The physical health of patients with mental illness

Complex interactions require complex interventions

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The physical health of people with schizophrenia can be compromised due to a dynamic interplay between numerous additive risk factors, which result in considerable morbidity and mortality. Importantly, many of these risks are readily modifiable in a general practice setting through the provision of patient health education, thorough and regular screening, early intervention and directed treatment.

Schizophrenia can be a complex condition to manage in general practice. A practitioner could be forgiven for assuming this complexity results specifically from the psychiatric symptomology of the illness: paranoia, delusional misinterpretation or hallucinations as drivers of unpredictability or hostility. However, in actuality, the complexity is often derived from less visible factors: the physical rather than the mental health concerns. It also finds seat in numerous system factors with which both the patient and practitioner must contend. This article outlines the common physical health issues that a person with schizophrenia might face, and provides an up-to-date synopsis of current approaches to the care of the physical health of people with schizophrenia.

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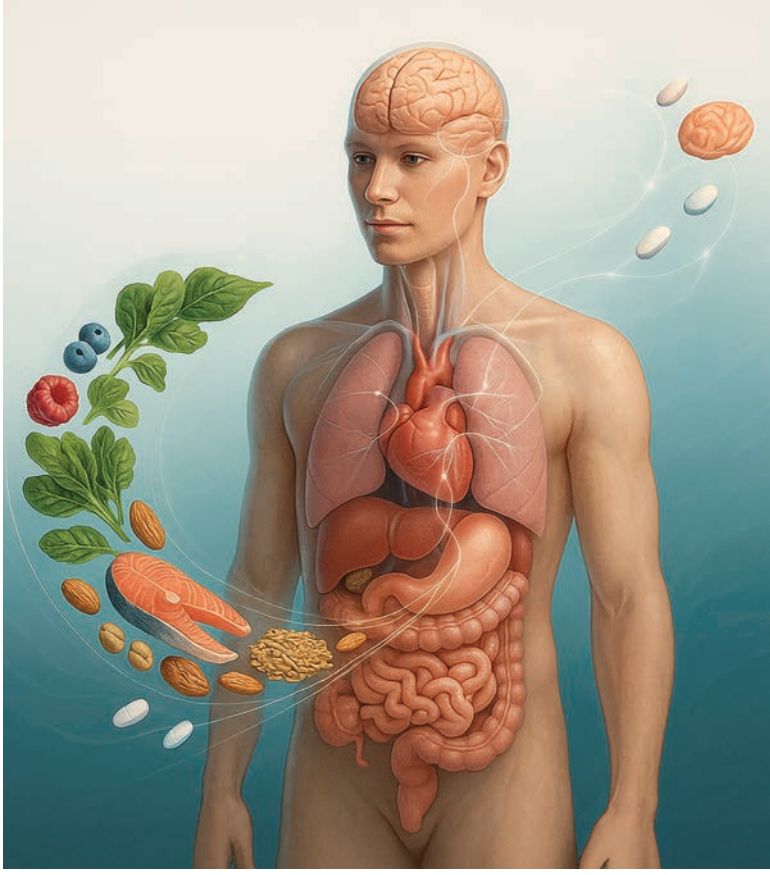

KEY POINTS

- Schizophrenia significantly increases the risk of comorbid physical health conditions, particularly cardiovascular disease and diabetes, leading to significantly elevated risks of morbidity and early mortality.
- Iatrogenic factors, such as the metabolic side effects of antipsychotic medications, further complicate the physical health of individuals with schizophrenia, increasing the risk of metabolic syndrome and related diseases.
- GPs play an important role in the assessment and management of both the mental and physical health of people with schizophrenia through early intervention, patient education and appropriate on-referral.
- Barriers to physical health care for people with schizophrenia, including social isolation, stigma and difficulty accessing health care, contribute to delayed diagnoses and care disruption.
- Collaboration between GPs, psychiatrists and other healthcare providers, along with the use of shared care models, can improve the overall health and quality of life for people with schizophrenia.

