

# Psychotic Disorders

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Although often used to describe states of confusion, disorientation, or delirium, *psychosis* is best viewed as a state of brain dysfunction characterized by delusions, hallucinations, and formal thought disorder (e.g., derailment, thought blocking, thought insertion) (Box 53-1). Psychosis should not be viewed as a disease but as a dynamic state induced by a neurochemical dysfunction that leads to the specific clinical presentation.<sup>3</sup> Psychosis may be transient, intermittent, or continuous.

## ETIOLOGY

Etiologies of psychosis may be described in terms of neurobiologic, genetic, environmental, and sociocultural factors. Brain structural and neuropathologic factors are thought to increase the risk of psychosis. The greatest risk factor for late-life psychosis appears to be progressive dementia. Three primary neurochemical systems (dopamine, neurotensin, and serine metabolism) are implicated in the development of a psychotic state.<sup>3</sup>

Stressful life events tend to occur before an episode of psychosis but are not causes of psychosis; rather, they can be viewed as destabilizing factors that exacerbate a preexisting tendency to develop psychosis. People with prolonged psychosis tend to experience *social drift*; that is, their impairment causes a downward shift in social class. Whether this change in social class is causative or is an effect of a prolonged psychotic state is not always clear. Most current data suggest that lower social class is a consequence of the psychosis.

## EPIDEMIOLOGY AND PATHOPHYSIOLOGY

The 1-year prevalence rate of psychosis in the United States is less than 2.5%. Schizophrenic-related disorders have a 1.1%, severe cognitive impairment with superimposed psychosis approximately a 1%, and other causes (e.g.,

major depressive disorder, bipolar disorder, and organic brain disorder) have strong genetic influences, as shown from adoption, family, and twin studies. No simple pattern of inheritance has been isolated. Historic data have indicated that the risk of a person developing schizophrenia (1% throughout the population) increases if other relatives have the disorder, up to 10% with a schizophrenic sibling, 12% with a schizophrenic parent, and 40% to 45% if both parents have schizophrenia.

Theories on the *neurobiology of psychosis* implicate neurochemical, structural, or functional factors.<sup>4</sup> Most likely, multiple events (e.g., drugs, brain injury, morphologic changes) cause impairment in neurochemical pathways producing the expression of psychosis. Dopamine modulation through dysfunctional serine metabolism, brain regional neurotensin levels, and increased activity of dopamine on selected dopamine receptors in certain areas of the brain are important in the etiology of psychosis. Trigger events may be different, but the final common pathway involves altered thalamic filtering.

## PATIENT EVALUATION

### Psychiatric History

The description of the current episode of psychosis is crucial in establishing a differential diagnosis. The knowledge that psychosis is present does little in determining the etiology and appropriate management. Causes of psychosis can be divided into *primary* (psychoses with psychiatric illness) and *secondary* (induced psychosis). These categories overlap because a fundamental impairment remains in neurochemical pathways of the brain.

Duration of the psychotic symptoms needs to be established. An acute onset of visual hallucinations indicates a medical illness or drug-induced psychotic process. In contrast, a 2- to 4-week history of increasing auditory and visual hallucinations suggests a schizophrenia-related disorder. *Prodromal development* of psychosis refers to more subtle manifestations of an early psychotic process. Before the actual psychosis, the patient may have displayed social withdrawal, decreased attention to personal hygiene, or gradual difficulty with school or work performance. These symptoms would support psychosis of gradual onset. Prodromal development is most often seen in schizophrenia-related disorders and rarely in acute psychosis caused by medical illness or medications.

**Hallucinations.** Visual hallucinations can occur in patients with schizophrenia; however, organic causes must be closely evaluated, such as in drug and alcohol intoxication and withdrawal. Olfactory hallucinations, which are less common in schizophrenia, require careful assessment to rule out sella turcica tumors. Auditory hallucinations are often a feature of a schizophrenic type of disorder. Auditory hallucinations should be assessed as to whether the voices command the patient to perform some act (self-harm or

### Box 53-1. Symptoms of Psychosis

**Delusions:** Beliefs or situations not based on reality.  
**Hallucinations:** visual, auditory, olfactory, or tactile perceptions without external stimuli.  
**Thought insertion:** placement of thoughts into one's brain by an outside force (e.g., belief that neighbor is putting images into patient's head).

can be beneficial for those recovering from an acute psychotic episode. State associations for mentally ill persons can provide a listing of resources in a specific community.

