



# City Health Information

February/March 2010

The New York City Department of Health and Mental Hygiene

Vol. 29(2):9-16

## IMPROVING THE HEALTH OF ADULTS WITH SERIOUS MENTAL ILLNESS

- **Primary care providers and mental health professionals should collaborate to ensure that people with serious mental illness receive:**
  - **Care for illnesses that contribute to their increased morbidity and mortality.**
  - **Routine monitoring of medication side effects, weight, and blood pressure, and other regular preventive health screenings.**
  - **Attention to modifiable risk behaviors such as substance use, medication nonadherence, smoking, and poor nutrition.**

People in the United States with serious mental illness (SMI)—including schizophrenia, bipolar disorder, and severe depression—die 15 to 25 years earlier than the general population.<sup>1-3</sup> While suicide accounts for 5% to 10% of deaths among patients with schizophrenia and bipolar disorder,<sup>4</sup> much of the increased mortality in this group is associated with preventable physical health conditions. For example, one study showed that 60% of the increased mortality among people with schizophrenia is due to preventable conditions such as diabetes and cardiovascular, pulmonary, and infectious diseases.<sup>5</sup>

Many medications used to treat people diagnosed with SMI, particularly second-generation antipsychotics, can cause or worsen obesity, dyslipidemia, and diabetes.<sup>6</sup> Also, smoking, substance use, high-risk sexual behavior, and medication nonadherence are more common in people with SMI than in the general population.<sup>7-10</sup> Other contributors to morbidity and premature mortality in people with SMI include poverty, homelessness, and stigma, which can exacerbate SMI and affect access to care.<sup>11-12</sup>

When patients with SMI interact with the health care system, the quality of care may be compromised by literacy and communication issues or by difficulty navigating the poorly coordinated health care and mental health systems.<sup>11</sup> Medical conditions of people with SMI are often missed and health care concerns are often disregarded or not treated appropriately.<sup>13</sup>

Both mental health providers and primary care providers (PCPs) can improve the health of people with SMI.



### PCPs should:

- Coordinate care with mental health providers.
- Provide regular physical exams and routine preventive health screenings, including weight, blood pressure, and cholesterol screenings, and immunizations for influenza and pneumonia.
- Be alert to any significant changes in mental health symptoms, including suicidal ideation and risky behaviors, and promptly discuss any concerns about behavioral health needs with patients and their mental health providers.
- Be aware of potential side effects, drug interactions, and adherence issues in patients who are prescribed psychotropic medications.
- Advise and support patients with SMI to make healthy lifestyle choices and support their efforts to do so.

### Mental health providers should:

- Coordinate care with the patient's PCP and other health care and social service providers.
- Discuss risks and benefits of various treatment options with patients.
- Routinely monitor psychotropic medications and their side effects (**Tables 1, 2, and 3**) with patients, and adjust medications as necessary.
- Ask about comorbid health conditions that are common in people with SMI. Encourage patients to see their PCPs as necessary.
- Work with patients to address modifiable behaviors that can shorten the lives of people with SMI.

## COMORBIDITIES IN PEOPLE WITH SMI

Many comorbidities are more common among people with SMI: for instance, people with schizophrenia are more than 4 times as likely to have diabetes.<sup>14</sup> Individuals with SMI are 5 times as likely to have hepatitis B and 11 times as likely to have hepatitis C, and they have an HIV prevalence as high as 3%,<sup>15</sup> as opposed to 0.4% among the general population.<sup>16</sup>

Despite the prevalence of these comorbidities, people with SMI often do not receive appropriate preventive care. Hepatitis is frequently undetected among people with SMI because of limited screening, and vaccination rates are low.<sup>17</sup> People who have diabetes and SMI also receive fewer recommended services and less diabetes education than people without SMI.<sup>18</sup>

As with all patients, PCPs should administer a preventive health screening, including a blood pressure measurement and body mass index (BMI) calculation. Taking a personal/family history of obesity, diabetes, hypertension, smoking, cardiovascular disease, and dyslipidemia is particularly important. PCPs and mental health providers should

coordinate care to ensure that comorbid health conditions are evaluated and treated, and that patients taking psychotropic medications receive recommended medical and laboratory monitoring (**Tables 2 and 3**).