Up to 90% of people with schizophrenia have a comorbid chronic physical illness.[1] Life expectancy is reduced, on average, by 18.7 years in men and 16.3 years in women.[2] Although the risk of death by suicide, accident and misadventure is elevated in this group, the majority of the disparity in longevity is accounted for by physical health conditions, in particular cardiovascular and oncological diseases.[3]

The dynamics that drive compromised physical health and mortality in people with schizophrenia are outlined in Figure 1.[4] Factors associated with the core symptoms of the disorder result

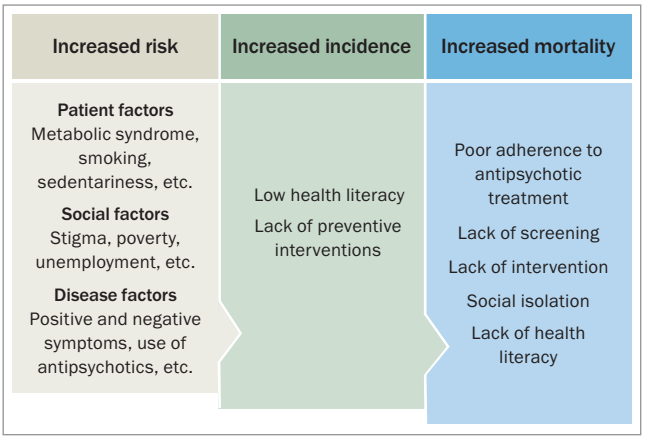

Figure 1. Drivers of mortality in patients with schizophrenia.[4]

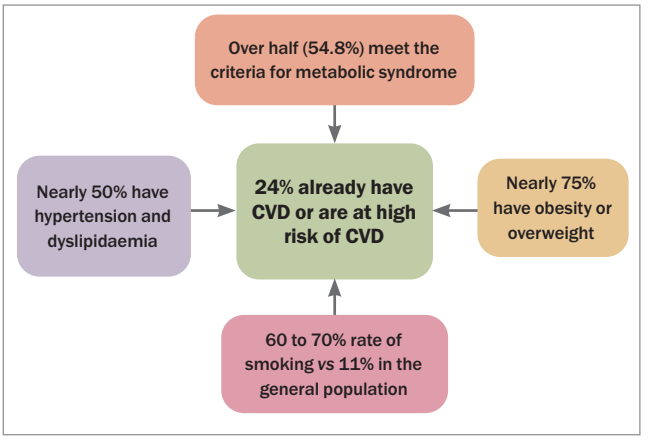

Figure 2. Health statistics of people with schizophrenia.[9]
Abbreviation: CVD = cardiovascular disease.

directly and indirectly in numerous additive risk factors including reduced activity, addiction, dietary imbalances and social isolation. They are also further compounded by a reduced propensity to seek care, difficulty communicating concerns, decreased ability to follow instructions and breakdown of natural supports.

Alone, these risk factors represent adequate cause for concern and increased vigilance. However, aetiological models of schizophrenia reveal that there is substantial overlap with physical health issues, including abnormal fatty acid metabolism, generalised inflammation and mitochondrial dysfunction, and genetic predispositions to diabetes.[5] Indeed, high insulin concentrations and low leptin concentrations are often present in the early stages of psychosis, even before antipsychotic treatment has started.[6] As such, people with schizophrenia are two to five times more likely to develop type 2 diabetes.[7] This being said, numerous modifiable risk factors represent useful targets for intervention, as outlined in Figure 2.[8,9]

It is also important to recognise iatrogenic drivers. Antipsychotics, mood stabilisers and some antidepressant medications can have metabolic implications. Second-generation antipsychotics (particularly olanzapine, clozapine and quetiapine) predispose an individual to metabolic syndrome, potentially linked to insulin resistance and dysregulated glucose metabolism.[10] Sedating medications and substances of abuse further elevate the underlying risk of obstructive sleep apnoea.[11]

Concerningly, the overall cancer mortality rates are 40% higher in men and 20% higher in women with a mental illness, with the highest rates being for lung cancer in men and breast cancer in women.[12,13] The causes for this are complex, but can largely be explained by the higher prevalence of smoking, substance abuse and chronic hepatitis B or C infections.[14,15] In schizophrenia, this is likely exacerbated by low rates of help-seeking and personal advocacy, and by clinicians being more focused on mental state than physical health. Barriers to accessing health care (including discrimination, lack of integration of mental health and oncological services) and patient factors (including positive and negative symptomatology) can result in care disruption and, ultimately, delayed diagnosis and treatment.[4] Further potential physical health concerns are outlined in Box 1.[16-21]

The impact of medications

Beyond the metabolic side effects outlined above, medications used to treat schizophrenia impart other adverse effects that affect quality of life and health.

