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UNBIASED INFORMATION COVERING HOSPITAL PSYCHIATRY

### Psychiatric Medication-Induced Hyperprolactinemia

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Dr. Karavitaki has disclosed that she has given webinars for Pfizer on the topic of acromegaly in February 2021 and January 2022. Dr. Hendrick has reviewed the content of this interview and determined that there is no commercial bias as a result of these financial relationships. Dr. Fountas has disclosed no relevant financial or other interests in any commercial companies pertaining to this educational activity.

**A** 26-year-old female patient with schizophrenia tells you she is certain she is pregnant. You run a pregnancy test, which comes back negative, but she continues to insist that she is pregnant “because I haven’t had a period in three months.” She began

#### Highlights From This Issue

**Feature article**—Hyperprolactinemia is a common yet often unrecognized side effect of many medications. We discuss how to identify and manage this condition.

**Feature Q&A**—Dr. Daryl Knox shares strategies to reduce the use of seclusion and restraints in EDs and inpatient units.

**Page 6**—EmPATH units are becoming more widespread. Dr. Kimberly Nordstrom describes their novel approach to the management of behavioral health emergencies.

**Page 8**—Our patients often present with common, uncomplicated medical conditions. We review steps for their management.

*risperidone 2 mg twice daily about four months earlier. You check her prolactin level, and it is 105 ng/mL.*

Continued on page 4

**Victoria Hendrick, MD**  
**Editor-in-Chief**

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#### IN THIS ISSUE

##### Focus of the Month: Minimizing Use of Restraints

Psychiatric Medication-Induced Hyperprolactinemia	1
Expert Q&A: Minimizing the Use of Seclusion and Restraints Daryl Knox, MD	1
Expert Q&A: EmPATH Units: An Innovative Approach to Mental Health Crises Kimberly Nordstrom, MD, JD	6
Treating Common Medical Conditions in Patients With Chronic Mental Illnesses	8
Tables:	
• Common Manifestations of HPRL	4
• Prevalence of HPRL in Patients Taking Antipsychotics	4
• Causes of HPRL Besides Antipsychotic Medication	5
• HPRL Management Strategies	5
• Risk Factors for Cardiovascular Disease	8
• Statin Therapy	8
• Summary of Treatments for Common, Uncomplicated Conditions	9
Research Updates:	10
• Lithium Exposure In Utero—How Bad Is It Really?	
• Antidepressants for Suicidal Ideation in Depressed Patients?	
CME Test	11
Note From the Editor-in-Chief	12

#### Learning Objectives

After reading these articles, you should be able to:

1. Identify and treat hyperprolactinemia in patients taking antipsychotic medications.
2. Implement EmPATH model and de-escalation practices to minimize the use of seclusion and restraints.
3. Assess and treat common medical conditions among hospitalized patients with chronic mental illnesses.
4. Summarize some of the current research findings on psychiatric treatment.

### Minimizing the Use of Seclusion and Restraints Daryl Knox, MD



*Associate Professor, Louis Faillace Department of Psychiatry and Behavioral Sciences, McGovern Medical School, The University of Texas Health Science Center at Houston. Houston, TX.*

Dr. Knox has disclosed no relevant financial or other interests in any commercial companies pertaining to this educational activity.



#### CHPR: Please tell us a little about yourself.

**Dr. Knox:** Previously I was the director of the psychiatric emergency setting at a large community health center, and later I was CMO of the Harris Center for Mental Health and IDD. At that time, I was also on the board of the American Association for Emergency Psychiatry and worked with Project BETA (Best Practices in the Evaluation and Treatment of Agitation) to produce articles on the best evidence for the treatment of agitation, including how to minimize the use of seclusion and restraints (S&R). At the time, Centers for Medicare and Medicaid Services (CMS) was citing many hospitals around S&R issues, so I co-wrote a paper to address this topic (Knox DK and Holloman GH Jr, *West J Emerg Med* 2012;13(1):35–40). Last year I joined the Department of Psychiatry at the University of Texas McGovern Medical School here in Houston.

Continued on page 2

# THE CARLAT REPORT: HOSPITAL PSYCHIATRY

Expert Interview — Minimizing the Use of Seclusion and Restraints

Continued from page 1

## **CHPR: Why was CMS citing hospitals around S&R issues?**

**Dr. Knox:** Hospitals that receive Medicare or Medicaid funds must follow CMS guidelines, and places get into trouble when CMS does a review and there's no documentation, for example, to justify the need for restraints. CMS has extensive rules and regulations that need to be followed, all geared toward patient safety. Institutions can lose financial backing if CMS deems that a hospital hasn't followed proper procedures (*Editor's note: CMS guidelines can be found at [www.tinyurl.com/sm3adksw](http://www.tinyurl.com/sm3adksw)*).

## **CHPR: How widespread is the use of physical restraint in psychiatric units and emergency departments (EDs)?**

**Dr. Knox:** Any setting that treats acutely mentally ill patients is probably going to have incidents of S&R because these patients are often in very agitated states and display impaired judgment and aggressive behavior. The use of S&R is even more widespread in large urban areas where there's a lot of drug use. Estimates of the use of restraints range widely, generally from about 4% to 20% in inpatient psychiatric wards and even higher, up to 30%, in EDs (Beghi M et al, *Riv Psichiatr* 2013;48(1):10-22; Downey LA et al, *Gen Hosp Psychiatry* 2007;29(6):470-474).

## **CHPR: I've noticed that the restraint data across hospitals vary widely, even when the patient populations are comparable. What factors are associated with higher use of S&R?**

**Dr. Knox:** Understaffing, inadequately trained staff, and staff burnout are all linked with higher levels. And there's less restraint use in environments where the staff get along well and have high levels of cooperation, compared with environments with high levels of hostility among staff (Vergallo GM and Gulino M, *Psychiatr Clin Psychopharmacol* 2021;31(4):468-473). Patients are perceptive. If there's a lot of bickering and disorganization among treatment staff, patients sense that and can feel more insecure and tense. Regular monitoring and debriefing of S&R incidents can often uncover staff morale as a root cause of rising trends.

## **CHPR: What types of patients are most likely to end up in S&R?**

**Dr. Knox:** Patients with psychotic illnesses, like schizophrenia or bipolar disorder, are more likely. Young people ages 24-34 are twice as likely to be placed in restraints as other groups, particularly males; Black and Latino patients are also significantly more likely to be restrained (Carreras Tartak JA et al, *Acad Emerg Med* 2021;28(9):957-965). If you're a large Black male, for instance, you may be perceived as more threatening, and staff might rush to use restraints rather than verbal de-escalation. It's important for those of us who work in emergency psychiatry settings to be attuned to our cultural biases and ask ourselves whether we have an environment that's inviting to people of diverse cultures.