## MODIFIABLE BEHAVIORS AND CONDITIONS IN SMI PATIENTS

Both PCPs and mental health professionals should be alert to risky behaviors and conditions that occur more frequently in patients with SMI.<sup>2,11</sup>

### Substance use

Individuals with SMI are up to 3 times as likely as the general population to have substance dependence or to have abused alcohol or illicit drugs.<sup>19</sup> As a result, both PCPs and mental health providers should ask all patients about alcohol and drug use, including injection drug use, and conduct a family history of substance use issues. Collect this information in a nonjudgmental manner, and include questions about previous and current victimization and trauma because these may be related to substance use.<sup>20</sup>

Many patients with co-occurring mental illness and substance use disorders present with physical complaints, such as insomnia, fatigue, chest pain, palpitations, headaches, or impotence. When other physical or psychological causes cannot be found, consider a substance use problem. Substance use should also be considered if chronic disease, such as chronic pain, diabetes, heart disease, gastrointestinal disorders, or hypertension, fails to respond to treatment.<sup>20</sup>

Screen for substance use using the National Institute for Drug Abuse's NIDA-Modified ASSIST, available at [www.drugabuse.gov/nidamed/screening](http://www.drugabuse.gov/nidamed/screening). Discuss health problems and risky behaviors that may be associated with drug use and offer further treatment, such as brief intervention, to patients who screen positive for substance use. Brief interventions can follow the "A's" format: Advise, Assess, Assist, Arrange.

- *Advise*: Provide information and feedback about personal risk.
- *Assess* readiness to change and set priorities.
- *Assist* the patient in developing a plan.
- *Arrange* follow-up.

For more information on brief intervention, see [www.nyc.gov/html/doh/downloads/pdf/chi/chi28-3.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi28-3.pdf).

Buprenorphine treatment for opioid dependence is not contraindicated in patients with SMI as long as their symptoms are currently stable. Patients who have a history of suicidal attempts or ideation should be monitored closely during treatment.<sup>21</sup> For more information on buprenorphine treatment, see [www.nyc.gov/html/doh/downloads/pdf/chi/chi27-4.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi27-4.pdf). If indicated, refer patients to drug treatment programs (**Resources—Substance Use CHI**).