Hyperprolactinaemia

Hyperprolactinaemia occurs secondary to dopaminergic blockade in the posterior pituitary, and its most significant elevations are seen with risperidone, paliperidone and amisulpride. Up to 70% of individuals on antipsychotic treatment have elevated prolactin concentrations, depending on the agent, with females more adversely affected than males.[22] This has implications for sexual function and can result in gynaecomastia and galactorrhoea, as well as impacting bone health adversely.

Cardiac health

Myocarditis and cardiomyopathy have been shown to be associated with some antipsychotic medications, most commonly with clozapine.[23,24] QTc prolongation is not usually a major concern with antipsychotics, apart from if high doses are used or if the patient has a baseline long QTc. Ziprasidone and amisulpride are the agents most strongly associated with QT prolongation, with a three- to sixfold increased odds ratio.[25] Torsade de pointes can eventuate, and baseline and follow-up ECGs should be performed for any high-risk individuals, and especially for those in whom high doses of typical antipsychotics, ziprasidone or amisulpride are prescribed. A summary of other medication-specific issues are summarised in Table 1.[26-28]

1. OTHER PHYSICAL HEALTH CONCERNS IN PATIENTS WITH SCHIZOPHRENIA[16-21]

- Epilepsy
- Irritable bowel syndrome
- Sexual health
- Dental health
  - conditions include halitosis; ulcerations; bleeding or inflamed mucous membranes, lips or gums; decayed or fractured teeth; calculus on the teeth; and an absence of saliva
  - primarily driven by poor dental hygiene, smoking and dietary factors
  - some antipsychotic medications can cause dry mouth
- Respiratory disease
  - higher incidence of tuberculosis, chronic obstructive pulmonary disease and pneumonia
- Bloodborne viruses
  - prevalence rates of HIV infection, hepatitis B and C viral infections are higher among people with a psychiatric disorder compared with the general population
  - drug-taking behaviours and multiple sexual partners represent the most common risk factors
  - there may also be lower rates of immunisation among people with schizophrenia

TABLE 1. COMMON SIDE EFFECTS AND SEDATION SCORES OF ANTIPSYCHOTIC DRUGS[26-28]

Antipsychotic drug	Side effects	Sedation score*
Amisulpride	Movement disorder, hyperprolactinaemia, QTc prolongation	4
Aripiprazole	Akathisia	1
Asenapine	Unpleasant taste, perioral paraesthesia, weight gain	6
Brexpiprazole	Akathisia	2
Cariprazine	Akathisia	2
Chlorpromazine	Extrapyramidal side effects (particularly acute dystonia, parkinsonism), anticholinergic side effects, QTc prolongation	5
Clozapine	Weight gain, constipation, hypersalivation, hyponatremia, myocarditis, postural hypotension, tachycardia, seizures	10
Haloperidol	Extrapyramidal side effects (particularly acute dystonia, parkinsonism), anticholinergic side effects, QTc prolongation	3
Olanzapine	Weight gain	10
Paliperidone	Hyperprolactinaemia, stuffy nose, mild weight gain	3
Quetiapine	Weight gain, postural hypotension, anticholinergic side effects	8
Risperidone	Hyperprolactinaemia, stuffy nose, mild weight gain	3
Ziprasidone	Movement disorder, QTc prolongation	2
Zuclopenthixol	Extrapyramidal side effects (particularly acute dystonia, parkinsonism), anticholinergic side effects, QTc prolongation	7

* Sedation score is an approximate relative scale from the least sedating (1) to the most sedating (10) of the antipsychotics commonly prescribed in Australia. The degree of sedation can vary greatly between patients.

The role of the GP

Assessment

Despite many barriers to care, roughly 80% of people in Australia with a psychotic disorder visit their GP in any 12-month period.[29] General practice thus represents a vital setting for the provision of physical health care to individuals with schizophrenia. Given the short appointment times and limited availability, practitioners may, understandably, prioritise more apparent psychiatric issues over underlying physical sequelae. Assessment of an individual with schizophrenia should not differ fundamentally from the assessment of any other person. Although it is important to review current psychiatric treatments, medications and relevant side effects, the focus should remain on considering a person's overall health.