**Behavioral intervention and reality orientation** are necessary for some patients. Acutely psychotic patients need to be oriented to reality (e.g., calendars and clocks in room, reassurance from staff or family as to who they are, where they are, and the date, time, and situation). Interactions with psychotic individuals are best done by one individual at a time; psychotic patients do poorly when they must shift attention between two or more people. A better approach is having one physician or staff member talk to and examine the patient while others remain at the side (not back) of the patient. Soft background music (no words) may also decrease the risk of physical agitation. Calm reassurance may be offered to the patient, and the physician or staff can redirect the patient to nonpsychotic themes. Health care professionals must be alert to protect themselves from a patient who strikes out or feels threatened.

**Electroconvulsive therapy (ECT)** is appropriate in select patients: depression with psychotic features, manic disorder

success previously, and psychosis with strong affective component. ECT may also benefit patients with psychosis resulting from hypopituitarism or Parkinson's disease.

## Pharmacologic Treatment

**Neuroleptics.** Neuroleptics are the main treatment for psychosis. They generally have very similar efficacy, and thus the choice of neuroleptic generally depends on the side effect profile best suited for the patient (Table 53-2). Schizophrenic patients not treated with antipsychotic drugs will likely relapse within 3 years, with greater intensity of psychosis and more frequency than patients treated with antipsychotic medication.<sup>5</sup> Except for some atypical neuroleptics, all these medications can cause extrapyramidal side effects, tardive dyskinesia, and other anticholinergic side effects.<sup>6</sup> Neuroleptic malignant syndrome (fever, muscle rigidity, altered mental status, autonomic instability) occurs rarely with neuroleptics but must be considered.

Neuroleptics with lower potency (e.g., chlorpromazine, thioridazine) tend to have greater anticholinergic side effects and thus increase the risk of falls and orthostatic blood

**Table 53-2. Antipsychotic Medications**

Class/medication	Equivalent to 1 mg haloperidol (approx. mg)	Average daily dosage range (mg)	Route	Relative cumulative side effect profile
<b>Butyrophenones†</b>				WC
Haloperidol (Haldol)	1	1-25	PO, IM, IV	1
Haloperidol decanoate	1	25-200	IM	1
<b>Thioxanthenes†</b>				
Thiothixene (Navane)	2.5	15-30	PO, IM	1
<b>Phenothiazines</b>				
<b>Aliphatic</b>				
Chlorpromazine (Thorazine)	50	200-1000	PO, IM§	4
<b>Piperidine</b>				
Thioridazine (Mellaril)	50	100-600	PO	3
<b>Phenazines</b>				
Fluphenazine (Prolixin)†	1	2-20	PO, IM	1
Fluphenazine decanoate†	1	25-100	IM, SC	1
<b>Piperazine</b>				
Trifluoperazine (Stelazine)	2.5	2-20	PO, IM	2
<b>Dibenzoxazepine</b>				
Loxapine (Loxitane)	5	60-100	PO, IM	2
<b>Atypical agents</b>				
Clozapine (Clozaril)¶	75	25-700	PO	1
Risperidone (Risperdal)¶	2	1-8	PO	1

are more sedating, which is a benefit in younger agitated patients. Neuroleptics can also lower the seizure threshold. When prescribing a neuroleptic for a psychotic patient, the physician should obtain informed consent from the family or guardian to treat with this class of medication. Two long-acting depot intramuscular neuroleptics, haloperidol decanoate given every 4 to 5 weeks and fluphenazine decanoate every 3 to 4 weeks, are useful for the noncompliant patient or the chronic psychotic patient who will not take or is sporadic in taking oral medications. Other newer atypical neuroleptics (olanzapine, risperidone, and quetiapine) are excellent choices as first-line neuroleptics.

