

**TIME TO
COMMIT TO
POLICY
CHANGE**

Schizophrenia

Wolfgang Fleischhacker
Celso Arango
Paul Arteel
Thomas R E Barnes
William Carpenter
Ken Duckworth
Silvana Galderisi
Martin Knapp
Stephen R Marder
Norman Sartorius

Publication of these recommendations has been funded by an educational grant from F. Hoffmann-La Roche, who had no editorial influence on the content

TIME TO
COMMIT TO
POLICY
CHANGE

Schizophrenia



ISBN 978-1-903539-11-8

© Oxford PharmaGenesis™ Ltd 2014

Revised edition: first published 2013

The views expressed in this publication are not necessarily those of the sponsor or publisher.

All rights reserved. Save where permitted under applicable copyright laws, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electrical, mechanical, photocopying, recording or otherwise, without prior written permission from the copyright owner. The commission of any unauthorized act in relation to this publication may lead to civil or criminal actions.

Authors

Writing group

Professor Wolfgang Fleischhacker (Chair)

Medical University Innsbruck, Innsbruck, Austria

Professor Celso Arango

Hospital General Universitario Gregorio Marañón, CIBERSAM, Madrid, Spain

Mr Paul Arteel

GAMIAN-Europe, Brussels, Belgium

Professor Thomas R E Barnes

Imperial College London and West London Mental Health NHS Trust, London, UK

Professor William Carpenter

Maryland Psychiatric Research Center, University of Maryland School of Medicine, Baltimore, MD, US

Dr Ken Duckworth

National Alliance on Mental Illness, Arlington, VA, US

Professor Silvana Galderisi

Second University of Naples, Naples, Italy

Professor Martin Knapp

London School of Economics and the Institute of Psychiatry, King's College London, London, UK

Professor Stephen R Marder

Semel Institute, UCLA, and the VA Desert Pacific Mental Illness Research Education and Clinical Center, Los Angeles, CA, US

Professor Norman Sartorius

Association for the Improvement of Mental Health Programmes, Geneva, Switzerland

Working group

Professor Wolfgang Gaebel

LVR-Klinikum Düsseldorf, Heinrich Heine University, Düsseldorf, Germany

Professor Howard H Goldman

University of Maryland School of Medicine, Baltimore, MD, USA

Ms Lisa Halpern

Vincent, Cambridge, MA, USA

Professor Josep Maria Haro

Parc Sanitari Sant Joan de Deú, ROAMER project, CIBERSAM, Barcelona, Spain

Dr Mary Moller

Past President, American Psychiatric Nurses Association, Yale School of Nursing, New Haven, CT, USA

Ms Betsy Schwartz

National Council for Behavioral Health, Washington, DC, USA

Ms Sigrid Steffen

European Federation of Associations of Families of People with Mental Illness, Salzburg, Austria

Ms Deborah Wan

World Federation for Mental Health, Hong Kong

Professor Peter Woodruff

Academic Faculty, Royal College of Psychiatrists, London, UK

Acknowledgements

Support for the writing and editing of this report was provided by Oxford PharmaGenesis™ Ltd, UK, and Oxford PharmaGenesis™ Inc., US.

Preparation and publication of these recommendations has been funded by an educational grant from F. Hoffmann-La Roche, who had no editorial influence on the content.

Contents

Endorsements	6
Preface	7
Executive summary	9
Recommendations for policy change	11
Protection and treatment: delivering our fundamental human right	12
Expanding the focus on recovery	17
Integrating current approaches to schizophrenia treatment	19
Creating a supportive environment that promotes recovery	35
Conclusions	41
References	42
Glossary	47
Abbreviations	49
Declarations of interest	51

Endorsements

The organizations listed below endorse the recommendations contained in this report.

- American College of Neuropsychopharmacology
- American Psychiatric Nurses Association
- Brain & Behavior Research Foundation
- European Brain Council
- European College of Neuropsychopharmacology
- European Federation of Associations of Families of People with Mental Illness
- European Federation of Psychiatric Trainees
- Global Alliance of Mental Illness Advocacy Networks-Europe
- National Alliance on Mental Illness
- National Council for Behavioral Health
- Royal College of Psychiatrists
- Schizophrenia International Research Society
- Vinfen
- World Federation for Mental Health

This publication is available to view and download online at the Oxford Health Policy Forum:

<http://www.oxfordhealthpolicyforum.org/schizophrenia-time-to-commit-to-policy-change>

Shortened versions have been developed specifically for policy makers, advocacy groups and healthcare professionals. These are available in English, French, German, Italian and Spanish, and can also be downloaded from the website above.

Preface

Care and outcomes for people with schizophrenia have improved in recent years, but further progress is needed to help more individuals achieve an independent and fulfilled life. Despite the recent improvements, many people with schizophrenia still run the risk of:

- social isolation
- unemployment
- homelessness or imprisonment
- poor quality of life
- premature death and suicide
- prejudice and discrimination in all walks of life.

These are issues for society as a whole, not just for people with schizophrenia and those who care for them. Schizophrenia can impose a heavy burden on family, friends and society, as well as substantial economic losses due to treatment costs and diminished working capacity among patients and carers.

We can already do much to improve the wellbeing of people with schizophrenia; however, we still need better treatments, particularly to address both the negative and positive symptoms of the disorder and the cognitive impairment that is seen in many patients. We also need better delivery of – and better access to – high-quality evidence-based care. Additionally, particular care should be taken when schizophrenia is diagnosed, to ensure that the diagnosis is accurate and appropriate.

This report sets out the current need, informs policy makers and all relevant stakeholders who influence care quality, and supports their commitment to creating a better future – not only for those with schizophrenia, but also for relatives and friends who currently carry the major responsibilities of caring for them.

A word on language

How best to refer to people with schizophrenia is an emotive, and sometimes controversial, question. The word ‘patient’ is appropriate in a medical context, but may be too clinical for a person living in the community. Terms such as ‘service user’, ‘client’ and ‘consumer’ are used in some countries and settings, but they often do not translate well elsewhere. In this report, the authors have chosen to use the word ‘patient’ when the setting is strictly clinical, but ‘person with schizophrenia’ (or similar) is used in other contexts.

A glossary at the back of the document provides definitions of unfamiliar terms.

Executive summary

Key points

This report summarizes the evidence and consensus findings emerging from discussions among a group of international psychiatrists, researchers, advanced practice nurses, patients and carers with expertise and experience in the field of schizophrenia. The group met several times and brought together world-leading insight into the clinical and scientific evidence base for schizophrenia, combined with first-hand insight into the practical reality of living daily with the condition.

Excitingly, this diverse group was united in reaching three clear, evidence-based conclusions.

- The likelihood of a good outcome for people with schizophrenia has improved in recent decades; with appropriate management, many people affected by the condition can now achieve an acceptable quality of life.
- A modern approach to schizophrenia management should aim to move patients along a pathway towards recovery of normal function, as well as to alleviate distressing symptoms.
- Driving further change towards a more positive outlook for schizophrenia requires fundamental policy change.