Despite an evident need, people with schizophrenia experience lower rates of screening for risk factors of physical health problems, compared with the general population. This includes screening for tobacco use, despite its particularly high prevalence among people with serious mental illness.[30] Further, compared with the general population, there is a 0.37-fold decrease in antihypertensive use and a 0.47-fold decrease in lipid-lowering drug use among people with schizophrenia.[31]

Examination and monitoring

History-taking should include a detailed account of substance use and sexual health, as well as any past history of hepatitis B and C immunisation and treatment. Often-forgotten elements include a detailed account of oral health, sleep hygiene and bowel habits, particularly in the context of long-term antipsychotic prescribing. A family and social history are also of particular importance, and involving next-of-kin in consultations can provide additional benefit.

Physical examination, including cardiovascular and respiratory assessments, is always relevant, particularly for people taking clozapine and other agents with a metabolic risk profile. Targeted neurological examination for those prescribed antipsychotics, particularly first-generation agents, can help identify extrapyramidal side effects that the patient may not be aware of or may not report. Regular observations of blood pressure, pulse and body weight are mandatory. ECGs should be considered for any individual on antipsychotics, particularly those that might prolong the QTc.

Investigations beyond routine metabolic screening should include liver function testing, both to monitor for fatty liver disease and any medication side effects. Nutritional status is also relevant, including vitamin B12 and D, as well as folate and iron studies. Targeted cancer screening should be considered based on

TABLE 2. RECOMMENDED MONITORING SCHEDULE FOR PATIENTS WITH SCHIZOPHRENIA[34]

Assessment	Frequency	Reasons
History		
Smoking status	Every visit	• Changes in smoking can alter serum antipsychotic concentrations • Part of motivational interviewing
Contraception and sexual history	Annually	• Pregnancy counselling • Bloodborne virus screening
Examinations		
Neurological examination	Annually, or when indicated	• Extrapyramidal side effects • Falls risk
Eye examination	Biannually	• Cataracts, particularly if taking quetiapine or chlorpromazine
Observations		
Weight, BMI, waist circumference	Every three months for the first year, then six-monthly	• To guide intervention
Blood pressure	Every three months for the first year, then six-monthly	• To guide intervention
ECG	Annually, or when indicated	• QTc prolongation
Investigations		
Fasting glucose level measurement	Every three months for the first year, then six-monthly	• To guide intervention
Fasting lipid studies	Every three months for the first year, then six-monthly	• To guide intervention
Prolactin level measurement	Annually	• Osteoporosis risk or breast cancer risk, particularly for those taking amisulpride and risperidone
Liver function testing	Annually	• Antipsychotic-induced transaminitis or fatty liver disease

history and examination findings; lung, prostate and bowel cancer screening should be prioritised, including the consideration of faecal occult blood testing. Breast cancer screening should be targeted particularly to those with elevated levels of prolactin, given the associated risk.[32]

An appropriate schedule for monitoring physical health issues relevant to people with schizophrenia is outlined in Table 2.[33] Where possible, this schedule should be adhered to in its entirety but may need to be targeted or modified based on the patient's tolerance and frequency of engagement. For further detail, the reader is referred to the Royal Australian and New Zealand College of Psychiatrists expert consensus statement.[34]

Monitoring of tobacco smoking and nicotine intake, particularly sudden cessation, is important, as these can affect the serum concentration of various psychotropic agents, notably clozapine and olanzapine.[35] Monitoring of drug levels is appropriate in this context.

Intervention

Nonpharmacological interventions

For metabolic health, the most effective interventions are consistently shown to be individual lifestyle counselling, exercise and dietary interventions, along with psychoeducation.[36] These are all interventions that can be delivered effectively in the general practice setting. Aspects such as motivational interviewing and cognitive behavioural therapy techniques have also been shown to enhance the effectiveness of these general strategies.[37] This is particularly pertinent, as general public health campaigns seem less effective in influencing the lifestyle choices of people living with a psychotic disorder.[38]

Focused education is of particular importance in the management of diabetes, particularly insulin-dependent disease. It has been shown that people with schizophrenia are more commonly unaware of their diabetes diagnosis, and some lack the skills and understanding to manage their blood glucose levels effectively.[39]

Opportunistic and regular exploration and education within GP consultations can be useful for a variety of other potential health issues. Managing cancer risk may be as simple as a brief exploration of sexual safety, sun safety, immunisation status and contraceptive usage. Recommending and providing immunisations, in particular for bloodborne viruses, and other preventive interventions can provide great benefit in this population. Discussing contraception with women of childbearing age is especially relevant for those on medications with known teratogenicity, such as lithium and sodium valproate. It may be relevant to explore the role of the combined oral contraceptive for some individuals, as exogenous oestrogen can enhance the mental health of some women with schizophrenia, albeit any such intervention requires a full risk–benefit analysis.[40] If oestrogens are contraindicated, progesterone intrauterine devices or progesterone implants may be preferred.