*Other Medications.* Carbamazepine and valproic acid may be effective if an ictal focus is contributing to the psychosis. Benzodiazepines, when combined with a neuroleptic in the severely agitated psychotic patient, are very effective in achieving more rapid control of the agitation and psychosis. For the young to middle-aged psychotic patient, oral or intramuscular haloperidol (3 to 5 mg) and lorazepam (1 to 2 mg) may be given every 30 to 60 minutes until control is achieved. This combination can be more effective than a neuroleptic alone.

### Consultation or Hospitalization

Consultation with a psychiatric colleague for a patient with psychosis usually is recommended if there is any concern about the etiology, diagnosis, or management. Although the primary care physician is able to diagnose accurately the presence of a psychosis, evaluating the etiology of psychosis may be difficult. Psychiatric consultation can assist in determining the optimal pharmacologic and nonpharmacologic interventions.

Actively psychotic patients may present such a risk of harm to themselves and others that hospitalization should be strongly considered. Disadvantages to hospitalization include (1) removing patients from a potentially safe and structured environment and (2) placing them on a rapidly changing hospital ward where they may become more psychotic. Psychosis itself does not require hospitalization, but other features often seen with psychosis may require it; psychotic patients often have impaired judgment and impulse control. Hospitalization is highly recommended, however, for certain patients. If the psychotic patient is suicidal or is hearing voices that command self-harm, or if a delusion is present that mandates self-mutilation, hospitalization with aggressive treatment is advised.

Violence or physical agitation is often a major concern of family or health care providers. Most episodes of physical agitation are nondirected and defensive in nature, except for the delusional person with focused paranoia who may attack a specific person.<sup>8</sup> These patients are often noncompliant with outpatient management. Hospitalization provides safety as well as a means to gain better control of the psychosis.

### Suicidal Patients

Approximately 15% of schizophrenic patients end their life by suicide. Most psychotic patients who commit suicide are young unemployed males with a high level of social functioning before the onset of psychosis. The early detection and treatment of psychosis, especially with depressive features, represent a major strategy to prevent suicide. The physician assessing a psychotic patient for suicide risk at minimum should address the following questions: (1) Is there a history of prior suicide attempts? (2) Is there a plan and means to commit suicide? (3) Does the patient have feelings of hopelessness or that life is not worth living? and (4) Are there thoughts of death? The presence of command hallucinations needs to be determined because the commands are often for self-injury. A psychotic patient who fears mental disintegration or has not been compliant with treatment is at higher risk for completed suicide.

When a psychotic patient is identified at moderate to high suicide risk (a subjective decision), hospitalization and psychiatric consultation are indicated. A patient with only occasional transient suicidal ideations may be managed as an outpatient; however, the clinician must be knowledgeable about the treatment of psychosis as well as affective disorders, while realizing that a psychotic patient's judgment is generally impaired. Outpatients should be provided community services that combine treatment with recreation and occupational activities.

### Adolescents

When psychosis occurs in the adolescent, the physician must evaluate for primary vs. secondary psychosis. Brief reactive psychosis generally is time limited and may only require supportive care and a structured environment. The use of neuroleptics in this age group requires careful consideration of whether the benefits outweigh the risks for development of tardive dyskinesia. If the psychosis necessitates a medication because of auditory or visual hallucinations, commanding voices, or delusions, one of the atypical antipsychotics may be useful.

Adolescents require special concern regarding suicidal potential. An acutely psychotic adolescent is at increased risk of self-harm because of impaired impulse control, impaired judgment, and commanding voices. This patient should be hospitalized; unless experienced in managing young psychotic patients, the physician should consult with a trusted psychiatrist.