At least 26 million people are living with schizophrenia worldwide,¹ and twice as many are indirectly affected by it. Owing to the chronic nature of the condition, it affects a person's wellbeing,² shortens life and is among the top 10 causes of disability globally.³

Unusually, the protection and treatment of people with mental disorders is recognized by the United Nations as a fundamental human right.⁴ We have come a long way towards achieving this in recent years, but more can still be done. In particular, achieving some degree of recovery should be the goal of treatment from the onset of the disorder. With appropriate care and support, people can recover and live fulfilled lives in the community, with up to 50% of individuals potentially having a good outcome.^{5,6}

Antipsychotic medication is effective in treating acute psychotic episodes and improves symptoms of early schizophrenia in 85% of patients;⁷ long-term therapy can reduce the risk of psychotic relapses by 60%,⁸ and it has also been shown to reduce suicidal behaviour.⁹ Currently available drugs, however, have limited effects on the most disabling 'negative' symptoms and on cognitive impairment, which are associated with decreased social function.¹⁰ The authors strongly support the rationale for research and development of new treatments to address this unmet need.

Psychosocial interventions also promote recovery and are cost-effective;¹¹ relapses and hospitalizations can be reduced by 20% when families are included in the treatment.¹² Furthermore, the support and education provided by peer-led groups and advocacy groups substantially improve quality of life: 48% of people with schizophrenia identify self-management strategies as an important factor in their recovery.¹³ The extent to which psychosocial therapies are funded by public healthcare systems varies across countries and, as a result, many patients are denied or are unable to access such treatment. These interventions should be made available to everybody in need.

In addition to the routine activities of health services, psychoeducation aimed at the general public can be effective in increasing awareness, changing negative perceptions of mental illness and addressing prejudice and discrimination towards schizophrenia.¹⁴ Therefore, educational and multimedia campaigns, including social marketing approaches, should be developed and sustained.

One of the most fundamental issues is that people with schizophrenia die 15–20 years earlier than the general population.^{15–17} It is thus important not only to manage the symptoms of schizophrenia but also to treat coexisting physical illnesses. Under-diagnosis and under-treatment

contribute to this high death rate. It should be a priority to develop and implement an evidence-based, integrated care package that addresses patients' mental and physical health needs. This should be underpinned with an integrated approach by healthcare professionals and supported by the healthcare system.

Without an environment that supports recovery, treatment may not be effective. In today's society it is unacceptable that patients with schizophrenia are 6–7 times more likely to be unemployed than the general population, and only 10–20% are in competitive employment.^{18,19} Supported employment approaches are effective and should be encouraged, and better mechanisms are needed to guide people through the benefit and employment system. Furthermore, up to one-third of homeless people in the US have schizophrenia and 15% of people with schizophrenia

in Europe have experienced homelessness,²⁰ which is a major barrier to recovery. Contact with the criminal justice system is also common,²¹ but can be prevented by high-quality, early intervention services, which also reduce hospitalizations and increase employment rates, producing significant savings in healthcare and societal costs.²¹ More therefore needs to be done to identify schizophrenia earlier and to initiate appropriate treatment as soon as possible.

In conclusion, the care of people with schizophrenia can be vastly improved through political action, changes in health service organization and better use of integrated psychological, medical and social interventions. This approach, combined with active engagement on the part of people with schizophrenia, their families and their communities, could lead to better lives for all those affected.

Recommendations for policy change

Schizophrenia has a profound personal, social and economic impact. Furthermore, public attitudes towards schizophrenia lead to prejudice and discrimination.

We therefore recommend the following policy actions to local, national and regional policy makers.

1. Provide an evidence-based, integrated care package for people with schizophrenia that addresses their mental and physical health needs. This should be underpinned with an integrated approach by their healthcare professionals and supported by the national healthcare system and by educational and research facilities.
2. Provide support for people with schizophrenia to enter and to remain in their community, and develop mechanisms to help guide them through the often complex benefit and employment systems to enhance recovery. Guidelines and educational programmes should be developed and implemented to support the inclusion of people with schizophrenia in their community, workplace or school.
3. Provide concrete support, information and educational programmes to families and carers on how to enhance care for an individual living with schizophrenia in a manner that entails minimal disruption to their own personal lives.
4. Consult with healthcare professionals and other stakeholders directly involved in the management of schizophrenia, including organizations that support people living with schizophrenia, their families and their carers, in order to regularly revise, update and improve policy on the management of schizophrenia.
5. Provide support, which is proportionate to the impact of the disease, for research and development of new treatments that improve the overall outlook for people with schizophrenia, including those that target negative symptoms and cognitive impairment.
6. Establish adequately funded, ongoing and regular awareness-raising campaigns to: increase the understanding of schizophrenia among the general public; emphasize the importance of positive societal attitudes towards mental illnesses; highlight available support for the management of schizophrenia; and deter discriminatory attitudes and actions. Such campaigns should form an integral part of routine plans of action.

Our recommendations are based on research evidence, stakeholder consultation and examples of best practice, worldwide.

Protection and treatment: delivering our fundamental human right

Key points

- Schizophrenia is a mental disorder characterized by abnormal thinking, perceptual disturbances and diminished or exaggerated emotional expression.
- The protection and treatment of people with mental disorders such as schizophrenia is recognized by the United Nations as a fundamental human right.
- Recent advances mean that people with schizophrenia can live productive and satisfying lives, but many still face discrimination, making it difficult for them to integrate into society.
- As well as the potential human cost, schizophrenia places substantial demands on healthcare resources and on society.
- Improving care for people with schizophrenia, their carers and their families should be an urgent healthcare priority.

Living with schizophrenia: what does it mean?

The term schizophrenia describes a mental disorder characterized by abnormal thinking, perceptual disturbances and diminished or exaggerated emotional expression (see box: 'What is schizophrenia?'). It is estimated that schizophrenia directly affects at least 26 million people worldwide, and twice as many are indirectly affected by it (e.g. as carers).¹ In the EU, psychotic illnesses such as schizophrenia affect about 5 million people,²² while data from the US indicate that approximately 2.4 million people have schizophrenia (about 1.1% of the US adult population).²³ Moreover, each year, about one person in 4000 – around 1.5 million people worldwide – is diagnosed with schizophrenia.²⁴

Schizophrenia is typically diagnosed in adolescence or early adulthood, and may affect a person's wellbeing throughout life;² indeed, the World Health Organization (WHO) has identified schizophrenia as one of the 10 leading global causes of disability.³

The protection and treatment of people with mental disorders such as schizophrenia is now recognized by the United Nations (UN) as a fundamental human right.⁴ This means that all affected individuals should be helped to live a life free from prejudice, discrimination and hostility. They should be protected from abuse and from behaviour, attitudes and assumptions that lead to social exclusion; they also have a right to the best available treatments. These rights are enshrined in the

WHO Global Mental Health Action Plan,²⁵ which emphasizes the use of evidence-based therapies and the empowerment of people with mental disorders. Mirroring these WHO aspirations, during the last two decades the care of people with schizophrenia has seen positive advances in many countries, with improvements in medications and psychosocial therapies, and in societal attitudes towards those affected; mental health has well and truly arrived on the global health agenda.²⁶

Views about the outcome of schizophrenia have also been evolving, and a growing movement now emphasizes a vision of recovery, with a shared hope and expectation of living a productive and satisfying life with mental illness.⁶ Although schizophrenia is undeniably a potentially disabling and severe mental disorder, people with the illness can – with appropriate clinical assessment, support and recognition of their needs – make remarkable progress.⁵ Even with the tools available today, a significant proportion recover fully. Many more can achieve at least some degree of recovery, with an improvement in their symptoms and a reduction in the impact of schizophrenia on everyday life.^{6,27}

Social consequences for people living with schizophrenia

Despite the improvements in societal attitudes, many people with schizophrenia still face social isolation,

What is schizophrenia?