## **CHPR: What are some risks from restraints?**

**Dr. Knox:** These incidents are humiliating and traumatic. Patients still tell me, years after a restraint incident, of the trauma they experienced. Also, patients and staff can get injured, and in extreme cases, restraints can be deadly. There have been several deaths of patients in restraints, especially when they are in the prone position, during which staff can inadvertently restrict a patient's breathing while applying physical restraints. And for staff who place the restraints, the experience can be emotionally scarring.

## **CHPR: Right. These are upsetting and difficult experiences for everyone involved.**

**Dr. Knox:** And they interfere with the therapeutic relationship. If a patient is restrained in their first encounter with psychiatry, they're more likely to be nonadherent to further mental health care. We must do whatever we can to make the encounter as nontraumatic and therapeutic as possible, especially when it's a patient's first encounter with psychiatry.

## **CHPR: What steps can hospitals take to reduce the use of S&R?**

**Dr. Knox:** A key concept is that hospital staff, beginning with the leadership, must understand that S&R represents a treatment failure. It should only be implemented when everything else has been tried. Studies have shown that changes in the institutional culture, where S&R is recognized not as just another treatment modality but rather as a last-resort intervention, generally work. For example, a large study in Pennsylvania looked at the impact of changes to hospitals' culture and attitudes about S&R. It found that the rate of seclusion dropped from 4.2 to 0.3 episodes per 1,000 patient days, the rate of restraint dropped from 3.5 to 1.2 episodes per 1,000 patient days, and the average length of time patients remained in restraints dropped from 12 hours to two hours (Smith GM et al, *Psychiatr Serv* 2005;56(9):1115-1122).

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Continued on page 3

# THE CARLAT REPORT: HOSPITAL PSYCHIATRY

Expert Interview – Minimizing the Use of Seclusion and Restraints

Continued from page 2

**CHPR:** It's amazing how a change to a hospital's culture can have such profound effects. Practically speaking, how do hospitals change their culture?

**Dr. Knox:** Hospital leadership must regularly communicate their nonrestraint values and monitor the use of S&R very closely. Once there's an S&R incident, it's important to debrief the incident with the staff involved and the patient. You want to see what went wrong, what went right, and how you could have intervened differently. I believe psychiatric units should have cameras so you can look at the footage. You want to review each incident with the people involved so you can learn from your mistakes and your successes. Other changes that help change a hospital's culture include improving patient-to-staff ratios and increasing patient activities, like art therapy and exercise groups.

**CHPR:** We installed cameras a few years ago to review and learn from incidents on the unit. They've also been helpful when a patient claims a staff member mistreated or injured them, so we review those incidents also.

**Dr. Knox:** Yes, absolutely. We had a lot of pushback from some staff initially who said, "Oh, you're spying on us." I said, "No, they're to monitor the treatment area and make sure everyone is safe, and also to help you when a patient makes an accusation about staff." We've had patients who make accusations when they're delusional, and the cameras help staff and administration see what actually occurred, often exonerating the accused staff.

**CHPR:** What else can we do to reduce the use of restraints?

**Dr. Knox:** We need to make sure we provide a healing environment. I've visited a number of psychiatric emergency settings and the spaces are often very cramped, with bright lights and garish colors. Psychiatric assessment areas are often shoe-horned into the leftover smaller spaces in the ED. Ideally the environment should have natural lighting, soothing colors, and lots of space so patients can move around. Another important point is to try to establish trust and rapport during the psychiatric intake process. Sometimes this process can feel like the patient is being booked into jail—it's important to reassure patients that we're here to help.

**CHPR:** We recently spoke with Dr. Kim Nordstrom about the EmPATH units that Dr. Scott Zeller created and that are expanding around the US. EmPATH units focus on having a calm, open milieu with lots of natural light, similar to what you're proposing (*Editor's note: See EmPATH unit Q&A in this issue*).

**Dr. Knox:** Yes, these therapeutic environments can help de-escalate agitated patients, but it's also helpful for the healing process to start even before the patient arrives. Here in the Houston area, law enforcement sometimes picks people up from the street while those people are highly agitated. We're fortunate to have highly trained law enforcement—all officers in the Houston Police Department are required to take crisis intervention training (CIT), which informs them about mental illness, de-escalation techniques, and the most appropriate resources for psychiatric care. Thus, when law enforcement officers bring patients to the ED or psychiatry emergency service (PES) department, the patients are often calm because they've already established rapport with the officers. Many times, individuals who had been aggressive and threatening when the officers picked them up are no longer in handcuffs by the time they arrive in the ED/PES. Harris County, where Houston is located, has about 60 law enforcement entities. Not all of them have taken CIT, and you can tell the difference. Many times, patients have arrived in restraints that could have been avoided if the law enforcement officers had gone through CIT.

**CHPR:** And once the patients have arrived, maybe we can assign staff with better people skills to work with the more agitated patients.

**Dr. Knox:** Absolutely. We try to have the staff person who has the most rapport with the patient talk to them. I tell people, too, that not everybody is cut out to work in mental health, especially crisis settings. If you're uncomfortable with people who talk, look, and behave strangely and who don't have the best hygiene, then you probably shouldn't work here; it's not everybody's cup of tea. But you also want to watch out for burnout among staff if only the same staff members are tasked with dealing with agitated patients. Ideally, all staff should be trained and able to work with challenging patients.

**CHPR:** Do you worry that by reducing the use of restraints, staff or other patients might face greater risks for injury?

**Dr. Knox:** When S&R reduction efforts are first initiated, there may be an uptick in staff injuries as staff may be reluctant to use these interventions even when they are indicated. But overall, programs that have successfully reduced their rates of S&R have not reported increased risks to staff or other patients. In fact, they have reported lower rates of injuries (Busch AB and Shore MF, *Harv Rev Psychiatry* 2000;8(5):261–270).

**CHPR:** We've talked mostly about the use of restraints. Could we use seclusion more often, in place of restraints?

**Dr. Knox:** Absolutely. Part of the de-escalation is providing choices and asking the patient what they prefer. Seclusion is often a sufficient intervention for patients—even open-door seclusion has a place. And similarly, you can often give patients a choice of oral medication as opposed to IM.