### Pregnant and Postpartum Patients

Psychosis during pregnancy places mother and fetus at risk from its sequelae. The physician must consider the risks and benefits of any treatment. Potential causes of the psychosis must be excluded and environmental control maximized. If the pregnant patient is taking a neuroleptic, the dosage should be kept as low as possible to control the psychosis. Any use of a neuroleptic requires the patient's informed consent.

physician should consider a low-dose neuroleptic therapy (e.g., haloperidol, 2 mg daily increased by 1 to 2 mg every other day, up to a maximum of 10 mg). A chronic psychotic process may best be treated with a low-dose maintenance neuroleptic. Because of the potential teratogenic effect of pharmacotherapy, ECT should be considered, especially if affective or catatonic symptoms are present.

A small subset (less than 1%) of postpartum women will develop a psychosis within the first weeks after delivery. These psychotic episodes may occur during a postpartum depression. Aggressive treatment to control the primary illnesses (antidepressants for the depression, neuroleptics for the psychosis) should be undertaken to maintain maternal-infant bonding and to reduce the overall disruption from the psychosis. If the mother is taking neuroleptics, she must be cautioned against breast-feeding because the newborn would be exposed to potentially significant levels of the neuroleptic. Low doses of a neuroleptic (e.g., haloperidol, 2 to 5 mg/day) should be used until the psychosis is controlled. After the psychosis is under control for 4 to 8 weeks, the neuroleptic can be decreased by 1 mg each week until discontinued, with careful attention to psychotic recurrence. ECT is useful in postpartum psychosis with an affective component.

## Elderly Patients

Geriatric patients with psychosis fall into four broad diagnostic groups: (1) delirium related or drug/illness induced, (2) continuation of lifelong or chronic psychotic illness, (3) affective disorders with psychosis, and (4) dementia-related syndromes with psychosis. The first group, although likely requiring neuroleptics, should have aggressive intervention to correct the underlying deficits (e.g., hypoxia, infection, decreased cerebral blood flow) causing the delirium. Neuroleptics in elderly patients should be started at low doses and slowly titrated (e.g., risperidone, 0.25 to 0.50 mg increased by 0.25 to 0.50 mg every 1 to 2 days). Faster titration may be needed but requires greater attention to orthostatic blood pressure monitoring. Acute episodes of psychosis with agitation may require higher initial doses (e.g., 1.0 to 1.5 mg of risperidone). Elderly patients show the greatest sensitivity to neuroleptic side effects, especially orthostasis, increased risk of falls, and extrapyramidal symptoms, and therefore require lower doses and slower titration. The newer atypical agents (risperidone, olanzapine, quetiapine) are ideally suited for this age group. Cumulative effects of neuroleptics may require that the dose be decreased after about 3 to 4 weeks, since some patients become more sedated as the psychosis is controlled.

## Perioperative Patients

Psychotic patients awaiting surgery must have individualized treatment recommendations. An actively psychotic patient may receive a high-potency oral or intramuscular neuroleptic 2 hours before anesthesia as long as the anesthesiologist notes potential side effects. Stable patients with a chronic psychotic illness may safely have their neuroleptics stopped 12 to 24

hours before surgery. Discontinuation of neuroleptics and interaction of medications (e.g., Sinemet and Parlodel) can precipitate a psychosis. The medical patient with a history of psychosis and reemergence of psychotic symptoms can generally be treated with the same neuroleptic regimen effective in the past. Medical patients with no previous psychotic symptoms require careful evaluation so that the causative agent(s) may be removed or reduced, if possible. Short-term use of high-potency neuroleptics (e.g., haloperidol, 1 to 8 mg/day) is appropriate for control of hallucinations, delusions, and agitation. Besides neuroleptics, management should incorporate a structured environment with a reduction in external disrupting noise. Potential for suicide must be assessed, and the patient at risk should receive one-to-one care until consultation is obtained.

## Stable Compensated Patients

Stable compensated patients with a prior history of psychosis should be maintained with a similar treatment plan that has kept them stable in the past. The primary care physician should realize that neuroleptics are generally only one part of this treatment approach. The patient may have been in a structured home setting or group home environment, and maintaining these nonpharmacologic interventions should not be overlooked.