- The term schizophrenia describes a mental disorder characterized by disorganized thought processes, disrupted perceptions and diminished or exaggerated emotional responses. Schizophrenia can affect an individual's thoughts, emotions, mood and behaviour; disturbances in mood are referred to as affective symptoms.
- The range and course of symptoms experienced vary greatly among individuals, personal circumstances and cultural settings.
- Symptoms that reflect abnormal psychological phenomena are often referred to as 'positive'.
- Symptoms that describe loss of emotional expression or motivation are termed 'negative'.
- Cognitive functions, such as concentration, memory and planning, are almost always impaired in people with schizophrenia, and this can reduce insight into their condition.

Positive 'psychotic' symptoms

Delusions: strongly held unfounded beliefs, often persecutory and/or bizarre

Hallucinations: most commonly auditory (hearing voices), but can also include tastes and smells, as well as visual and tactile hallucinations

Disorganized speech: rambling and incoherent speech with illogical reasoning, which is difficult to follow

Grossly disorganized or catatonic behaviour: purposeless behaviour and odd dress or poor hygiene

Negative symptoms

Expressive deficits: including lack of emotional expression (affective flattening)

Alogia: reduced amount and content of speech. Short, incomplete answers to questions

Avolition: lack of drive and interest in everyday activities. This includes poor self-care, reduced enthusiasm and motivation, loss of interest/lack of enjoyment in pleasurable activities, and reduced social functioning (e.g. not going out to see friends or to work)

Cognitive impairment

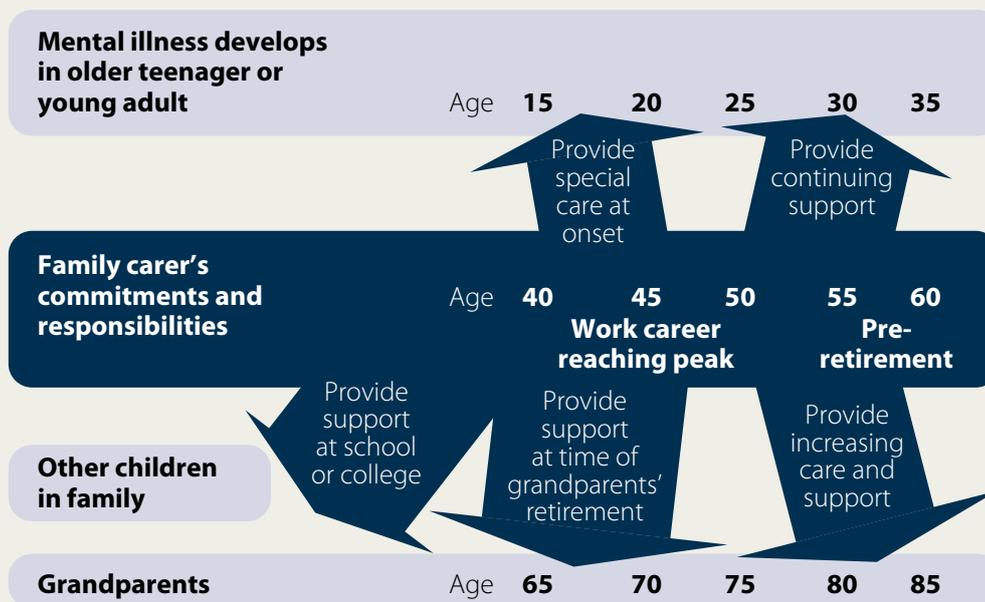
- Poor concentration and memory
- Impaired ability to plan and execute activities

prejudice and discrimination, making it difficult for them to live a productive life in society. This discrimination can prevent them from seeking help for their condition and can also disrupt their personal relationships and employment: people with schizophrenia are more likely to be unemployed than those without the condition,

and they are also particularly likely to come into contact with the criminal justice system, either as perpetrators or more likely as victims.¹³ A recent national study in Sweden found that people with schizophrenia are 1.8 times more likely to be victims of homicidal death than those without mental illness.²⁸

Burden on family carers: what is the bigger picture?

- At the age of onset of a child's mental illness, the age of family carers (40–60 years) and the possibility of separation or divorce mean that they are at a time of great family stress and pressure.



Reproduced with permission from EUFAMI.

Schizophrenia also imposes a heavy toll on families and friends, who bear much of the day-to-day burden of care. Mental illness affects the entire family; a recent survey found that 68% of carers are parents or step-parents of the person living with schizophrenia, 12% are siblings and 7% are spouses/significant others.²⁹ Many carers experience challenging emotions such as grief, exhaustion, anger and fear for the future.¹³ Some carers may find the burden of care so excessive that they cannot continue in their role; we need to prevent this happening through appropriate care for patients and support for carers.

Compared with the general population, carers of people with schizophrenia are at an increased risk of developing stress-related disorders and physical health problems. In one survey in the US, 41% of carers had provided care for more than 10 years, and over half found it challenging to take care of their own health when caring for somebody with a mental illness (Figure 1).²⁹

Consider the increased risks of homelessness or a jail sentence associated with schizophrenia. Consider too that people with schizophrenia are at an increased risk of dying prematurely from conditions such as heart

disease or infectious diseases, or from suicide or homicide.^{15-17,28,30} Add to this the burden that this illness places on carers ... and it becomes clear that better support is needed on all fronts. Improving the care of people with schizophrenia should thus be a priority in healthcare policy.

Family member account

"I became involved in mental health advocacy because of my son, Thomas. He is now 40 years old and has been suffering from schizophrenia for 15 years. Even today I am still trying to cope with the effects that his mental illness has had on me.

I have already spent many years struggling with the illness and with the professionals, as well as with my personal difficulties as a carer. It looks as if there are many more years to come. When Thomas fell ill, my dreams disappeared. It is very hard for me to accept that my son cannot use his gifts and potential....This is not an occupation, it is a lifetime challenge."