Oral health is often compromised in people with schizophrenia. General advice includes regular brushing, using dental floss and using gum or alcohol-free mouthwash to reduce dry mouth.[26]

Pharmacological interventions

The use of pharmacological interventions for the treatment of physical illness in people with schizophrenia is not significantly different to those that pertain to the general population. However, certain patient factors, such as memory, thought and behavioural disorganisation, and alternative illness explanations, appear to affect patient adherence to treatment. Generally speaking, cut-offs for intervention for metabolic illnesses and risk factors are no different to those in the general population. These are summarised in Figure 3.[41] Treatment also does not differ significantly and should be provided according to current guidelines for the general population.

That being said, more assertive intervention might be indicated in some cases, particularly if the metabolic impact of psychotropic medications is seen to be rapid. If reductions or alterations to treatment regimens are impossible or ineffective, the addition of topiramate or aripiprazole as a means to counteract these effects has good evidence of efficacy.[36] Such additions should be made only with the input of the treating psychiatrist. There is an increasing movement towards the addition of antidiabetic medications as a first-line option in these cases. Although these are used off-label for this purpose, metformin has proven efficacy for modest weight loss and reducing insulin sensitivity, and the glucagon-like peptide-1 receptor agonists have been shown to be effective in people with schizophrenia.[42] Polypharmacy can be an issue for people with schizophrenia, and involving the psychiatrist and pharmacist in rationalising these to limit drug interactions and reduce metabolic burden can be a useful intervention.

For smoking cessation, nicotine replacement aids must be provided appropriately and at adequate doses, as smokers with schizophrenia are likely to be heavier smokers. Combining these aids with varenicline has a larger effect size for smoking cessation and has been shown to be effective and safe in people with schizophrenia. A small increased risk of potential adverse mental health impacts necessitates due caution and patient education, particularly regarding side effects such as sleep disturbance and mood change.[43]

Models of care delivery

Primary care remains the most appropriate setting in which interventions for physical health care should be delivered. Psychiatrists, alongside GPs, can work to reduce the marked discrepancy in health outcomes between this patient group and the general population, but their efforts can be hampered by the restriction of the current models of care. Short consultation times within general practice and psychiatry services often impede the effective care of individuals with complex problems.[44] Longer

Figure 3. Positive cardiometabolic health resource, an early intervention framework for people on psychotropic medication.[41]

Reproduced with permission from the Mind(gardens) Neuroscience Network. Available online at: https://www.mindgardens.org.au/KBIMResources/ (accessed August 2025).[41]

2. TIPS TO IMPROVE THE EFFICACY OF NONPHARMACOLOGICAL INTERVENTIONS FOR PEOPLE WITH MENTAL ILLNESS

Practice-wide changes

- Consider the timing of appointments to avoid long wait times or busy waiting rooms
- Consider different modalities where appropriate (face-to-face *vs* telephone or virtual *vs* home visitation)
- Design systems for reminders and bookings, and consider the content of these invitations
- Aim to provide continuity of care, including consistency of clinician and location, and ensure thorough handovers
- Provide longer appointments
- Actively advocate for and support co-designed, co-produced and co-led health-promoting education and services

Clinician technique changes

- Involve support workers or family members in the consultation where appropriate
- Encourage shared decision-making and goal-setting
- Write down information or instructions
- Remain informed about trauma
- Implement a strengths-based focus (including physical, cognitive, social and psychological)
- Ensure resources and educational materials are available
- Utilise open questions
- Consider wider social and economic factors
- Provide culturally specific care and information where possible

consultation times, adjunct nurse-led appointments and shared clinics with mental health workers are important considerations in providing care for this population group. Furthermore, smartphone applications, activity monitoring devices and online programmes may be useful and might be integrated into care delivery models.[45]

Collaborative care is a paradigm to which primary care should aspire, particularly in the case of those with complex mental illnesses. Providing or engaging with a care co-ordinator or case manager is important, a role that may be held by a practice nurse. A shared care model that integrates case managers, pharmacists, psychiatrists and GPs to provide care promotes autonomy, convenience and care outside of the stigma of a mental health-specific service.[46] Currently, this approach is most often used for patients on clozapine, but a similar model might be utilised for the care of other patient groups.