**TABLE 1. SIDE EFFECTS OF DRUGS COMMONLY USED TO TREAT SERIOUS MENTAL ILLNESS<sup>4,22</sup>**

Drug Class And Examples <sup>a</sup>	Side Effects	Notes		
<b>First-generation antipsychotics (FGAs, in order of generally increasing potency)</b> Chlorpromazine (Thorazine®) Thioridazine Mesoridazine (Serentil®) Loxapine (Loxitane®) Perphenazine (Trilafon®) Trifluoperazine (Stelazine®) Fluphenazine (Prolixin®) Haloperidol (Haldol®) <i>Typical use: positive symptoms<sup>a</sup></i>	Extrapyramidal effects, eg, tardive dyskinesia, parkinsonism, dystonia	More common with higher potency FGAs (eg, haloperidol)		
	Hyperlipidemia	May be less than in 2nd-generation antipsychotics		
	Metabolic syndrome	May be less than in 2nd-generation antipsychotics. Weight gain generally more common with lower potency FGAs.		
	Elevated prolactin	Do not use in pregnancy, breastfeeding, breast cancer		
	Long QT syndrome	Worst with mesoridazine, thioridazine		
	Hypotension	Caution, particularly in elderly		
	Sedation	Can be substantial		
	Anticholinergic effects	Caution in elderly		
	<b>Second-generation antipsychotics (atypicals)</b> Clozapine (Clozaril®) Risperidone (Risperdal®) Olanzapine (Zyprexa®) Quetiapine (Seroquel®) Aripiprazole (Abilify®) Ziprasidone (Geodon®) <i>Typical use: positive symptoms<sup>a</sup>; possible use for negative symptoms<sup>b</sup> and cognitive impairment<sup>c</sup></i>	Weight gain	Worst for clozapine, olanzapine; least for ziprasidone, aripiprazole	
Hyperlipidemia		Least for ziprasidone, aripiprazole		
Diabetes/glucose abnormalities		Least for ziprasidone, aripiprazole		
Agranulocytosis		Clozapine		
Sedation		Particularly clozapine		
Sexual dysfunction		Decreased libido, delayed orgasm or anorgasmia		
Elevated prolactin		Particularly risperidone		
Long QT syndrome		Particularly ziprasidone		
Anticholinergic effects		Worst with clozapine, olanzapine		
Cataracts		Particularly quetiapine		
Myocarditis		Clozapine		
<b>Mood stabilizers</b> Lithium (Eskalith®, Lithobid®) Valproate (Depakote®) Lamotrigine (Lamictal®) Carbamazepine (Equetro®) <i>Typical use: bipolar disorder</i>		Thyroid dysfunction	Lithium	
	Renal dysfunction	Lithium		
	Hepatic dysfunction	Valproate, carbamazepine		
	Hematologic effects (including thrombocytopenia and leukopenia)	Valproate, carbamazepine		
	Weight gain	Valproate, lithium		
	Serious skin reactions (including Stevens-Johnson syndrome)	Lamotrigine, carbamazepine		
<b>Tricyclic antidepressants (TCAs)</b> Trazodone (Desyre®) Amitriptyline (Elavil®) Nortriptyline (Pamelor™) Imipramine (Tofranil™) <i>Typical use: depression, anxiety</i>	Cardiovascular and neurological toxicity. Sedation, weight gain, sexual problems, orthostatic hypotension; dry mouth, urinary retention, constipation, and other anticholinergic effects	Caution in suicidal patients due to overdose risk		
	<b>Selective serotonin reuptake inhibitors (SSRIs); dual-uptake inhibitors</b> Fluoxetine (Prozac®) Sertraline (Zoloft®) Citalopram (Celexa®) Fluvoxamine (Luvox®) Paroxetine (Paxil®) <i>Typical use: depression, anxiety</i>	Feeling jittery; insomnia; nervousness; nausea or gastrointestinal upset; sexual dysfunction; weight gain; sedation	Some SSRIs potentiate antipsychotics, due to P450 enzyme inhibition (eg, clozapine levels can rise when drugs such as fluvoxamine, fluoxetine, or paroxetine are co-administered)	
		<b>Other antidepressants</b> Bupropion (Wellbutrin®, Zyban®) <i>Typical use: depression, smoking cessation (sustained-release formulation)</i>	Generally well-tolerated; most commonly reported are dry mouth, tremors, and insomnia	Not associated with weight gain or sexual side effects
			Venlafaxine (Effexor®) <i>Typical use: depression, anxiety</i>	Side effects similar to those of SSRIs, as well as hypertension
Mirtazapine (Remeron®) <i>Typical use: depression</i>		Sedation, weight gain	Not associated with sexual side effects	
<b>Benzodiazepines</b> Lorazepam (Ativan®) Clonazepam (Klonopin®) Alprazolam (Xanax®) Diazepam (Valium®) <i>Typical use: anxiety, agitation, aggression</i>	Risk of dependence or abuse	Caution in patients with substance abuse or at high risk for abuse or dependence		

Use of brand names is for informational purposes only and does not imply endorsement by the New York City Department of Health and Mental Hygiene. Specific side effects vary by individual drug. Consult prescribing information for more details.

<sup>a</sup>For example, delusions and hallucinations.

<sup>b</sup>For example, apathy, flat affect, and poverty of speech.

<sup>c</sup>For example, deficits in working memory and/or attention.

## Smoking

People with mental illness are approximately twice as likely to smoke as the general population.<sup>23</sup> Both mental health providers and PCPs should ask all patients about their smoking status, advise them about the risks of smoking, encourage them to quit, and provide treatment to help patients who are ready to quit successfully.

Brief interventions by PCPs and mental health providers can increase motivation to quit and abstinence rates.<sup>24</sup> PCPs and mental health providers should evaluate the patient's level of nicotine addiction, and PCPs and psychiatrists should provide pharmacotherapy, such as nicotine replacement therapy (NRT), bupropion, or varenicline, to help patients become tobacco-free (**Resources—Tobacco CHI**). Mental health providers can also use longer-term motivational interviewing to encourage people with SMI to quit smoking, then provide smoking cessation treatment followed by cognitive behavioral treatment to help prevent relapse (**Resources—Motivational Interviewing**).<sup>25</sup>