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**“In order to reduce the use of seclusion and restraints, hospital staff must understand that they represent treatment failures. Studies have shown that changes in the institutional culture, where seclusion and restraints are recognized not as regular treatment modalities but rather as last-resort interventions, generally work.”**

Daryl Knox, MD

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# THE CARLAT REPORT: HOSPITAL PSYCHIATRY

Expert Interview – Minimizing the Use of Seclusion and Restraints

Continued from page 3

**CHPR:** What tips can you give us about medications?

**Dr. Knox:** Unmedicated and actively psychotic patients pose a greater risk for assault, so we can reduce the rate of S&R by ensuring patients receive proper medications (*Editor's note: For more on this topic, see "Medications to Rapidly Treat Psychotic Agitation" in CHPR Oct/Nov/Dec 2021*). Be sure to adjust medications based on patients' responses and modify doses if they are receiving frequent PRN medications. Also, it's helpful to submit court petitions for involuntary medications sooner rather than later for agitated patients who need but refuse medications.

**CHPR:** Is there anything else we should know?

**Dr. Knox:** We sometimes see incidents increase when there's a shift change. When staff are coming in and other staff are leaving, they can become distracted and less vigilant, so we have to make sure that someone is paying attention to the patients. Dimming the lights and encouraging quiet time on the unit during these transitions can help.

**CHPR:** I'm glad you brought that up; it's definitely the case at my hospital. The other seemingly high-risk time is on weekends when there are fewer activities to keep patients occupied and engaged, so it's important to make sure patients don't start feeling bored and restless whenever possible.

**Dr. Knox:** Right. And again, I want to emphasize that the institution must start from the top down. To be effective in reducing S&R incidents, you need to have strong nursing and medical leadership, and you must have quality improvement processes in place to measure success. Once it's clear that leadership prioritizes the reduction of these incidents, they will diminish.

**CHPR:** Thank you for your time, Dr. Knox.



Psychiatric Medication-Induced Hyperprolactinemia

Continued from page 1

Most patients on antipsychotic medications have prolactin levels that are significantly higher than normal (>25 ng/mL for nonpregnant women and >16 ng/mL for men). You have most likely heard about missed menstrual cycles or galactorrhea (milky nipple discharge) from your female patients, while your male patients have probably complained of gynecomastia (enlarged breasts), impotence, and low sexual desire after taking antipsychotic medications. These are common manifestations of hyperprolactinemia (HPRL; see table for more). Certain antipsychotics are more likely to raise prolactin levels, especially paliperidone, risperidone, and many of the first-generation agents (see "Prevalence of HPRL in Patients Taking Antipsychotics" table).

Why do so many antipsychotics raise prolactin levels? Normally, dopamine inhibits prolactin synthesis and secretion. Since antipsychotics block dopamine receptors, the brakes that dopamine puts on prolactin are removed, leading to higher prolactin levels. First-generation antipsychotics produce more severe HPRL (two to three times the upper limit of reference range). In contrast, second-generation antipsychotics usually produce a milder prolactin increase due to their lower affinity for the D2 receptor, with the exceptions of paliperidone and

risperidone (which, especially at higher doses, increase prolactin similarly to first-generation antipsychotics).

You might be surprised to know that several antidepressants also cause HPRL, particularly clomipramine, mainly via serotonergic pathways. This effect is mostly mild and rarely symptomatic, although occasionally female patients will report galactorrhea or missed menstrual cycles; clomipramine appears to be the most likely to cause this side effect (Coker F and Taylor D, *CNS Drugs* 2010;24(7):563–574).

Continued on page 5

## Common Manifestations of HPRL

### In women:

- Amenorrhea (the absence of menstruation for at least three cycles)
- Oligomenorrhea (infrequent menstrual cycles occurring at intervals >35 days)

### In men:

- Anemia
- Decreased muscle mass
- Erectile dysfunction
- Gynecomastia
- Impaired spermatogenesis
- Low energy levels

### In both sexes:

- Decreased libido
- Galactorrhea (milky nipple discharge): mainly in pre-menopausal females
- Infertility
- Low bone mineral density

## Prevalence of HPRL in Patients Taking Antipsychotics

First-Generation Antipsychotics	HPRL in <25% of patients
	Loxapine
	Pimozide
	HPRL in >50% of patients
	Butyrophenones, eg:
	<ul style="list-style-type: none"> <li>• Droperidol</li> <li>• Haloperidol</li> </ul>
Second-Generation Antipsychotics	Phenothiazines, eg:
	<ul style="list-style-type: none"> <li>• Chlorpromazine</li> <li>• Fluphenazine</li> <li>• Mesoridazine</li> <li>• Perphenazine</li> <li>• Prochlorperazine</li> <li>• Thioridazine</li> <li>• Trifluoperazine</li> </ul>
	Thioxanthenes, eg:
	<ul style="list-style-type: none"> <li>• Thiothexene</li> </ul>
	No significant HPRL
	Aripiprazole
	Clozapine
	Ziprasidone
	HPRL in <25% of patients
	Olanzapine
Quetiapine	
HPRL in >50% of patients	
Paliperidone	
Risperidone	

Source: Adapted from Samperi I et al, *J Clin Med* 2019;8(12):2203

### Should we worry about HPRL?

It's easy to overlook HPRL because its symptoms are not readily apparent and patients are often embarrassed to tell us about them. However, prolactin-related side effects, if unaddressed, significantly increase medication nonadherence. HPRL causes hypogonadism by suppressing gonadotropin-releasing hormone, resulting in menstrual irregularities, infertility, and decreased libido in women. Men experience erectile dysfunction, reduced libido, impaired spermatogenesis, gynecomastia, anemia, decreased muscle mass, and low energy levels. Galactorrhea is a common manifestation of HPRL in pre-menopausal women; it is less frequent in post-menopausal women and rarely occurs in men.

Loss of bone density is one of the most significant long-term consequences of sustained HPRL. Many studies have reported significantly higher rates of osteoporosis and bone fractures in patients taking antipsychotic medications for schizophrenia (Stubbs B et al, *Gen Hosp Psychiatry* 2015;37(2):126–133).

### Diagnostic approach

We recommend getting a baseline prolactin level before patients begin a psychiatric medication that is likely to cause HPRL. Check this level again in three months—sooner if you see symptoms of hyperprolactinemia. A prolactin level can be drawn at any time of day, but a few things can artificially cause a transient rise in prolactin, including exercise, nipple stimulation, and even the stress of getting stuck by a needle.