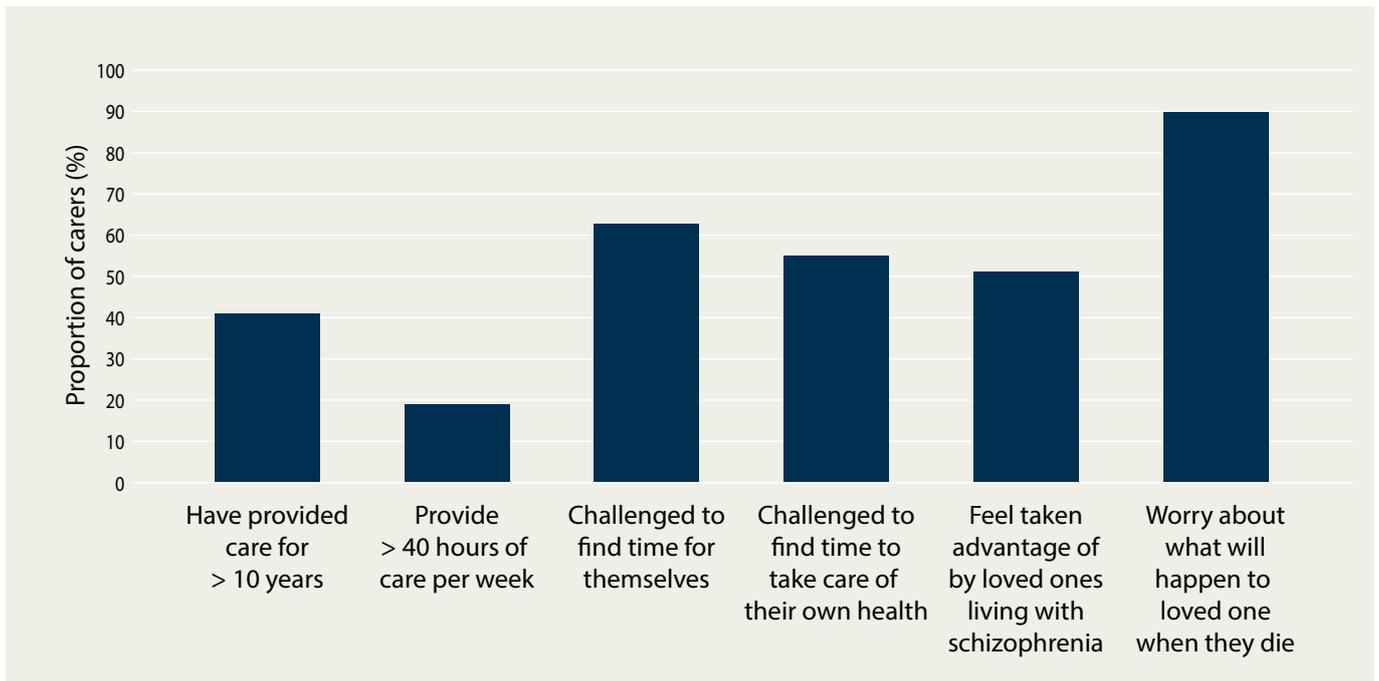


Figure 1. Caring for somebody with a mental illness can take its toll on the carer. The figure shows issues faced by carers in a survey by the US National Alliance on Mental Illness.²⁹

Economic consequences of schizophrenia for society

In addition to the potential human cost, inappropriately managed schizophrenia can have significant implications for healthcare resources and society. The total cost of schizophrenia to society comprises:

- *direct costs* of treating the condition, which may need to increase (initially at least) to enable better treatment to be offered to more patients
- *indirect costs*, which are likely to decrease with improved treatment.

Indirect costs include lost productivity (both by the person affected and their carers) and decreased earning potential due to lost schooling during adolescence, social housing expenses, the unpaid time of family and other carers and costs of interactions with the criminal justice system.

In 2012, the estimated total cost of psychotic disorders such as schizophrenia in Europe (the 27 members of the EU, plus Iceland, Norway and Switzerland) amounted to €29.0 billion – equivalent to €5805 per patient per year.³¹ The cost of care per year, however, varies considerably among (and within) European countries, and budgets for mental health care are extremely low in many countries.³¹

In the US, the total annual cost of schizophrenia has been estimated to be \$62 billion, of which direct costs account for \$22.7 billion.³² A comparison of the total costs of schizophrenia with those of diabetes mellitus shows that indirect costs account for a higher proportion of the total for schizophrenia (62%) than for diabetes mellitus (30%; Figure 2).^{32,33} Hence, there is considerable potential for reducing these indirect costs for schizophrenia by reducing the morbidity (the frequency at which the disease is seen in the population) and mortality (the death rate) associated with it.²¹

Although there are substantial economic impacts associated with schizophrenia, public spending on interventions to improve mental health may nevertheless be cost-effective (even in the current economic climate) owing to the potential benefits of reducing lost productivity and decreasing healthcare costs.³⁴ Hospitalization accounts for the majority of direct costs for schizophrenia: medication costs make up a relatively small percentage (about 2–4%),^{35,36} and it is likely that this percentage will decrease further as the use of inexpensive generic products (as opposed to branded agents) increases. In an analysis of medication costs in the US, the average cost of new drugs acting on the central nervous system (including antipsychotics, which treat the symptoms of schizophrenia) was the lowest of all 12 therapeutic classes studied.³⁷

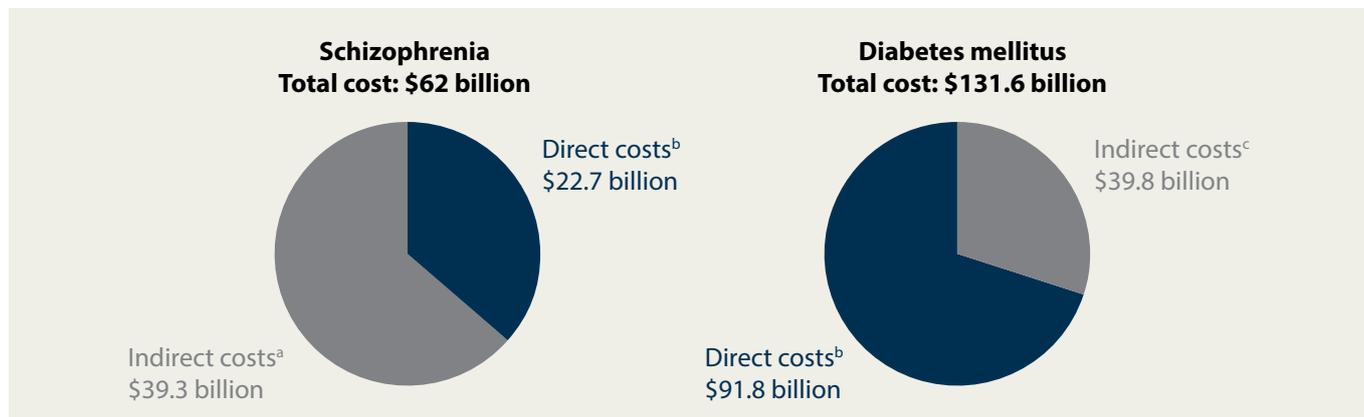


Figure 2. Total costs of schizophrenia³² and diabetes mellitus³³ in the US in 2002 (US dollars). Indirect costs account for a higher proportion of the total costs of schizophrenia compared with some common (and expensive) conditions such as diabetes mellitus.

^aIndirect costs comprised absence from work, carer burden, premature mortality and reduced productivity at work. ^bDirect costs comprised outpatient care, medication, inpatient care and long-term care. ^cIndirect costs comprised disability, reduced productivity, premature mortality and absence from work.