When promoting smoking cessation among people with SMI, use cessation medications based on the patient's psychiatric condition, patient preference, and degree of nicotine addiction. Determine whether symptoms such as anxiety, agitation, and sadness are due to nicotine withdrawal.<sup>26</sup> Consider the patch if prescribing NRT because of its ease of use and high adherence rate. The patch can be combined with a short-acting form of NRT (eg, gum) to help stave off immediate cravings.<sup>27</sup>

Consider using bupropion SR as a smoking cessation treatment in patients with major depressive disorder, as it is effective in treating tobacco dependence in these patients.<sup>28</sup>

The antidepressant nortriptyline is also effective for treating tobacco dependence, but is not approved for this use by the Food and Drug Administration (FDA). Because nortriptyline can have significant adverse effects—dry mouth, hypotension, dizziness—it is not frequently prescribed for smoking cessation. It should be used with caution and only in patients unable to use NRT or first-line oral medications.

Health care providers should closely monitor patients for side effects when cessation medications are used, but many patients show improvement in psychiatric symptoms during smoking cessation treatment.<sup>29</sup> Smoking cessation has been shown to improve depression and anxiety symptoms as well as positive and negative symptoms, although it may worsen attention and working memory deficits in individuals with schizophrenia.<sup>29</sup>

The FDA has added boxed warnings for two prescription medications used to treat tobacco dependence, varenicline (Chantix®) and bupropion SR (Zyban® and generic equivalents), due to reports of serious neuropsychiatric symptoms for some patients taking these medications.\*

Chemicals other than nicotine in cigarette smoke can accelerate the metabolism of drugs, including psychiatric medications such as clozapine and olanzapine, via P450 liver cytochrome (CYP1A2) enzymes. Closely monitor patients taking these medications for side effects and dosing needs when changes in smoking status occur.<sup>25,30,31</sup>

## Obesity

Individuals with SMI are more likely to be obese than the general population.<sup>32,33</sup> All health care providers should monitor weight status (body mass index, or BMI) and waist circumference, recommend weight loss as appropriate, and promote healthy eating and exercise, while considering the impact of antipsychotics and other psychotropic medications on weight gain (**Table 1**).<sup>34</sup>

PCPs should write exercise recommendations into their patients' treatment plans<sup>35</sup> and make sure that exercise does not exacerbate any chronic illness. Supervised facility-based exercise programs, especially walking programs, can be effective, and lifestyle changes that focus on moderate-intensity activity may be most appropriate.<sup>36</sup>

Mental health providers can collaborate with PCPs and patients to improve nutrition and increase exercise by recommending simple, stepwise measures, such as reducing sugary drinks and taking stairs instead of elevators, and providing written, goal-oriented exercise scripts.<sup>7,35</sup> Mental health providers can utilize motivational approaches, along with behavioral and cognitive approaches, to help patients change their eating habits and physical activity levels.<sup>37</sup> For more information on reducing obesity, see [www.nyc.gov/html/doh/downloads/pdf/chi/chi26-4.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi26-4.pdf).

## Sexual behavior

Both PCPs and mental health providers should ask patients, in a nonjudgmental way, about their sexual behavior and preferences, potential to contract or transmit sexually transmitted infections, and intimate partner violence (**Resources—Intimate Partner CHI**). All providers should also encourage condom use and provide condoms, preventive counseling, and education on effective contraception.

\*These symptoms include changes in behavior, hostility, agitation, depressed mood, suicidal thoughts and behavior, and attempted suicide. Health care professionals should advise patients to stop taking varenicline or bupropion and contact a health care provider immediately if they experience agitation, depressed mood, or any changes in behavior that are not typical of nicotine withdrawal, or if they experience suicidal thoughts or behavior. If varenicline or bupropion is stopped due to neuropsychiatric symptoms, patients should be monitored until the symptoms resolve. See [www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHealthcareProfessionals/ucm169986.htm](http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHealthcareProfessionals/ucm169986.htm).