Neuroleptic-induced side effects (e.g., akathisia, stiffness, cogwheel rigidity) are a major reason for medication non-compliance. For patients with evidence of cogwheel rigidity or extrapyramidal symptoms, benztropine (1 to 2 mg orally twice a day for 2 to 4 weeks) is generally effective. Decreasing the neuroleptic can reduce these side effects and is especially helpful in decreasing or eliminating akathisia. Tapering an antipsychotic in a patient with a history of chronic psychosis to the lowest effective dosage should be attempted slowly and in small increments over several months. Recent hallucinations, delusions, bizarre behaviors, and decreased attention to grooming are concerns for the reemergence of psychosis. If these symptoms emerge, the physician should consider increasing the neuroleptic dose by 10% to 20%. If the patient is still stable at 6 months, the neuroleptic can be decreased by 10% to 20%, with close follow-up to ensure that psychosis does not recur.

## SUMMARY

Psychosis is a state of brain dysfunction characterized by delusions, hallucinations, and formal thought disorder. It can often be managed very effectively, and in many patients with secondary induction, sustained remission can be achieved. Neuroleptic treatment remains the cornerstone of care for the psychotic patient. Neuroleptics have similar efficacy, and thus the choice of neuroleptic should be based on the most desired side effect profile. Pharmacologic developments will pursue the reduction of troublesome side effects, resulting in more effective treatment and better compliance.

# Medical comorbidity in schizophrenia

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HAVING A MENTAL ILLNESS has been, and remains, a barrier to effective medical care. Schizophrenia and, indeed, most mental illnesses are associated with undue medical morbidity and mortality.<sup>1</sup>

There are two key issues relating to comorbidity: detection and prevention. In a recent article, Harris and Mercer<sup>2</sup> discussed recommendations of the Royal Australian College of General Practitioners (RACGP)<sup>3</sup> for preventive action in general practice. Based on loss of health calculated as age-standardised disability-adjusted life-years (DALYs),<sup>4</sup> targets selected by the RACGP included smoking, physical activity, high blood pressure, alcohol consumption, obesity, high blood cholesterol level, diabetes, breast cancer and bowel cancer. Although all of these conditions and behaviours are known to be particularly problematic for people with schizophrenia or various other mental illnesses,<sup>1</sup> this group, as a whole, receives less than satisfactory attention to its medical needs. The preventive role undertaken by general practitioners would be of great service to the community if it were applied more broadly to people who suffer from serious mental illness.

## Mortality

Schizophrenia has been described as a "life-shortening disease",<sup>5</sup> and there is growing evidence to support this claim.<sup>6-9</sup> Without discounting suicide, which accounts for less than a third of premature deaths, people diagnosed with schizophrenia can expect to live 9-12 years fewer, on average, than those in the general population.

Australian data support the findings of overseas studies. For example, in a study based on Victoria's Psychiatric Case Register and State coronial data, patients with schizophrenia were found to be 2.9 times more likely to die of natural causes, especially cardiovascular disease, than people in the general population.<sup>10</sup> Studies in Western Australia<sup>1</sup> and

## ABSTRACT

- Schizophrenia has been described as a "life-shortening disease", and physical comorbidity accounts for 60% of premature deaths not related to suicide.
- People with schizophrenia and other mental illnesses have a higher rate of preventable risk factors such as smoking, high alcohol consumption, poor diet, and lack of exercise.
- Recognition and management of morbidity in people with mental illness are made more difficult by barriers related to the patient, the illness, the attitudes of medical practitioners, and the structure of healthcare delivery services.
- Improved detection and treatment of medical illness in people with schizophrenia will have significant benefits for their psychosocial functioning and overall quality of life.

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New South Wales<sup>7</sup> have also shown that mortality is higher in people with schizophrenia and other mental illnesses.

It is an unfortunate situation that psychotic patients present less and are hospitalised less often for a variety of medical conditions, but are at the same time over-represented in population-matched mortality figures. This suggests that morbidity in these people is less efficiently detected.