What do you do if your patient's prolactin level is elevated? A first step is to rule out an elevated level of macroprolactin, which is a physiologically inactive form of prolactin. While few clinicians have heard about this, studies show that macroprolactin causes a false HPRL diagnosis in about 19% of cases (Che Soh NAA et al, *Int J Environ Res Public Health* 2020;17(21):8199). Unfortunately, not all labs offer this test. Assuming that no macroprolactin is present, your

next step is to exclude other causes of increased prolactin, such as pregnancy, hypothyroidism, and kidney or liver dysfunction (see “Causes of HPRL Besides Antipsychotic Medication” for more). A rare cause of high prolactin is a pituitary tumor, which typically presents with headaches and vision changes. If you stop the patient's antipsychotic and the HPRL persists, consider consulting an endocrinologist, who will likely order an MRI or CT scan to rule out a pituitary tumor.

### Management strategies

If your patient has asymptomatic HPRL, you don't need to do anything. Continue the antipsychotic and check prolactin annually.

For patients who have symptoms, switch to a different agent with “prolactin-sparing” potential, such as aripiprazole, clozapine, or ziprasidone. Another option is to decrease the dose, as psychiatric medication–induced HPRL is usually dose related—but patients' psychiatric symptoms might not respond well to lower antipsychotic doses. A nice psychopharm trick to have up your sleeve is adding low-dose aripiprazole (5–15 mg/day) as an adjunctive therapy. Aripiprazole reduces prolactin levels due to its partial agonistic activity at D2 receptors.

### Causes of HPRL Besides Antipsychotic Medication

- Nipple stimulation or chest wall injury
- Other medications (eg, metoclopramide, opioids)
- Polycystic ovarian syndrome
- Pregnancy, breastfeeding
- Primary hypothyroidism
- Prolactin-secreting pituitary adenoma
- Recent alcohol or drug use (cocaine, methamphetamine)
- Renal failure or liver cirrhosis
- Sellar/parasellar lesions
- Seizures
- Stress, venipuncture, exercise

### HPRL Management Strategies

#### Asymptomatic

- Conduct periodic prolactin monitoring (at least annual) and regular clinical assessments

#### Symptomatic

- Reduce medication dose
- Switch to a prolactin-sparing medication
- Add aripiprazole 5–15 mg daily
- For women of reproductive age: add hormonal contraception
- Work with patients' primary care providers to restore gonadal hormones (estrogen/progesterone/testosterone supplementation)
- Use dopamine agonists (cabergoline or bromocriptine) carefully due to risk of psychosis

Several studies have found this strategy effective (Zheng W et al, *Gen Psychiatry* 2019;32(5):e100091). If you've tried all the above and the HPRL continues, you can try prescribing a dopamine agonist such as cabergoline or bromocriptine. Be mindful that doing so will mean you are working at odds with the dopamine-blocking properties of the antipsychotic, and the patient's psychiatric symptoms could worsen. For female patients, another option is to add a birth control pill, which will replenish estrogen that has been lowered by the prolactin. A more direct approach is using hormone replacement therapy—though this would usually be prescribed by the patient's primary care physician or OB-GYN. (See “HPRL Management Strategies” table for a quick reference.)

*You switch your patient to aripiprazole 15 mg twice daily. Two weeks later, you recheck her prolactin level and find it has dropped to 22 ng/mL. A few days later, your patient informs you that her menstrual cycles have resumed.*

**CHPR VERDICT:** Don't ignore HPRL—switch meds, add aripiprazole, add a dopamine agonist, or encourage hormone replacement therapy. Your patients will be happy you went the extra mile!

Q & A  
With  
the Expert

## EmPATH Units: An Innovative Approach to Mental Health Crises Kimberly Nordstrom, MD, JD

*Emergency Psychiatrist. Associate Professor of Psychiatry, University of Colorado School of Medicine. Aurora, CO.*

Dr. Nordstrom has disclosed no relevant financial or other interests in any commercial companies pertaining to this educational activity.



**CHPR: Dr. Nordstrom, please tell us about yourself.**

**Dr. Nordstrom:** First and foremost, I am an emergency psychiatrist. I have been working in this field for years and have a passion for it. I am also drawn to healthcare policy and administration, especially when it comes to models of care. As a past president of the American Association for Emergency Psychiatry and past chairperson of the Coalition on Psychiatric Emergencies, I have had opportunities to tour many emergency/crisis psychiatric facilities and learn about different models of care.

**CHPR: Let's start by reviewing what EmPATH stands for.**

**Dr. Nordstrom:** EmPATH stands for "Emergency Psychiatric Assessment, Treatment, & Healing unit." EmPATH units provide prompt, empathetic care to patients in psychiatric crises. Their goal is to help patients improve quickly, and they have the added benefit of reducing emergency department (ED) boarding and overcrowding.

**CHPR: What led to their development?**

**Dr. Nordstrom:** In recent years, there's been a movement to transform the way mental health emergencies are handled in the US. In 2010, the American Association for Emergency Psychiatry embarked on a huge project to identify best practices in the evaluation and treatment of agitation. It was called Project BETA (Holloman GH Jr and Zeller SL, *West J Emerg Med* 2012;13(1):1-2), and it shook up the system and is now being used around the world. It taught clinicians the steps to provide empathetic care to help de-escalate an agitated patient. Dr. Scott Zeller worked in a psych emergency service (PES) in Alameda County at the time and created a model that incorporated Project BETA's principles. It was called "the Alameda Model" and provided an alternative to EDs where the local EMS and police could take psychiatric patients directly. When I visited this PES, I saw about 40 patients in an open milieu. I could tell they were quite ill, yet the unit felt calm and healing. That was, in effect, the first iteration of an EmPATH unit. Since then, the model has evolved so that it can be implemented in any type of hospital—urban, rural, academic, or community.

**CHPR: Open milieus are a central feature of EmPATH units, right?**

**Dr. Nordstrom:** Yes, the open-milieu model is a key part of the EmPATH units. Patients can easily get their basic needs met, such as grabbing a blanket or snacks. The most important part, I think, is that patients can walk around. Most psychiatric EDs keep people in their rooms. When a person is feeling out of control and just wants to pace or look out a window and instead they're stuck in a room, that just makes them feel worse.