**TABLE 2. MEDICAL SCREENING AND MONITORING OF PATIENTS TAKING MEDICATIONS FOR SERIOUS MENTAL ILLNESS<sup>4,22,38-41</sup>**

When Prescribing	Recommended Tests/Screening	Notes
Ziprasidone in patients with heart disease, history of syncope, family history of sudden death at an early age, or congenital long QT syndrome	Electrocardiogram (ECG)	Obtain baseline ECG before starting medication and additional ECGs if symptoms associated with prolonged QT interval occur.
Tricyclic antidepressants (TCAs) in patients over age 40 and patients with preexisting heart disease		Obtain baseline ECG before initiating treatment. Avoid TCA use in patients with bundle branch block and with ischemic heart disease.
Antipsychotics associated with cataracts (eg, chlorpromazine, quetiapine)	Regular eye exams	
Antipsychotics (eg, risperidone and first-generation antipsychotics) that can cause hyperprolactinemia	Screen for signs/symptoms of hyperprolactinemia; measure plasma prolactin levels as clinically indicated.	Screen for signs/symptoms of hyperprolactinemia (galactorrhea, changes in libido and menstruation in women, changes in libido, erectile and ejaculatory function in men) at each visit when initiating medication and at each visit until dose is stable, then annually.
Clozapine	Regular monitoring of white blood cell (WBC) count and absolute neutrophil count (ANC) <sup>a</sup>	Due to risk of agranulocytosis. <sup>a</sup> Advise patients to immediately report the onset of lethargy, weakness, fever, sore throat, or any other signs of infection during treatment.
Lithium	Thyroid and renal function tests, ECG	Obtain baseline blood urea nitrogen test and creatinine levels, thyroid function tests (TFTs), and ECG (in patients over age 40 or with preexisting cardiac disease) prior to treatment. During the first 6 months of treatment, check TFTs once or twice, and renal function tests every 2-3 months. Thereafter, repeat thyroid and renal function tests every 6-12 months and whenever changes occur in clinical status. Lithium levels should be checked at least every 6 months.
Valproate	Liver function tests and hematological measures	Check at baseline and at least every 6 months. Advise patients to report easy bruising or bleeding.
Carbamazepine	Complete blood count with differential, platelet, and liver function tests	Check at baseline, every 2 weeks for 2 months, then every 3 months if no abnormalities. Educate patients about reporting symptoms of bone marrow suppression and hepatic reactions.

<sup>a</sup>Agranulocytosis, defined as an ANC of less than 500/mm<sup>3</sup>, has been estimated to occur in association with Clozaril® (clozapine) use at a cumulative incidence at 1 year of approximately 1.3%. Clozapine is available only through a distribution system that ensures monitoring of WBC count and ANC according to a strict schedule that specifies monitoring frequency based on stage of therapy or results from monitoring tests. Weekly counts are required during the first 6 months of therapy. See [www.clozaril.com](http://www.clozaril.com).

**TABLE 3. MONITORING PROTOCOL FOR PATIENTS TAKING SECOND-GENERATION ANTIPSYCHOTICS (SGAs)<sup>32,41<sup>a</sup></sup>**

	Baseline	4 weeks	8 weeks	12 weeks	Quarterly	Annually
Weight (BMI) <sup>b</sup>	X	X	X	X	X	
Waist circumference	X					X
Blood pressure	X			X		X
Fasting plasma glucose	X			X		X
Fasting lipid profile	X			X		X

<sup>a</sup>More frequent monitoring may be warranted based on clinical status.

<sup>b</sup>When initiating or changing SGA therapy.

## MEDICATIONS

PCPs and mental health professionals can collaborate to monitor the use of psychotropic medications and avoid unnecessary polypharmacy in people with SMI.

PCPs should ask about and document any psychotropic medication prescriptions, along with the name of the prescribing psychiatrist, and follow special monitoring guidelines (**Tables 2 and 3**):

- Know the common side effects of medications for SMI and discuss these side effects with patients (**Table 1**).
- Be aware of the effects of medications on weight gain (**Table 1**).
- Be aware of risks of pharmacodynamic and pharmacokinetic (eg, cytochrome P450) interactions.<sup>42,43</sup>
- Consider discontinuation syndromes—symptom rebound, new symptoms, and physiologic withdrawal—if patients with SMI present with new or sudden physical or psychological symptoms.<sup>44</sup>

About three-quarters of patients discontinue psychotropic medications within a year, usually without informing their doctor.<sup>10</sup> Factors include mental health symptoms (paranoia, delusions, grandiosity); lack of motivation, energy, and confidence to adhere to medication and healthy behaviors; desire to be medication-free; lack of medication efficacy; adverse effects; and lack of social supports.<sup>45,46</sup>