## Comorbidity

People with schizophrenia and other mental illnesses also have high rates of physical comorbidity. However, several US studies have shown that the detection rate of physical illness among people with mental illness is very poor. Koran et al<sup>11</sup> estimated that 45% of patients in California's public mental-health system had physical disease and, of these, 47% were undetected by the treating doctor. A substantial proportion of these illnesses were judged to be either causing or exacerbating the patient's mental illness. A study by Koranyi<sup>12</sup> of psychiatric clinic patients revealed remarkably similar findings: 43% of patients had physical illnesses and, of these, 46% had not been diagnosed by the referring doctor (non-psychiatrist physicians had missed 33%; psy-

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## 1: Common physical conditions found in patients with mental illness, and relationship between physical illness and psychiatric condition, medication and lifestyle factors

### Diabetes<sup>14-16</sup>

- Increased risk in people with schizophrenia of developing glucose-regulation abnormalities, insulin resistance and type 2 diabetes mellitus.
- Lifestyle factors (poor diet, sedentary behaviour) exacerbate the problem.
- All antipsychotic agents (atypicals more than typicals) increase the propensity to develop diabetes.

### Hyperlipidaemia<sup>17</sup>

- Antipsychotic medications have been associated with the development of hyperlipidaemia (both related to, and independent of, weight gain).
- Some typical antipsychotics (eg, haloperidol) have no effect on lipids; phenothiazines (eg, chlorpromazine) tend to raise triglyceride levels and reduce levels of high-density lipoproteins.
- Dibenzodiazepine-derived atypical antipsychotics (eg, clozapine, olanzapine) are associated with increased levels of fasting glucose and lipids compared with risperidone.

### Cardiovascular disease (hypertension, cardiac arrhythmias)<sup>1,18-20</sup>

- People with mental illness have higher rates of cardiovascular and respiratory disorders than the general population.
- Antipsychotic agents contribute to metabolic syndrome X (hypertension, hyperlipidaemia, hyperglycaemia, insulin resistance and obesity).
- Lifestyle factors (smoking, alcoholism, poor diet, lack of exercise) contribute to increased risk of cardiac problems.
- Mortality due to ischaemic heart disease, cardiac arrhythmias and myocardial infarction is higher in people with mental illness.

### Obesity<sup>21,22</sup>

- 40%–62% of people with schizophrenia are obese or overweight.
- Both typical and atypical antipsychotics can induce weight gain. Dibenzodiazepine-derived atypicals (eg, clozapine, olanzapine) cause rapid weight increase in the short term. Long-term differences between agents are less clear.
- Lifestyle factors and poor ability to modify behaviour also influence obesity.

### Malignant neoplasms<sup>23,24</sup>

- People with schizophrenia are no more likely to develop cancer overall, but, in the event of cancer, have a 50% lower chance of survival.
- Differences exist for individual cancers in people with mental illness (eg, increased risk of breast cancer for women; reduced risk of lung cancer for men).

### HIV/AIDS<sup>25,26</sup>

Incidence of HIV/AIDS in people with schizophrenia (estimated to be 4%–23%) appears higher than in the general population. Associated factors include "unsafe sex", drug injection and non-injected drug use.

### Hepatitis C<sup>25</sup>

- Increased prevalence in people with schizophrenia compared with the general population.

### Osteoporosis<sup>27</sup>

- Accelerated rates of osteoporosis in people with schizophrenia are attributed to antipsychotic-driven decreases in oestrogen and testosterone, reduced calcium due to smoking and alcoholism, and polydipsia.

### Hyperprolactinaemia<sup>28</sup>

- High doses of typical antipsychotics and the atypical antipsychotics risperidone and amisulpride raise prolactin levels, causing galactorrhoea, amenorrhoea,

physical illnesses to psychiatric conditions, psychotropic medications and lifestyle factors. For any individual patient, biological proneness to mental and/or physical illness is likely to interact with the patient's treatment and lifestyle. This once again reinforces the preventive notions expounded by the RACGP.<sup>3</sup>