**CHPR: But what happens if a patient is assaultive? Some of our patients can be highly agitated and psychotic. Won't staff and other patients potentially be in danger?**

**Dr. Nordstrom:** The open milieu helps prevent those behaviors in the first place. Unlike most psychiatric EDs, where the staff are in a "fishbowl" behind glass because of their belief that they need protection, EmPATH staff are out engaging with the patients. They chat, play board games, or just sit there with the patients, and they are always monitoring for agitation. They catch it in its earliest forms when it is mild and staff can do something about it. The whole atmosphere of an EmPATH unit is quiet and calming, with soothing art, comfortable seating, board games, TVs, books, magazines, and snacks. And EmPATH units have quiet rooms for patients who want some privacy. These rooms can also be used for seclusion and restraints (S&R) if necessary (*Editor's note: See Q&A on S&R in this issue*).

**CHPR: It would be hard for nurses in my hospital's psychiatric ED to find the time to play board games with individual patients. How do EmPATH units provide sufficient staffing for this one-on-one time?**

**Dr. Nordstrom:** Peer support specialists help, as well as nursing aides who are on-site around the clock. It's not always one-to-one; often you'll see two or three EmPATH patients at a time playing dominoes with one of our staff members. These interactions help patients relax, to the point that they often become more forthcoming about their current crisis.

**CHPR: These units sound much less hectic than typical EDs.**

**Dr. Nordstrom:** Think about how easy it is to be frustrated in a typical ED. If you have ever been a patient in an ED, you probably had a long wait, became hungry, and just wanted to get back home. EDs are also quite noisy, putting the average person on edge. Now add on to that a person who is in a mental health crisis. One hallmark of agitation is a heightened responsiveness to internal and external stimuli (Lindenmayer JP, *J Clin Psych* 2000;61(Suppl 14):5-10). You can see how easy it is, just from the nature of a typical ED, to exacerbate symptoms.

**CHPR: And patients are seen promptly in a EmPATH unit, right? I'm sure that helps reduce their frustration.**

**Dr. Nordstrom:** That's the other reason why agitated patients tend to do better in EmPATH units. Treatment is initiated within one hour of arrival. That's not always the case in an ED or in a PES.

Continued on page 7



# THE CARLAT REPORT: HOSPITAL PSYCHIATRY

Expert Interview – EmPATH Units: An Innovative Approach to Mental Health Crises

Continued from page 6

**CHPR: Right, patients sometimes wait hours to be seen in an ED. What do the data show about how EmPATH units compare with traditional EDs?**

**Dr. Nordstrom:** To start with, the use of S&R is low in EmPATH units even though most patients are on psychiatric holds. Dr. Zeller made a presentation to the California State Senate and Assembly Health Committee in December 2021, where he reported the rate is 0.1%–0.2%. That's significantly less than the rate in traditional psychiatric EDs, where it's in the realm of 14% ([www.tinyurl.com/ymts5kkf](http://www.tinyurl.com/ymts5kkf); Simpson SA et al, *Gen Hosp Psychiatry* 2014;36(1):113–118). However, there are no peer-reviewed, published data on this yet.

**CHPR: What else do the data show?**

**Dr. Nordstrom:** A recent study showed that ED length of stay dropped from an average of 16 hours to five hours when patients were transferred to an EmPATH unit. The study also found that inpatient psychiatric admissions dropped from 57% of patients in the psych ED to 27% of patients in the EmPATH unit. The 30-day rate of psych patients returning to the ED dropped by 25%, and outpatient follow-up of patients improved by 60%, from 39% to 63% (Kim AK et al, *Acad Emerg Med* 2022;29(2):142–149).

**CHPR: Those are impressive statistics. About one in eight patients in EDs are psych patients, right? So, if we can get more widespread use of EmPATH units, that could help us reduce overcrowding and provide better care.**

**Dr. Nordstrom:** Right. Patients in behavioral health crises really add to ED overcrowding. One of the problems is that if they call their outpatient provider and it's after hours, they're told, "If you feel like you're in an emergency, dial 911 and go to your nearest ED." That can be tricky, as many times patients are unclear as to what constitutes an urgent versus emergent issue. Another problem is that those patients often don't receive any care for their underlying mental health issues. They're just boarding while they wait for an inpatient bed. If those patients instead received care in the ED, we might turn that person from an inpatient to an outpatient because the crisis may have abated. This is how other medical conditions are typically handled. If a patient shows up with an asthma attack, they get treated in the ED. They're not told to wait in a room until an inpatient bed becomes available. But for mental health patients, emergency physicians often see the disposition options as binary: It's either traditional outpatient treatment, or the patient is in a crisis and needs an inpatient admission.

**CHPR: What mental health services do EmPATH units offer?**

**Dr. Nordstrom:** They provide several treatments: medications, family counseling, psychoeducation, therapy, and safety planning. They are able to provide those services and divert about 80% of patients that come into a PES and not have to admit them into a hospital (Zeller S et al, *West J Emerg Med* 2014;15(1):1–6).

**CHPR: Over what time frame do patients improve?**

**Dr. Nordstrom:** Patients typically get better within 14–18 hours. The goal of an EmPATH unit is to keep stays shorter than 24 hours.

**CHPR: Are there separate units for children?**

**Dr. Nordstrom:** Yes, it's important to not commingle children with adults. Some places might not be able to truly have them in separate spaces, but they keep kids sequestered on one part of the unit. The University of Minnesota is building a pediatric EmPATH unit specifically for children and adolescents that's opening in 2022.

**CHPR: Are EmPATH units usually housed next to an ED?**

**Dr. Nordstrom:** They can be either in a hospital by an ED or elsewhere on the campus, or even elsewhere in the community, like the Alameda Model. But they are always affiliated with a specific ED or EDs, and they are under a hospital license, as opposed to being a community-based program.

**CHPR: And that affiliation with EDs helps in cases of high-acuity and violent involuntary patients who are not able to tolerate the open-milieu environment because those patients can then be transferred to the ED, right?**

**Dr. Nordstrom:** I believe that would be a rare occurrence, as the specialists for helping the severely agitated patient are at the EmPATH unit. They can treat severe agitation in the unit. The affiliation is more important for cases of agitation that result from medical emergencies. The person may start at the EmPATH unit, but the medical and psychiatric workup may reveal that there's a medical etiology for their agitation.