All providers should ask patients if they are adhering to their treatment, especially patients who do not always keep their follow-up appointments, because appointment nonadherence and medication nonadherence are often linked.<sup>46</sup> Both PCPs and mental health providers can take practical steps to improve adherence:

- Communicate with patients about medications, their side effects, and ways to manage them.
- Work to reduce complexity by determining whether any medications can be safely discontinued and prescribing a long-acting formulation if possible.
- Provide the least expensive medication; often, this is an equally effective generic (**Resources—Adherence CHI**).
- Discuss any change in medication with the patient.

## SECOND-GENERATION ANTIPSYCHOTICS

When prescribing SGAs, providers should:

- Discuss risk and benefits of each treatment option with the patient, family/other supports, and other providers, as appropriate. Treatment should be individualized, taking into account patient preferences, mental health condition, medication effectiveness, history of drug response, psychiatric and medical comorbidities, and cost and treatment adherence factors.

- Follow recommended guidelines for baseline and regular monitoring of metabolic parameters whenever initiating or switching medications (**Tables 2 and 3**).
- Offer nutrition and physical activity counseling to all overweight or obese patients.<sup>7,35</sup>
- When choosing medications, consider each patient's BMI, family history, and other cardiometabolic risk factors, as well as each drug's side-effect profile.
- Consider switching SGAs if a patient gains 5% or more of body weight or develops worsening glycemia or dyslipidemia.<sup>32</sup>

## COMMUNICATION AND COORDINATION OF CARE

All providers should practice empathetic listening, be patient, and involve the family/other supports when clarifying history and symptoms because communication difficulties can impact reporting of symptoms and treatment adherence.<sup>11,46</sup> PCPs and mental health professionals should regularly exchange information on medication regimen, lab results, and mental health status to facilitate optimal treatment and avoid duplication of services.<sup>47,48</sup>

## SOCIAL SUPPORT SERVICES

PCPs and mental health providers should coordinate efforts to refer patients for social supports such as housing, case management, and benefits when appropriate. New York City offers an array of social services to meet the needs of people with SMI who face barriers to self-sufficiency. These services include public health insurance; temporary cash assistance and benefits; employment services; child support enforcement assistance; domestic violence support services; home energy assistance; HIV/AIDS services; home care; and adult protective services. For more information on these services, contact 311. For information on mental health services, please refer to [www.nyc.gov/html/doh/html/dmh/mhs.shtml](http://www.nyc.gov/html/doh/html/dmh/mhs.shtml).

## SUMMARY

People who have serious mental illness have increased morbidity and mortality, which are associated with preventable physical health conditions. Mental health providers and PCPs can improve the care and health of patients with SMI by collaborating to monitor physical health conditions, address modifiable behaviors, monitor and manage medication side effects, and increase medication adherence. ♦

## RESOURCES

### For Providers

- Clinical Care Options. Hepatitis CME and Provider Education Programs: [www.clinicaloptions.com/Hepatitis.aspx](http://www.clinicaloptions.com/Hepatitis.aspx)
- New York City Department of Health and Mental Hygiene. *City Health Information*.
  - Brief Intervention for Alcohol Problems (November/December 2006): [www.nyc.gov/html/doh/downloads/pdf/chi/chi25-10.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi25-10.pdf)
  - Preventing and Managing Overweight and Obesity in Adults (April/May 2007): [www.nyc.gov/html/doh/downloads/pdf/chi/chi26-4.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi26-4.pdf)
  - Treating Tobacco Addiction (May/June 2009): [www.nyc.gov/html/doh/downloads/pdf/chi/chi27-1.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi27-1.pdf)
  - Intimate Partner Violence: Encouraging Disclosure and Referral in the Primary Care Setting (October 2008): [www.nyc.gov/html/doh/downloads/pdf/chi/chi27-suppl2.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi27-suppl2.pdf)
  - Improving the Health of People Who Use Drugs (May/June 2009): [www.nyc.gov/html/doh/downloads/pdf/chi/chi28-3.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi28-3.pdf)
  - Improving Medication Adherence (July 2009): [www.nyc.gov/html/doh/downloads/pdf/chi/chi28-suppl4.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi28-suppl4.pdf)
- Motivational interviewing resources for clinicians, researchers, and trainers: [www.motivationalinterviewing.org](http://www.motivationalinterviewing.org)
- Take Care New York home page: [www.nyc.gov/html/doh/html/tcny/index.shtml](http://www.nyc.gov/html/doh/html/tcny/index.shtml)
- New York City Department of Health and Mental Hygiene Obesity Action Kit: [www.nyc.gov/html/doh/html/csi/csi-obesity.shtml](http://www.nyc.gov/html/doh/html/csi/csi-obesity.shtml)
- New York State Department of Health—HIV/AIDS Training for Providers: [www.nyhealth.gov/diseases/aids/training/index.htm](http://www.nyhealth.gov/diseases/aids/training/index.htm)
- New York State Office of Mental Health: [www.omh.state.ny.us](http://www.omh.state.ny.us)
- US Department of Health and Human Services—Treating Tobacco Use and Dependence: 2008 Update: [www.ahrq.gov/path/tobacco.htm#clinicians](http://www.ahrq.gov/path/tobacco.htm#clinicians)