## The influence of lifestyle factors

High mortality and morbidity in schizophrenia may be attributed to an environment in which unhealthy and high-risk behaviours such as smoking, substance abuse, lack of exercise and poor diet are prevalent.<sup>31</sup> An Australian study examining lifestyle factors that increased cardiovascular risk found significant differences between people with mental illness and the general population: 70% v 50% were smokers or ex-smokers; 11.5% v 3.1% used harmful levels of alcohol; and 40% v 8% were obese.<sup>18</sup> The rates of obesity (body mass index [BMI]  $\geq 30 \text{ kg/m}^2$ ) may in fact be even higher, approaching 51% in particular groups of mentally ill patients, with a considerable number being overweight (BMI 25–29.9  $\text{kg/m}^2$ ).<sup>32</sup> Jablensky and colleagues' landmark survey of Australian low-prevalence psychotic disorders<sup>33</sup> reported that 73% of men and 56% of women with a psychotic disorder were current smokers, while 38% of all people with a psychotic illness had been drinking daily, or for several days per week, in the year preceding the study interview. These data are consistent with overseas findings.<sup>34</sup>

Smoking-related fatalities are significantly higher in people with schizophrenia than in the general population.<sup>8</sup> Smoking is a good example of how behaviour and treatment interact to increase morbidity at a number of levels. It is a risk factor for respiratory and ischaemic heart disease and stroke, and, by reducing available plasma levels of antipsychotics (notably olanzapine and clozapine), it may influence the patient's behaviour and the treatment outcome. With respect to diet, the cognitive and social deficit symptoms of schizophrenia may make patients prone to choosing easily obtainable "fast" foods (high in saturated fats and low in fibre) as their major source of nutrition. The same deficits, especially those to do with motivation, often leave the patient without any desire to keep physically active to counter the effects of their poor diet and maintain general fitness. This is further compli-

## 2: Barriers to recognition and management of medical illness in people with schizophrenia and other mental illnesses

### Doctor/healthcare system factors

- Reticence of non-psychiatrists to treat people with serious mental illness.<sup>6</sup>
- Lack of adequate follow-up of patients with mental illness, due to patients' itinerancy and lack of motivation.<sup>8</sup>
- Changes of treating doctor, with the result that many patients do not have a longitudinal history available.<sup>6,37</sup>
- Perception by specialist psychiatrists that physical health matters should be the province of referring doctors.<sup>37</sup>
- Specialists' attention focused principally on patients' psychiatric problems,<sup>38</sup> with physical examination conducted infrequently.
- Physical complaints regarded by psychiatrists as psychosomatic symptoms.<sup>38</sup>
- Time and resources for physical/medical examinations not available in current mental-health service settings.<sup>6</sup>

### Patient/illness factors

- Poor general treatment compliance.<sup>8</sup>
- Avoidance or neglect of contact with general practitioners or general healthcare services.<sup>6</sup>
- Unawareness of physical problems because of cognitive deficits associated with mental illness.<sup>6,38</sup>
- Patients' difficulty in communicating their physical needs and problems in general.
- Physical symptoms unreported/masked because of high pain tolerance in some patients, and reduction in pain sensitivity associated with use of antipsychotic drugs.<sup>37,38</sup>
- In some patients, reluctance to discuss problems or volunteer symptoms and/or general uncooperativeness.<sup>6,37</sup>
- Patients' difficulty in comprehending healthcare advice and carrying out required changes in lifestyle.

Sundram (page S71).<sup>36</sup> Together, these lifestyle factors increase the risk or severity of medical conditions, particularly the development of metabolic syndrome X (obesity, insulin resistance, dyslipidaemia, impaired glucose tolerance and hypertension).<sup>19</sup>

## Barriers to detection and treatment of medical comorbidity

Despite the high comorbidity and mortality rates in people with serious mental illness, there are significant barriers to the early detection and treatment of physical comorbidity. One patient's family described the difficulty of accessing adequate care as "falling between the cracks".