**CHPR: So much of what happens in EDs and psych EDs is just boarding, and often nothing is being done to heal the patient. EmPATH units seem like such a good alternative. But we do have mental health urgent care centers and crisis stabilization units (CSUs). How are EmPATH units different from those?**

**Dr. Nordstrom:** Urgent care centers are usually set up like walk-in clinics and generally handle minor issues, such as patients who've run out of their medications or who are feeling a little down. They might occasionally be placed on a mental health hold, but this is rare. CSUs are for higher-acuity patients, and they can stay for as many as five days. The CSUs can't do medical workups, but they can provide some medications and supportive therapy, and some of them have groups. So, depending on the

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**“EmPATH units do many of the same things that a psych ED does, but they go further in terms of trauma-informed care and having a healing aspect. Not everyone is comfortable with the open-milieu model. If staff become more comfortable with performing de-escalation, they'll have a lot less to fear while mingling with the patients.”**

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Kimberly Nordstrom, MD, JD

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## Treating Common Medical Conditions in Patients With Chronic Mental Illnesses

Shazadie Soka, MD. Chief resident, Wayne State University Department of Psychiatry, Detroit, MI. Lauren-Alyssa Wake, DO. Inpatient psychiatrist, Trinity Health, Minot, ND.

Dr. Soka and Dr. Wake have disclosed no relevant financial or other interests in any commercial companies pertaining to this educational activity.

After years of specialized training in psychopharmacology and psychotherapy, it can feel foreign or uncomfortable to prescribe a nonpsychiatric medication, such as an antibiotic, to a patient in need. Uncertainty about psychiatrists' scope of practice leaves many of us feeling unsure about whether we should prescribe anything beyond psychiatric medications. Yet we also know patients with chronic mental illnesses frequently do not obtain treatment for common medical ailments, partly due to health care barriers as well as poor adherence with outpatient appointments. Our medical training should bolster our confidence that we can expand the narrow "scope" we've placed on ourselves. As medical providers, we want to diminish the barriers to health care and optimize our patients' health outcomes.

In this article we will review the treatment of common, uncomplicated medical conditions that we frequently encounter among our hospitalized patients with chronic mental illness: hypertension, hyperlipidemia, obesity, hypothyroidism, need for contraception, urinary tract infections (UTIs), and certain sexually transmitted diseases.

### Hypertension

You probably don't need to worry about isolated elevated blood pressure readings, but once you see a consistent pattern of elevated blood pressure across several encounters, it is reasonably likely that your patient has a diagnosis of essential hypertension. Make sure there are no concerns for hypertensive urgency or emergency (ie, SBP >180, DBP >120). Treatment options include an antihypertensive from the three main classes of drugs used for initial treatment—thiazide diuretics, angiotensin-converting enzyme inhibitors/angiotensin II receptor blockers, and calcium channel blockers. Keep ethnicity in mind when treating hypertension: White patients typically respond well to lisinopril 10–40

mg daily, and Black patients do better with hydrochlorothiazide or chlorthalidone 12.5–25 mg daily. Thiazide diuretics can produce hypokalemia, so be sure to check and supplement potassium levels as necessary and avoid these medications in patients with sulfa drug allergies. Lisinopril is also a good choice for patients with diabetes. If your patient does not respond to these treatments, or if you have concerns for secondary hypertension or evidence of end-organ damage (ie, concern for chronic kidney disease or visual symptoms), refer to an internist.

### Hyperlipidemia

People with chronic mental illnesses typically have one or more risk factors for cardiovascular disease, including elevated LDL-C levels. For which patients should we prescribe statins? The US Preventive Services Task Force recommends the use of statins for patients who meet all these criteria:

1. Ages 40–75
2. One or more risk factors for cardiovascular disease (see table)
3. A 10-year risk of cardiovascular event of 10% or greater based on the risk calculator: [www.tinyurl.com/34cf5n3v](http://www.tinyurl.com/34cf5n3v)

#### Risk Factors for Cardiovascular Disease

- Diabetes
- Dyslipidemia: LDL-C >130 mg/dL or HDL-C <40 mg/dL
- Hypertension
- Smoking

How do you dose statins? Patients' LDL-C levels guide the dosage or intensity of treatment (see table): High-intensity statins (eg, atorvastatin 40–80 mg daily) bring LDL-C levels down by 50% or more, moderate-intensity statins (eg, atorvastatin 10–20 mg daily) bring them down by 30%–49%, and low-intensity statins (eg, simvastatin 10 mg daily) bring them down by less than 30%. Don't prescribe statins to patients with liver disease or who are pregnant or breastfeeding.

### Obesity

We incorporate education about exercise and healthy diets in our patient

Statin Therapy		
High Intensity: LDL-C Lowering ≥50%	Moderate Intensity: LDL-C Lowering 30%–49%	Low Intensity: LDL-C Lowering <30%
Atorvastatin 40–80 mg/day	Atorvastatin 10–20 mg/day Simvastatin 20–40 mg/day	Simvastatin 10 mg/day

Source: Grundy SM et al, *Circulation* 2019;139(25):e1082–e1143

encounters. For patients with antipsychotic-induced weight gain, we also prescribe metformin since it is more effective in treating antipsychotic-induced weight gain and increasing insulin sensitivity than exercise and diet alone (Wu RR et al, *JAMA* 2008;299(2):185–193). Metformin has minimal side effects and is safe to use, except for patients with renal dysfunction or metabolic acidosis. We initiate at 500 mg daily and titrate to 1000 mg twice daily (see "Summary of Treatments for Common, Uncomplicated Conditions" table on page 9).

Orlistat is another medication to consider. Besides promoting weight loss, it decreases blood pressure, improves dyslipidemia, and decreases insulin resistance (Drew BS et al, *Vasc Health Risk Manag* 2007;3(6):817–821). Its main side effect is oily stool. We don't prescribe this to pregnant women or patients with chronic malabsorption or cholestasis.

### Hypothyroidism

Hypothyroidism is a relatively common chronic condition, and derangements in thyroid hormone may precipitate or exacerbate psychiatric symptoms. Psychiatrists have a long history of using thyroid medication to treat depression (Cooper-Kazaz R and Lerer B, *Int J Neuropsychopharmacol* 2008;11(5):685–699). The treatment of choice for hypothyroidism remains levothyroxine, a synthetic version of the thyroid hormone T<sub>4</sub>. The recommended starting dose for treating hypothyroidism is 100–125 mcg/day in otherwise healthy adults less than 50 years old and 25–50 mcg/day in adults age 50 or older. Increase by 12.5–25 mcg/day every four to six weeks until the patient becomes

Continued on page 9



# THE CARLAT REPORT: HOSPITAL PSYCHIATRY

## Treating Common Medical Conditions in Patients With Chronic Mental Illnesses

Continued from page 8

euthyroid. For patients with severe hypothyroidism, cardiac disease, myxedema coma, or stupor, seek consultation with an endocrinologist.