Interventions that reduce the risk of hospitalization may thus produce valuable savings in healthcare costs, in addition to a better quality of life for the patient. Increased spending on treatment and direct healthcare costs of schizophrenia may result in lower total costs, because productivity by patients and their carers increases and other associated indirect costs fall; timely treatment with evidence-based approaches can also reduce future healthcare expenditure. This is highly relevant in the current economic environment, in which continuing care services are under threat in many countries but a large number of patients with schizophrenia need long-term support.

Importantly, spending on schizophrenia (and other mental health problems) should not be seen as a competitor for spending on physical illnesses. As we shall see later in this report, physical and mental ill-health often coexist: many people with schizophrenia also have a physical illness, such as heart disease or diabetes mellitus. Conversely, mental health problems such as depression or anxiety are frequently seen in people with physical illnesses. Furthermore, it is enshrined in UK law that mental health and physical health should be treated equally in terms of research and funding.³⁸

Making best practice standard: investment is needed

The limitations of current care are such that the UK Schizophrenia Commission has labelled schizophrenia “the abandoned illness”.¹³ It is therefore imperative that our existing (and effective) tools are available to all those

with schizophrenia who need them; our best practices should become standard. There is good evidence that high-quality, early intervention services increase the likelihood of a good outcome and are cost-effective.^{10,39-42} More therefore needs to be done to identify schizophrenia earlier and to initiate appropriate treatment as soon as possible, to improve the lives of patients, families and carers. Such aims will require investment in:

- expansion of existing services for people with schizophrenia
- research into the causes and mechanisms of the disorder
- research aimed at improving standards of care in specific domains.

Addressing the challenges

Policy makers and payers

- Ensure that equal weight is given to investment in mental health services and physical health services.

All relevant stakeholders

- Ensure that enough medical professionals are expertly trained to perform detailed assessment and diagnosis in patients with suspected schizophrenia. To achieve this, teaching of mental illness should be proportional to its global public health burden.

Expanding the focus on recovery

Key points

- Up to 50% of people with schizophrenia may eventually have a good outcome if they receive appropriate treatment, which in turn depends on an accurate and thorough clinical assessment.
- For the person with schizophrenia, recovery can be viewed as a process of personal growth, despite the presence of mental illness.
- Empowerment is a significant factor in achieving recovery.
- Mental health professionals should recognize that most people with schizophrenia can achieve some degree of functional recovery, ultimately leading a productive and fulfilled life in the community.
- The potential for recovery should be the first consideration in treatment decisions.

The past four decades have seen a growing movement in schizophrenia that emphasizes the importance of recovery, in addition to symptomatic improvement, as the aim of schizophrenia treatment. This development, coupled with a growing body of clinical evidence, has led to widespread acceptance that some degree of recovery of normal function is possible, despite the presence of residual symptoms, and that some people with schizophrenia may achieve full recovery.^{6,27,43–46} Long-term studies have shown that up to 50% of people with schizophrenia may eventually have a good outcome.⁶ This relatively optimistic view stands in stark contrast to the previous belief that schizophrenia should be regarded as a chronic disorder with little hope of a positive outcome.

The concept of recovery

Importantly, the recovery movement has been led by people with schizophrenia. From their perspective, recovery can be viewed as a process of personal growth despite the presence of mental illness;¹⁸ thus, recovery focuses on attainment of a fulfilled and valued life, rather than on elimination of symptoms alone.^{18,47} Affected individuals therefore consider themselves to be ‘in recovery’ and learning to live with their disorder, rather than having ‘recovered from’ it.⁴³ Their resilience plays an important role in recovery: each individual uses their strengths to establish compensatory mechanisms, thus helping to develop coping strategies to adapt to residual symptoms and focus on where they want their life to go. A huge amount of psychological adaptation

occurs in the recovery process, which can be measured using clinical tools such as the 50-item Stages of Recovery Instrument.⁴⁸

Central to recovery is empowerment; studies have shown that interventions designed to involve people with schizophrenia in decisions about their treatment result in a better outcome than those that do not.^{27,49,50} There is some evidence from England of improved wellbeing when people with mental illness are given the power to decide how personal social care budgets should be spent;⁵¹ however, this approach has not been studied widely elsewhere.

In this report, recovery is considered from the perspective of the person with schizophrenia – as a process of adaptation to mental illness.

How is recovery defined?

Recovery in schizophrenia is defined in various ways. The US Substance Abuse and Mental Health Services Administration defines recovery as “a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential.”⁵² Importantly, this process can occur even in the presence of residual symptoms.⁴³ By contrast, medical criteria for improvement or recovery generally rely on changes in symptoms and measures of functioning, assessed using various objective rating scales; hence, recovery is often defined scientifically as complete absence of symptoms and achievement of normal functioning.^{6,43} For the person with

schizophrenia, definitions of recovery focus on progression beyond the psychological effects of schizophrenia towards a meaningful life in the community.⁴³

First-person account

“The stress of graduate school, along with other factors, triggered the beginning of my illness. I began fearing for my life because I thought that people wanted to harm or kill me. I believed that my house was bugged, that people could read my mind, and that people were trying to insert evil/ destructive thoughts in my mind. The television and radio began to send me secret messages and were referring directly to me in their broadcasts.”

“I felt incapacitated and depressed. I could do nothing, and I lost all hope in myself and in life. For several years, I lived in darkness and despair.”

“Fortunately, I had people in my life, like my mum, who genuinely loved me and who believed in me and never lost hope in me. With her steadfast support, along with that of my psychiatrist and the rest of my family, and along with my faith that guided me through the darkest hours of my life, I very, very slowly began to recover. Recovery was not some magic wave that swept over me. I had to learn to live life all over again, and it occurred in painstakingly small, tiny steps over long periods of time.”

From Scotti P. *Schizophr Bull* 2009;35:844–6.⁵³

The potential for long-term recovery

Studies lasting up to 25 years show that many people with schizophrenia can achieve a good long-term outcome.^{5,6,46,54,55} However, comparatively few participants in these studies experienced continuous recovery: most had periods of recovery interrupted by symptomatic episodes.^{6,56,57}

There is some evidence that not all people with schizophrenia require long-term medication;⁵⁶ identifying patients who no longer need treatment is very difficult, though, and important to get right. Discontinuation of medication can lead to serious consequences for the patient; hence, accurate, detailed clinical assessment is crucial in all cases. Individuals who respond well to medication may be those who benefit the most from continuing treatment and subsequent psychosocial therapy.^{10,58} Most guidelines suggest that antipsychotic medication for people with a first episode of schizophrenia should be maintained for at least 6 months to 2 years.^{10,11,59}

What more can be done?

Mental health professionals, people with schizophrenia and their carers should align in recognizing that most people with schizophrenia can achieve some degree of functional recovery.⁴⁶ The goal of treatment from the outset should be recovery, so that mental health professionals and people with schizophrenia focus on optimal outcomes from treatment, as well as reducing the symptoms.