Barriers to effective physical healthcare for mentally ill patients include patient-related elements, the nature of the illness, the medical system and available resources, and the attitudes of medical practitioners themselves (Box 2). In community-based models of psychiatric care, as practised in

## 3: What should be done?

- Collection of a standard checklist and core information data concerning physical health should be routine.<sup>39</sup>
- Psychiatric services should be adequately equipped to carry out basic physical medicine tasks.<sup>40</sup>
- Refresher training should be regularly provided for psychiatrists and key members of multidisciplinary community psychiatric teams. This could encompass elements of detection, management and preventive counselling.
- Specific interdisciplinary teams with broad medical and psychiatric expertise and training should be created. These could serve in enhanced models of shared care.
- Formalised programs to address training and other issues should be set up at a state or regional level. These could be modelled on, for example, the MH-OAT program in New South Wales,<sup>41</sup> or the educational tools being developed by the Alliance of NSW Divisions of General Practice in collaboration with NSW Health.

Current mental health services in many parts of Australia are under-resourced for the care of people with serious mental illness. GPs are also faced with increasing responsibilities and limited support. For those with serious mental illness, an active alliance, supported by Divisions of General Practice, State and federal health departments and government policy, is needed to ensure adequate treatment and positive outcomes.

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## Competing interests

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## 1: Common physical conditions found in patients with mental illness, and relationship between physical illness and psychiatric condition, medication and lifestyle factors

### *Diabetes*<sup>14-16</sup>

- Increased risk in people with schizophrenia of developing glucose-regulation abnormalities, insulin resistance and type 2 diabetes mellitus.
- Lifestyle factors (poor diet, sedentary behaviour) exacerbate the problem.
- All antipsychotic agents (atypicals more than typicals) increase the propensity to develop diabetes.

### *Hyperlipidaemia*<sup>17</sup>

- Antipsychotic medications have been associated with the development of hyperlipidaemia (both related to, and independent of, weight gain).
- Some typical antipsychotics (eg, haloperidol) have no effect on lipids; phenothiazines (eg, chlorpromazine) tend to raise triglyceride levels and reduce levels of high-density lipoproteins.
- Dibenzodiazepine-derived atypical antipsychotics (eg, clozapine, olanzapine) are associated with increased levels of fasting glucose and lipids compared with risperidone.

### *Cardiovascular disease (hypertension, cardiac arrhythmias)*<sup>1,18-20</sup>

- People with mental illness have higher rates of cardiovascular and respiratory disorders than the general population.
- Antipsychotic agents contribute to metabolic syndrome X (hypertension, hyperlipidaemia, hyperglycaemia, insulin resistance and obesity).
- Lifestyle factors (smoking, alcoholism, poor diet, lack of exercise) contribute to increased risk of cardiac problems.
- Mortality due to ischaemic heart disease, cardiac arrhythmias and myocardial infarction is higher in people with mental illness.

### *Obesity*<sup>21,22</sup>

- 40%–62% of people with schizophrenia are obese or overweight.
- Both typical and atypical antipsychotics can induce weight gain. Dibenzodiazepine-derived atypicals (eg, clozapine, olanzapine) cause rapid weight increase in the short term. Long-term differences between agents are less clear.
- Lifestyle factors and poor ability to modify behaviour also influence obesity.

### *Malignant neoplasms*<sup>23,24</sup>

- People with schizophrenia are no more likely to develop cancer overall, but, in the event of cancer, have a 50% lower chance of survival.
- Differences exist for individual cancers in people with mental illness (eg, increased risk of breast cancer for women; reduced risk of lung cancer for men).

### *HIV/AIDS*<sup>25,26</sup>

Incidence of HIV/AIDS in people with schizophrenia (estimated to be 4%–23%) appears higher than in the general population. Associated factors include "unsafe sex", drug injection and non-injected drug use.

### *Hepatitis C*<sup>25</sup>

- Increased prevalence in people with schizophrenia compared with the general population.

### *Osteoporosis*<sup>27</sup>

- Accelerated rates of osteoporosis in people with schizophrenia are attributed to antipsychotic-driven decreases in oestrogen and testosterone, reduced calcium due to smoking and alcoholism, and polydipsia.

### *Hyperprolactinaemia*<sup>28</sup>

- High doses of typical antipsychotics and the atypical antipsychotics risperidone and amisulpride raise prolactin levels, causing galactorrhoea, amenorrhoea, oligomenorrhoea, sexual dysfunction and reduced bone mineral density, and

