infecting her children, albeit less than before, and she was more confident in her ability to keep them safe. Given the possibility that her symptoms could progress to a syndromic psychiatric disorder, a referral for outpatient mental health follow-up within her primary care clinic was placed at the time of discharge. Two weeks later, when the patient was seen in follow-up with a psychiatrist and a social worker, she reported ongoing resolution of psychological symptoms, with no recurrence of suicidal thoughts. She reported a good appetite, improved sleep, and an optimistic mood.

#### FINAL DIAGNOSIS

Fear associated with coronavirus disease 2019 (Covid-19), causing suicidal ideation.

This case was presented at Psychiatry Grand Rounds.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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