Addressing the challenges

Clinicians and all relevant stakeholders

- Recognize that many people with schizophrenia can ultimately achieve a productive and fulfilled life in the community.
- Consider the potential for recovery as a first principle in treatment recommendations; such recommendations should be agreed jointly by healthcare providers and people with schizophrenia (or their representative if appropriate).

Advocacy groups/peer support, policy makers and payers

- Develop appropriate communication campaigns to present current views of recovery in schizophrenia to a wide audience.

Integrating current approaches to schizophrenia treatment

Key points

- An integrated approach, delivered by a multidisciplinary team working with the patients and their families, can significantly improve the outcome of schizophrenia treatment and coexisting physical illness.
- **Antipsychotic medication** is effective in reducing the disabling psychotic symptoms of schizophrenia and the risk of relapse; however:
 - available medications have troublesome side effects
 - efficacy against persistent negative symptoms and cognitive impairment is limited
 - adherence to antipsychotic medication is often low.
- New therapeutic approaches are under investigation, aimed at improving treatment of negative symptoms and cognitive impairment, and reducing the risk of suicide. Funding should be made available to support research into the causes of negative symptoms, to develop more effective treatments, thereby facilitating rational prescribing.
- **Psychosocial therapies** aimed at improving patients' functioning in the community are essential. These interventions are often available only to a small proportion of people, usually in specialized centres. They should be made accessible to as many people as possible, which may require a change in perceptions about psychosocial therapies by service commissioners/payers.
- **Coexisting physical illness** is an important issue in people with schizophrenia. On average, death occurs 15–20 years earlier than in the general population, and poor health behaviours are common. All people with schizophrenia should have access to adequate health care, both for physical and mental health.
- Interventions to stop smoking and to reduce alcohol and substance abuse are a priority, and should involve a combination of medical, psychological and behavioural therapies.
- Better provision of information about schizophrenia (psychoeducation) is essential for all stakeholders; however, psychoeducation is often poorly defined.
- Campaigns to increase awareness and tackle prejudice and discrimination towards people with schizophrenia can be effective in diminishing negative attitudes.
- Advocacy and peer-led 'self-help' groups have an increasingly important influence on schizophrenia care, and should be available to everybody with schizophrenia.
- The provision of adequate measures to decrease the burden of illness requires effective coordination of services, and continuity of health and social care.

Schizophrenia is caused by a complex interaction of biological, genetic and environmental factors (see box: What causes schizophrenia?);^{60–64} hence, the illness should generally be treated with a combination of medication and psychosocial therapies, alongside careful attention

to physical health and the treatment of comorbidities. Even if some of the elements are missing, much can be achieved: it is not a case of all or nothing but an additive situation – the more we do (of the right thing), the better. Typically, medication is given early in the course

of schizophrenia, when symptoms bring an individual to the attention of psychiatric services. Psychosocial therapies are not always initiated until symptoms are controlled. This pattern may change, however, once early detection and intervention become more common and non-pharmacological treatments are started earlier. In addition, coexisting physical illnesses (comorbidities) are common in schizophrenia and need to be managed alongside the psychiatric symptoms.

An integrated and multifaceted approach that involves medication, psychosocial interventions and attention to environmental circumstances is likely to improve the outcome of schizophrenia treatment. Thus, the psychiatrist should be part of a multidisciplinary team, consisting of mental health and other medical professionals, social service providers and other relevant agencies (e.g. housing authorities and employment agencies).

Antipsychotic medication in schizophrenia

Drugs that treat the symptoms of schizophrenia (known as antipsychotic medication) form a cornerstone of schizophrenia care.⁶⁵ Those currently available primarily act by blocking the effects of a chemical called dopamine in the brain, although other approaches are under investigation;⁶⁶ however, medication does not work in isolation to improve symptoms. Other factors, such as facilitating the removal of an individual from a stressful environment to one in which they feel safe, also play a key role in allowing further recovery.⁶⁷

Antipsychotic medication is unquestionably highly effective in reducing the disabling positive symptoms of schizophrenia. Currently available drugs also have significant limitations, however (Table 1); notably, they do not adequately treat negative symptoms or cognitive

What causes schizophrenia?

Brain and central nervous system abnormalities

- Disruption of neurotransmitter (a chemical that transmits electrical impulses between nerve cells) pathways in the central nervous system, including dopamine, serotonin, glutamate and γ -aminobutyric acid systems⁶⁰
- Abnormal neurodevelopment pre- and postnatally leading to progressive, abnormal brain changes,⁶⁴ could play a part. Associated structural changes in the brain can be seen on magnetic resonance imaging⁶⁰

Genetic factors

- Family history
- Lifetime risk for a parent, sibling or child of a person with schizophrenia is 6.5%, compared with ~1% in the general population, rising to 40% in identical twins^{61,62}

Genetic and environmental factors interact

Environmental influences

- Complications at birth (e.g. prematurity, low birth weight and lack of oxygen)
- Living in a city rather than the country
- Psychosocial stressors: social isolation, bereavement, sudden trauma (e.g. childhood trauma or abuse), migrant status (being in a minority), family tensions
- Cannabis use has been shown to double the risk of developing schizophrenia,⁶³ however, only a minority of people who use cannabis develop schizophrenia

- Some people are particularly vulnerable to biological and psychological stressors, which can precipitate schizophrenia and relapses.
- Effects of stress can be alleviated by medication, social support, coping strategies and a good understanding of mental illness.¹⁸

impairment, and many patients continue to experience persistent psychotic symptoms. Furthermore, the lack of insight (the patient’s unawareness of their illness) that accompanies schizophrenia also presents challenges.

Potential benefits of antipsychotic medication

Reduction of positive symptoms: Clinical trials have consistently shown that antipsychotic medication reduces positive symptoms, such as delusions and hallucinations.^{66,68} Large-scale studies have not provided unequivocal evidence that newer drugs are more effective than older drugs in this respect; however, some patients find them more acceptable.^{66,69–71} The side-effect profiles of the older and newer drugs are, however, significantly different.⁶⁹

Treatment of acute episodes: Antipsychotic medication has been shown to be effective in the treatment of acute psychotic episodes.^{10,11,72} These medicines are generally effective in relatively low doses in the treatment of first-episode or early schizophrenia.⁴³ About 85% of previously untreated patients show an improvement in symptoms, and 60% remain in remission at 3 years.⁷ Effective, prompt treatment of psychosis in the early stages may avoid a long duration of untreated psychosis, which is associated with a worse clinical and social outcome.^{73–75}

Reduced risk of relapse: Long-term medication (maintenance therapy) reduces the risk of relapse in people with schizophrenia. In an early study, patients who did not receive antipsychotic medication relapsed at a rate of about 10% per month; this rate was reduced

First-person account

“I personally feel like my medication has worked miracles for me. I notice that I am about 10 times better with my medication than without it. It is not perfect, but it has been really effective.”

From Brady M. *Schizophr Bull* 2008;34:204–11.⁷⁶

up to 10-fold in treated patients.⁷⁷ More recently, an analysis of results from clinical trials involving more than 6000 patients showed that maintenance treatment reduces relapse rates and hospitalization rates by about 60% (Figure 3).⁸ Importantly, this analysis also showed that treating just three patients for 7–12 months will prevent one relapse, and treating five patients will prevent one hospitalization,⁸ when medication is supported by appropriate psychosocial therapy (see page 25).