### Contraception

Another need we frequently address is for contraceptive medications. Many of our female patients are at high risk for unintended pregnancies and have limited access to routine obstetrical and gynecological care. We include discussions on family planning in addition to prescribing contraception. Oral contraceptives remain the method of choice for most women (McCloskey LR et al, *Am J Psychiatry* 2021;178(3):247–255), but we've found that when we discuss the three-year duration of long-acting implantable contraception (eg, Nexplanon), many women opt for this instead. We reach out to our OB-GYN colleagues, who place the Nexplanon in a quick bedside procedure. Alternatively, we prescribe medroxyprogesterone acetate injection 150 mg IM, which is effective for three months. Hormonal contraception is safe, with some exceptions: We don't use it for women older than 35 who are smokers, or women with histories of breast cancer, thrombotic disorders, liver impairment, or cerebrovascular disease.

### UTIs and sexually transmitted diseases

You've probably seen many patients with sexually transmitted diseases, in part because psychiatrically unstable patients

often display poor judgment and hypersexuality. Do you need to obtain a urinalysis if you suspect a UTI? Not necessarily—many primary care physicians treat suspected UTIs empirically, based on patients' reports of dysuria, frequency, and urgency. Trimethoprim-sulfamethoxazole (TMP-SMX) remains the first-line treatment for uncomplicated cystitis, with a three-day course of medication carrying a bacterial eradication rate of 94% (Gupta K et al, *Clin Infect Dis* 2011;52(5):e103–e120). TMP-SMX is generally well tolerated but, like many antibiotics, can cause gastrointestinal side effects or rash.

Dysuria, frequency, and urgency can also occur in urethritis due to

gonorrhea or chlamydia, which can be easily checked with a urine test. We treat uncomplicated urogenital gonorrheal infections with a single 500 mg IM dose of ceftriaxone, and chlamydial infections with doxycycline 100 mg BID for seven days.

**CHPR VERDICT:** By treating common, uncomplicated medical conditions, we can improve the health outcomes of patients who might otherwise not be able to access primary care. Hypertension, hyperlipidemia, obesity, hypothyroidism, need for contraception, STDs, and UTIs are readily treatable, with referral to a primary care physician for more complex cases.

### Summary of Treatments for Common, Uncomplicated Conditions

Medical Concern	Dose Initiation and Titration
Chlamydia	Doxycycline 100 mg BID for seven days
Contraception	Medroxyprogesterone acetate 150 mg IM every three months; contraceptive implant (Nexplanon) lasts three years
Gonorrhea	Ceftriaxone 500 mg IM one time only
Hyperlipidemia	High intensity: atorvastatin 40–80 mg nightly Moderate intensity: atorvastatin 10–20 mg nightly
Hypothyroidism	Age <50: levothyroxine 100–125 mcg/day Age ≥50: levothyroxine 25–50 mcg/day
Obesity	Option 1: Initiate metformin 500 mg daily, titrating to 1000 mg BID Option 2: Initiate orlistat 60 mg TID
Primary hypertension	White patients: Initiate lisinopril 10–40 mg daily Black patients: Initiate hydrochlorothiazide or chlorthalidone 12.5–25 mg daily
Uncomplicated UTI	One double-strength TMP-SMX tablet BID for three days



## Expert Interview – EmPATH Units: An Innovative Approach to Mental Health Crises

Continued from page 7

location, they may be similar to EmPATH units, but the primary difference is that EmPATH units are for high-acuity patients who would otherwise be in an ED awaiting care. EmPATH units are an “emergency path” to the most appropriate level of care. Also, EmPATH units can more thoroughly evaluate the presenting issue and offer a larger array of treatments.

### CHPR: Could EmPATH units completely replace psych EDs?

**Dr. Nordstrom:** The units do many of the same things that a psych ED does, but they go further in terms of trauma-informed care and in having a healing aspect. I would love for psych EDs to all evolve to this, but not everyone is comfortable with the open-milieu model.

### CHPR: It might just be a matter of staff becoming more comfortable with the idea of being out there mingling with the patients.

**Dr. Nordstrom:** Right. If staff feel comfortable with performing de-escalation, they'll have a lot less fear.

### CHPR: We ran an article with Janet Richmond on principles of de-escalation and the Project BETA principles (Editor's note: See CHPR Jan/Feb/Mar 2022 for this Q&A).

**Dr. Nordstrom:** Yes. She was the lead author on the de-escalation article (Richmond JS et al, *West J Emerg Med* 2012;13(1):17–25). Once frontline staff understand de-escalation, they'll be a lot more comfortable with mingling with patients in open milieus like EmPATH units.

**CHPR: Thank you for your time, Dr. Nordstrom.**

## Research Updates IN PSYCHIATRY

### PREGNANCY

#### ***Lithium Exposure In Utero—How Bad Is It Really?***

**Lara Tang, MD, and Victoria Hendrick, MD.** Dr. Tang and Dr. Hendrick have disclosed no relevant financial or other interests in any commercial companies pertaining to this educational activity.

**REVIEW OF:** Fornaro M et al, *Am J Psychiatry* 2020;177(1):76–92

#### **STUDY TYPE:** Literature review

Most of us are wary of prescribing lithium to pregnant patients, but is prenatal lithium exposure as risky as we think? A meta-analysis of 13 case-control, cohort, and interventional studies ( $n = 1,349,563$  pregnancies) compared congenital anomalies among lithium-exposed and unexposed mothers with and without bipolar disorder (BD).

Lithium use at any time in pregnancy, compared with unexposed women (either with BD or general population controls), was associated with a significantly elevated risk of congenital and cardiac anomalies (odds ratio [OR] 1.75,  $p < 0.01$  and OR 1.9,  $p < 0.01$ , respectively)—and the risk was even higher if lithium was used in the first trimester. However, in their discussion, the authors point out that the absolute risks are low: 4.2% for any malformations and 1.2% for cardiac malformations. First-trimester lithium exposure was also linked with a higher risk of spontaneous abortion (OR 3.8,  $p = 0.03$ )—but this risk was about the same in pregnant patients with mood disorders not on lithium. This suggests that the underlying mood disorder contributes to the risk of spontaneous abortion.