### For Patients

- Smoke Free: [www.smokefree.gov](http://www.smokefree.gov)
- New York State Smokers Quitline (866-NY-QUITS or 866-697-8487): [www.nysmokefree.com](http://www.nysmokefree.com)
- Free and Confidential STD Clinics in New York City: [www.nyc.gov/html/doh/html/std/std2.shtml](http://www.nyc.gov/html/doh/html/std/std2.shtml)
- New York State Department of Health—HIV/AIDS Materials for Consumers: [www.nyhealth.gov/diseases/aids/publications/orderinginfo.htm](http://www.nyhealth.gov/diseases/aids/publications/orderinginfo.htm)
- LIFENET (24 hours a day/7 days a week):  
In English: 800-LIFENET (800-543-3638)  
In Spanish: 877-AYUDESE (877-298-3373)  
In Chinese: ASIAN LIFENET (877-990-8585)  
For other languages, call 800-LIFENET or 311 and ask for an interpreter. [www.mhaofnyc.org/lifenet.html](http://www.mhaofnyc.org/lifenet.html)
- New York City Department of Health and Mental Hygiene: Health Bulletin #23. How to Find a Doctor: [www.nyc.gov/html/doh/downloads/pdf/public/dohmhnews3-10.pdf](http://www.nyc.gov/html/doh/downloads/pdf/public/dohmhnews3-10.pdf)
- New York State Office of Mental Health: [www.omh.state.ny.us](http://www.omh.state.ny.us)
- Ryan White Part A (Formerly Title I) Care Services for HIV Care Coordination: [www.ryanwhitenyc.org](http://www.ryanwhitenyc.org)

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Suggested citation: Reil M, Chisholm J, Lednyak L, Cohen G. Improving the

health of adults with serious mental illness. *City Health Information*.

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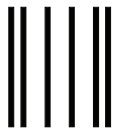
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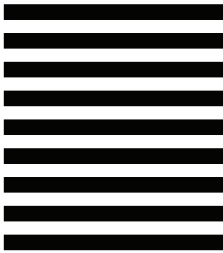


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### Continuing Education Activity

This issue of *City Health Information*, including the continuing education activity, can be downloaded from [www.nyc.gov/html/doh/html/chi/chi.shtml](http://www.nyc.gov/html/doh/html/chi/chi.shtml).

### Instructions

Read this issue of *City Health Information* for the correct answers to questions. To receive continuing education credit, you must answer 4 of the first 5 questions correctly.

### To Submit by Mail

1. Complete all information on the response card, including your name, degree, mailing address, telephone number, and e-mail address. PLEASE PRINT LEGIBLY.
2. Select your answers to the questions and check the corresponding boxes on the response card.
3. Return the response card or a photocopy of the card postmarked **no later than March 31, 2012**.

Mail to: CME/CNE Administrator; NYC Department of Health and Mental Hygiene, 2 Lafayette Street, CN-65, New York, NY 10277-1632.