Provision of stability and a platform for other treatments: Prevention of relapses may, in some patients, postpone or prevent a deterioration in the illness.⁷⁸ In addition, by preventing relapses and restoring insight, antipsychotic medication can provide a period of stability, facilitating the introduction of and improved engagement with further treatments, such as psychosocial therapies.⁵⁸ There is evidence that the greater the improvement in symptoms following medication, the greater the likelihood of a good response to psychosocial therapies.^{58,79}

Table 1. Potential benefits and limitations of current antipsychotic medication.

Benefits	Limitations
<ul style="list-style-type: none"> ■ Reduction of positive symptoms ■ Treatment of acute episodes ■ Reduced risk of relapse ■ Provision of stability and a platform for other treatments ■ Reduction of aggression and hostility ■ Reduced suicidal behaviour 	<ul style="list-style-type: none"> ■ Limited efficacy against negative symptoms ■ Inadequate treatment of cognitive impairment ■ Troubling side effects or tolerability issues ■ Low acceptability to some patients <ul style="list-style-type: none"> – Poor adherence – Negative perceptions

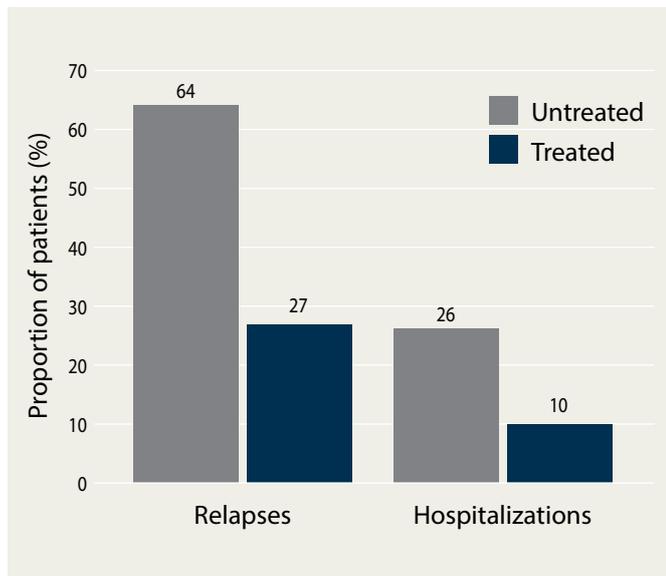


Figure 3. Long-term (maintenance) antipsychotic medication significantly reduces the number of relapses (at 7–12 months) and the number of hospitalizations in patients with schizophrenia, compared with placebo (data from a combined analysis of 65 clinical trials).⁸

Reduction of aggression and hostility: Behavioural symptoms such as hostility and aggression are common in schizophrenia, and there is evidence that these symptoms are amenable to antipsychotic medication.^{10,80} Violent behaviour is most common before antipsychotic medication is initiated. In general, good adherence to treatment appears to be associated with lower levels of aggression,^{10,80,81} and people with schizophrenia who adhere to their treatment and are clinically stable appear to be no more violent than the general population.⁸¹ Antipsychotic medication is often combined with other drugs, such as anticonvulsants or mood stabilizers, in an effort to control aggression, but there is little evidence to support this approach.¹⁰

Reduced suicidal behaviour: suicidal behaviour is present in about 50% of those affected, and about 5–10% of people with schizophrenia take their own lives.^{82,83} Clinical trials with some antipsychotic medication have shown reductions in suicidal behaviour.^{9,82}

Limitations of current antipsychotic medication

Limited efficacy against negative symptoms: Negative symptoms of schizophrenia, such as apathy, lack of drive and diminished emotional expression, may occur from the start of the disorder, and may actually be the predominant symptoms; indeed, in about 70% of cases these symptoms develop before positive symptoms.^{66,84}

Currently available antipsychotic medication has limited effects on negative symptoms.^{10,66} This is a major concern, because negative symptoms are associated with impaired occupational and social function, and constitute a significant barrier to independent living.^{10,85,86} Indeed, negative symptoms are more closely related to impaired functioning than positive symptoms.⁸⁷

Inadequate treatment of cognitive impairment:

Almost all people with schizophrenia show some degree of cognitive impairment, affecting functions such as verbal fluency, memory, attention, processing speed, prioritizing tasks and making decisions.^{65,66} These deficits occur early in the course of the disorder, usually years before the onset of full psychosis,^{65,88} and are strong predictors of poor functioning and outcome.⁸⁹ Unfortunately, the antipsychotic medication currently available has little impact on cognitive symptoms of schizophrenia: any improvements seen appear to be due to reductions in other symptoms, rather than to direct effects on cognition.^{10,88,90} Some have argued that effective treatment of cognitive symptoms is the most urgent priority for the medical treatment of schizophrenia.⁶⁶

Troubling side effects or tolerability issues:

Antipsychotic medication is associated with a number of side effects (Table 2). These can be severely troubling and may limit adherence to treatment, thereby reducing the potential for recovery. Individual agents differ in their side-effect profiles, but among the most common effects are motor symptoms, metabolic disturbances and hormonal disturbances.

- **Motor symptoms** affect movement and muscles, and result in parkinsonism (tremor and muscle rigidity resembling signs of Parkinson disease), muscle spasm (dystonia) or subjective and objective restlessness (akathisia). These symptoms are collectively known as acute extrapyramidal symptoms (EPS). Another EPS, usually occurring later in treatment as the patient ages, is tardive dyskinesia, a syndrome of involuntary, repetitive movements of the limbs, trunk and, most characteristically, the lips, tongue and jaw.
- **Metabolic disturbances** include weight gain or undesirable changes in the levels of glucose and cholesterol and other fats in the blood. Such disturbances can add to the burden of physical ill health often experienced by people with schizophrenia.⁹¹
- **Hormonal disturbances**, notably increases in prolactin (a hormone involved in the control of milk production in the breast), can give rise to secondary problems such as sexual disturbances.⁶⁶

Table 2. Potential side effects of current antipsychotic medication.

- Extrapyramidal symptoms
 - Slow, stiff movement and tremor (parkinsonism)
 - Abnormal muscle tone/muscle spasms (dystonia)
 - Involuntary movements (tardive dyskinesia)
 - Subjective experience of restlessness and restless movements (akathisia)
- Weight gain
- Metabolic disturbances
 - Changes in blood glucose levels
 - Increases in cholesterol and triglycerides
- Sedation
- A feeling of being ill-at-ease (dysphoria)
- Hormonal changes
- Sexual dysfunction
- Changes in the electrical activity of the heart (rare)
- Neuroleptic malignant syndrome (a rare but life-threatening neurological disorder)
- Agranulocytosis (very low levels of white blood cells, also life-threatening but rare)

Poor adherence to therapy: Adherence to antipsychotic medication (i.e. the extent to which medication is actually taken as prescribed) is often low in people with schizophrenia.^{69,71} The average non-adherence rate for oral antipsychotic medication is estimated at about 50%,¹⁰ although higher rates have been seen in long-term studies. Principal reasons for low adherence include:

- insufficient information about the illness and its treatment
- lack of improvement in psychotic symptoms
- troublesome side effects (which may be relieved if the patient stops taking the medication)
- lack of awareness of the need for treatment
- financial difficulty (especially in countries facing economic crisis)
- complexity of treatment schedules¹⁰
- fear of discrimination
- poor doctor–patient relationships
- lack of support from carers.