Compared to no lithium use, lithium use was significantly more effective in preventing a mood relapse in the

postpartum (OR 0.16,  $p = 0.12$ ). The rate of cardiac malformations tripled with dosages above 900 mg/day when compared with dosages under 600 mg/day and maternal lithium levels  $< 0.64$  mEq/L. At these lower doses, the risk of cardiac malformations was comparable to that of unexposed newborns. Also, infants exposed to lower lithium doses were more reactive. The authors point out several limitations in their data, including a lack of information on other prescribed medications besides lithium.

#### **CARLAT TAKE**

Lithium use during pregnancy, especially in the first trimester, elevates the risks of congenital and cardiac anomalies, but it also helps prevent postpartum mood relapses. The absolute risk for congenital issues remains low—and you can reduce this risk further by keeping the lithium dose below 600 mg/day and the maternal lithium levels below 0.64 mEq/L. However, some patients, especially those with severe illness, may require higher lithium concentrations to remain stable. While this study has methodologic limitations typically inherent in research on prenatal psychotropic medication exposures, it provides helpful guidelines for the use of lithium in pregnant patients.

### ANTIDEPRESSANTS

#### ***Antidepressants for Suicidal Ideation in Depressed Patients?***

**James Black, MD.** Dr. Black has disclosed no relevant financial or other interests in any commercial companies pertaining to this educational activity.

**REVIEW OF:** Dunlop BW et al, *Psychol Med* 2019;49(11):1869–1878

**TYPE OF STUDY:** Post-hoc analysis of a randomized controlled trial

Antidepressants and cognitive behavior therapy (CBT) appear roughly equivalent for treating depression (Weitz ES et al, *JAMA Psychiatry* 2015;72(11):1102–1109), but might they differ in their efficacy for individual symptoms of depression (eg, insomnia, decreased appetite, and suicidal ideation)?

To explore this question, researchers randomized 315 depressed adults to either 12 weeks of CBT or medication treatment (escitalopram or duloxetine). They used the Montgomery-Åsberg Depression Rating Scale (MADRS) to identify residual (ie, persisting) symptoms in the 250 subjects who completed the study ( $n = 110$  with severe depression,  $n = 140$  with moderate depression). Subjects were categorized as responders if their MADRS score dropped by more than half during treatment. Residual symptoms from the CBT and medication groups were compared for each MADRS item, and residual symptoms of responders were compared to nonresponders.

About two-thirds of the subjects were treatment responders (59% in the CBT group and 69% in the medication group), and residual symptoms, as measured by MADRS items, were comparable among CBT and medication groups. However, among the nonresponders, CBT subjects' mean score on suicidal ideation rose by 15%, while it dropped by 70% in the medication group—ie, even when patients failed to respond to antidepressants, their suicidal thoughts diminished.

#### **CARLAT TAKE**

Although both CBT and medications were effective for depression in this study, among treatment nonresponders, antidepressants significantly reduced suicidal ideation. CBT had the opposite effect, with suicidal ideation increasing among nonresponders.

## CME Post-Test

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For those seeking ABPN Self-Assessment (MOC) credit, a pre- and post-test must be taken online at <http://thecarlatcmeinstitute.com/self-assessment/>. *This page is intended as a study guide. Please complete the test online at [www.TheCarlatReport.com](http://www.TheCarlatReport.com). Learning Objectives (LO) are listed on page 1.*

1. Which of the following is a common manifestation of hyperprolactinemia in men and women (LO #1)?  
 a. Anemia  
 b. Low energy levels  
 c. Decreased muscle mass  
 d. Reduced libido
2. Within an EmpATH unit, where are the potentially agitated and psychotic patients who come straight from jail placed (LO #2)?  
 a. In the open milieu with staff who are monitoring for agitation  
 b. In their closed room for early prevention  
 c. In a small closed-off area of the open milieu where they cannot move around  
 d. They are not allowed within the EmpATH unit
3. According to the 2020 study done by McCloskey and colleagues, at what age does hormonal contraception become unsafe for women who are smokers (LO #3)?  
 a. 35  
 b. 23  
 c. 47  
 d. 29
4. According to a 2020 review, what was concluded about lithium use during pregnancy (LO #4)?  
 a. Lithium increases the risk of congenital and cardiac anomalies  
 b. Lithium has no adverse effects when used only in the first trimester  
 c. Lithium does not prevent postpartum mood relapses  
 d. Lithium reduces the risk of spontaneous abortion
5. Which of the following is a strategy to address hyperprolactinemia (LO #1)?  
 a. Switch to a first-generation antipsychotic agent, such as haloperidol  
 b. For female patients, initiate a progestin-only oral contraceptive  
 c. Increase the dose of the antipsychotic medication  
 d. Add a low dose of adjunctive aripiprazole
6. According to Dr. Knox, which of the following can help reduce the risk of a patient requiring seclusion and restraints (LO #2)?  
 a. Creating open areas with natural light and soothing colors  
 b. Preventing the submission of court petitions for involuntary medications  
 c. Assigning the patient to a staff member who has no history of talking to the patient  
 d. Taking assessments in a smaller, closed room
7. Other than exercise and diet, which medication can be used to treat antipsychotic-induced weight gain and increase insulin sensitivity (LO #3)?  
 a. Metformin  
 b. Nexplanon  
 c. Atorvastatin  
 d. Ceftriaxone
8. In a 2019 study of depression, how did suicidal ideation severity differ between the nonresponders to antidepressants and the nonresponders to cognitive behavioral therapy (CBT) (LO #4)?  
 a. The severity of suicidal ideation increased in both treatment groups  
 b. The severity of suicidal ideation increased in the antidepressant group and decreased in the CBT group  
 c. The severity of suicidal ideation decreased in the antidepressant group and increased in the CBT group  
 d. The severity of suicidal ideation decreased in both treatment groups



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## Note From the Editor-in-Chief

Starting July 16, the National Suicide Prevention Lifeline will have a new, easy-to-remember number: 988 (the old number, 800-273-8255, will continue to operate as well). The lifeline's network of over 180 crisis centers has helped millions of callers since it opened in 2005, but it's been so understaffed that at least 15% of calls, and even more texts, go unanswered. The upgraded National Suicide Prevention Lifeline will receive an infusion of federal money to enlist additional operators, who will provide counseling and resources to callers and will send out trained responders when necessary.

It will take time for services to scale up so that every call and text will be answered promptly, but it's encouraging to see this essential service finally receiving badly needed federal funding. I plan to encourage my patients and their families to put this new lifeline number in their phones.



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