### To Submit Online

Visit [www.nyc.gov/html/doh/html/chi/chi.shtml](http://www.nyc.gov/html/doh/html/chi/chi.shtml) to complete this activity online. Once logged into NYC MED, use the navigation menu in the left column to access this issue of *City Health Information*. Your responses will be graded immediately, and you can print out your certificate.

## Continuing Education Activity

Improving the Health of Adults With Serious Mental Illness

### SPONSORED BY

THE NEW YORK CITY DEPARTMENT OF  
HEALTH AND MENTAL HYGIENE (DOHMH)  
CITY HEALTH INFORMATION

FEBRUARY/MARCH 2010 VOL. 29(2):9-16

### Objectives

At the conclusion of this activity, participants should:

1. Identify the most common comorbid medical conditions affecting adults with serious mental illness.
2. Identify social, behavioral, and treatment factors that contribute to poor health in people with serious mental illness.
3. Understand health monitoring recommendations for patients taking psychotropic medication.

### CME Accreditation Statement

The New York City Department of Health and Mental Hygiene (NYC DOHMH) is accredited by the Medical Society of the State of New York to sponsor continuing medical education for physicians. The NYC DOHMH designates this educational activity for a maximum of 1.0 AMA PRA Category 1 credit.<sup>TM</sup> Physicians should only claim credit commensurate with the extent of their participation in the activity.

### CNE Accreditation Statement

The New York City Department of Health and Mental Hygiene is an approved provider of continuing nursing education by the New York State Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.

This CNE activity has been assigned code  
6WXLFX-PRV-099.

It has been awarded 1.0 contact hour.

Participants are required to submit name, address, and professional degree. This information will be maintained in the Department's CME/CNE program database. If you request, the CME/CNE Program will verify your participation and whether you passed the exam.

We will *not* share information with other organizations without your permission, except in certain emergencies when communication with health care providers is deemed by the public health agencies to be essential or when required by law. Participants who provide e-mail addresses may receive electronic announcements from the Department about future continuing education activities as well as other public health information.

**Participants must submit the accompanying exam by March 31, 2012.**

### CME/CNE Activity Faculty:

Gerald Cohen, MD  
Marlene Reil, PhD  
Janice Chisholm, MPH, MA

All faculty are affiliated with the NYC DOHMH. The faculty does not have any financial arrangements or affiliations with any commercial entities whose products, research, or services may be discussed in these materials.

## CME/CNE Activity Improving the Health of Adults With Serious Mental Illness

February/March 2010

### 1. Which of the following contributes to the increased morbidity and mortality of people with serious mental illness?

- A. High-risk behaviors such as smoking.
- B. Preventable medical conditions such as diabetes and cardiovascular disease.
- C. Significant weight gain associated with use of some psychotropic medications.
- D. Increased suicide risk.
- E. All of the above.

### 2. All of the following psychotropic medications are associated with weight gain EXCEPT:

- A. Lithium.
- B. Bupropion.
- C. Valproate.
- D. Olanzapine.
- E. Clozapine.

### 3. Which of the following should be measured at baseline prior to initiating treatment with a second-generation antipsychotic medication?

- A. Body mass index.
- B. Blood pressure.
- C. Fasting plasma glucose.
- D. Fasting lipid profile.
- E. All of the above.

### 4. All of the following are true EXCEPT:

- A. People with serious mental illness smoke at about the same rate as the general population.
- B. Motivational interviewing can be used to help people with serious mental illness quit smoking.
- C. Many patients show improvements in psychiatric symptoms during smoking cessation treatment.
- D. Smoking can result in the accelerated metabolism of some psychotropic medications.
- E. Patients with serious mental illness should be closely monitored for side effects of medications used to aid smoking cessation.

### 5. Which of the following is true about medication adherence?

- A. Appointment nonadherence is linked to medication nonadherence.
- B. Many patients discontinue psychotropic medications without telling their doctor.
- C. Adherence can be improved by reducing the number of prescribed medications when appropriate.
- D. Adherence can be improved by helping patients manage medication side effects.
- E. All of the above.

### 6. How well did this continuing education activity achieve its educational objectives?

- A. Very well.
- B. Adequately.
- C. Poorly.

### 7. Will the content learned from this activity impact your practice?

- A. Yes.
- B. No.
- C. Not applicable.

### 8. Are you a DOHMH employee?

- A. Yes.
- B. No.

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