To improve co-operation between primary and tertiary services, service planners should consider investment in technologies, such as shared information platforms, to facilitate continuity. Currently, this might be achieved through use of My Health Record (https://www.digitalhealth.gov.au/initiatives-and-programs/my-health-record), particularly for prescribing and vaccinations. In some cases, case conferencing or joint consultations with the patient may be useful, and GPs should consider being involved in multidisciplinary meetings where possible. Other techniques to engage better with people with schizophrenia are summarised in Box 2.

Referrals

GPs, although well placed to co-ordinate care, should be adequately integrated into local therapeutic services and practices more widely. This integration provides for more expert and appropriate care of individuals and reduces the burden on GPs. Opportunities for collaboration and communication should be maximised, and being aware of local referral pathways and services is crucial. Relevant services and examples are listed in Table 3, although local resources may differ in availability depending on geographical and socioeconomic factors.

Conclusion

Although evidently complex, improving the physical health of people with schizophrenia can be a rewarding undertaking. Stigma, barriers to access and affordability combine with patient mental health factors to block people living with schizophrenia from achieving a quality and length of life that should be available to them. As GPs, there is

TABLE 3. REFERRAL PATHWAYS FOR PATIENTS WITH SCHIZOPHRENIA

Referral	Reasons	Examples
Specialists		
Psychiatrist	• Oversight of psychotropic prescribing	Local public services, private hospitals or clinics
Cardiologist	• QTc abnormality • Clozapine-associated cardiomyopathy • Cardiovascular disease	
Allied health professionals		
Diabetes educator	• Diabetes (particularly with insulin dependence)	Local public and private providers (consider availability within MHCP)
Pharmacist	• Medication history and review	
Dietitian	• Elevated metabolic risk • Weight gain	
Dentist	• Dental hygiene issues	
Exercise physiologist or physiotherapist	• Decreased exercise tolerance • Weight gain	
Drug and alcohol services		
Drug- and alcohol-specific services	• Comorbid alcohol or illicit substance use	Salvation Army, Alcohol and Drug Foundation, Local Alcohol and Drug specific services
Smoking-specific services	• Nicotine dependence	Tobacco cessation specialist, Quitline (MH specific)
Physical health programs		
National cancer screening programs	• Melanoma or cervical, bowel, breast or prostate cancer risk	National Bowel Cancer Screening Program, etc.
Immunisation programs	• Influenza, cervical cancer and hepatitis risk	National Immunisation Program, Public Liver Clinic
Exercise programs	• Weight loss • Improving exercise tolerance	Walking programs, gyms, sport and recreation facilities and groups
Mental health and wellbeing services		
Culturally specific and translator services	• For Aboriginal and Torres Strait Islander patients • For culturally and linguistically diverse patients	Aboriginal Community Controlled Health Services
Nongovernment organisations		Get Healthy NSW
Psychology services	• Cognitive behavioural therapy for hallucinations	Better Access initiative, Hearing Voices Movement, Centre for Clinical Interventions (Online)
Family and carer support	• Psychoeducation and support	SANE, Mental Illness Fellowship and the Centre for Clinical Intervention
Social and vocational support services	• Social and occupational rehabilitation	Mental Illness Fellowship, NDIS support services, Compeer Program
Financial and vocational support services	• Access to financial opportunities	Welfare Benefits Advice and Individual Placement and Support (IPS)

a definite opportunity – through education, attention and proactive intervention – to improve the outcomes for this patient group greatly. With an approach tailored to the individual's capacity and care needs, and with an integrated and evidence-based model of care, it is possible to limit the unfortunately common sequelae of the illness as a whole. This can have a wide-reaching positive impact on the individual's mental, physical and emotional wellbeing, and further-reaching benefits to their families and the community at large. MT

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A list of references is included in the online version of this article (www.medicinetoday.com.au).

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