Negative symptoms and cognitive impairment may also contribute to poor adherence. A related problem is that many people with schizophrenia lack the insight to acknowledge that they are ill,⁹² and this can contribute to poor adherence if the individual does not agree that he or she needs treatment.¹⁰ Furthermore, the very fact that a person is receiving antipsychotic medication may make them feel stigmatized,⁹³ which can encourage non-adherence.¹⁰ Social and cultural factors can either increase or decrease adherence.

First-person account

“At the end of my second year of taking [medication], I began to experience severe akathisia...My doctor switched my medication . . . , and the akathisia gradually diminished. I have now been taking [this other drug] for 3 years, and it seems to be working beautifully, except for the extra 20 lbs of fat I’m carrying around. However, I wouldn’t change it for anything. I have continued to notice steady improvement in my condition over the last 3 years, both for positive and negative symptoms.”

From Snyder K. *Schizophr Bull* 2006;32:209–11.⁹⁴

Non-adherence to treatment is commonly associated with relapse,⁹⁵ often leading to hospitalization, although this association may partly reflect the fact that non-adherence may sometimes be a symptom of worsening of the disorder. The rate of hospitalizations (which are often used as an indicator of a severe relapse) are up to 400% higher in non-adherent patients than in adherent patients.^{10,96} In addition, non-adherent individuals are more likely to have poor long-term function, to be violent,⁸¹ to be arrested⁹⁷ or to attempt suicide than adherent patients.⁹⁸

Treatment-resistant schizophrenia

Antipsychotic medication is effective in reducing psychotic symptoms, but many patients show only a partial response to treatment. Even when remission is achieved, few people are completely symptom-free.^{65,66} In addition, up to one-third of people with schizophrenia show a poor response to antipsychotic medication, and some may develop treatment-resistant schizophrenia.¹⁰ Treatment resistance normally develops as the disorder progresses,⁹⁹ but in about 10% of cases it is apparent after the first episode.¹⁰

Symptoms can be improved in some patients with treatment-resistant schizophrenia.^{100,101} Careful and specialist management and monitoring are required in such cases,^{102–104} and timely intervention may help to avoid prolonged treatment with ineffective medications.

What more can be done?

The limitations of available drugs create considerable scope for improvements in antipsychotic medication.

New therapeutic approaches are under investigation, aimed at discovering novel drugs that are effective against negative symptoms and cognitive impairment.^{66,88} There is also a general need for better tools to enable clinicians to assess negative symptoms and cognition in patients with schizophrenia.

Adherence to antipsychotic medication can be improved by understanding an individual's reasons for non-adherence and by involving the patient in treatment decisions. ('Adherence' requires patient participation and an effective partnership with the healthcare provider, whereas 'compliance' has more to do with following directions [see glossary].) One potential obstacle to adherence is the common practice of using multiple medications (polypharmacy) to control symptoms, which may make it difficult for patients with schizophrenia to remember when to take their medication. This practice should be avoided whenever possible. The use of long-

acting injectable (depot) formulations of antipsychotic medication may help to improve adherence.^{10,59,105}

Shared decision-making has also been found to help in enhancing adherence behaviour. A recent survey by the Global Alliance of Mental Illness Advocacy Networks-Europe (GAMIAN-Europe) found that being a member of a patient organization/self-help group has a positive influence on adherence.¹⁰⁶

Individualized therapy should be promoted, based on the recipient's choice and preferences. Care needs to be taken to match the side-effect profiles of different drugs to the needs of the patient (e.g. avoiding drugs with a tendency to cause weight gain if this is an issue). This may be of particular importance in young patients. About 25% of patients with newly diagnosed schizophrenia are under 18 years of age, and they may be particularly sensitive to side effects such as weight gain or menstrual cycle disturbances resulting from drug-induced hormonal changes. Careful, systematic monitoring of side effects, and intervention if appropriate, is warranted for all patients on long-term medication.

Close collaboration with carers and provision of comprehensive education can prevent relapses and help to achieve adherence.

Addressing the challenges

Members of professional organizations

- Develop and implement programmes to promote the use of individualized treatment, taking into account the patient's wishes and preferences whenever possible.

Clinicians

- Commit to the principles of good prescribing practice, avoid polypharmacy and the use of excessive doses whenever possible, and consider appropriate alternative treatment measures at an early stage in patients who require it.
- Train junior doctors in thorough clinical assessment, accurate diagnosis and good prescribing practice.

National and international psychiatric organizations

- Work together to develop and implement consistent guidance for good prescribing practice.

Psychosocial therapies and schizophrenia

Psychosocial therapies play an important role in the treatment of schizophrenia. These therapies are aimed at improving the patient’s functioning in the community, which in turn can result in clinical improvements, such as reductions in the number of relapses or hospitalizations. Substantial evidence already supports the use of many psychosocial therapies in schizophrenia, including cognitive behavioural therapy (CBT) for psychosis, cognitive remediation and social skills training;^{11,18,74,107,108} several other approaches also show promise (Table 3).¹⁸ The disability associated with schizophrenia is often wide-ranging, so psychosocial therapies may be combined to address multiple issues. For example, social skills training might be provided as part of an integrated programme that also includes family psychoeducation, cognitive remediation and CBT.¹⁸

Potentially beneficial psychosocial therapies

Assertive community treatment: The assertive community treatment (ACT) model was developed to address the rise in relapse and hospitalization rates that followed the shift from institutionalized to community care in the US from the 1980s.¹⁸ This approach, aimed at a subgroup of patients who are high users of services, involves a multidisciplinary team working in the community to provide a range of services, including

medication management, practical support (e.g. with housing) and rehabilitation. It is characterized by a high frequency of patient contact and low patient-to-staff ratios, thus making substantial demands on healthcare resources;^{18,107} however, for this and other psychological therapies, the increased time spent with patients may in itself contribute to positive outcomes.

Studies in several countries have shown that ACT results in lower rates of homelessness and hospitalization than standard care in patients who are high service users.^{107,109–113} One analysis found that, on average, there was a 37% greater reduction in homelessness in participants undergoing ACT than in those receiving standard care.¹⁰⁹ Other studies of those who frequently use psychiatric services showed that ACT can reduce the number of hospital days by about 23% and hospitalizations by 60–80%, making this a potentially cost-effective intervention from the perspective of healthcare providers.¹¹⁴

Some trials, however, showed less benefit, possibly because in those instances ACT was compared with a ‘usual practice’ that consisted of generally high-quality services.^{115,116} Furthermore, although ACT can help people with schizophrenia to live stably in the community, the available evidence suggests that it has only a limited impact on other outcomes, such as social functioning or employment.¹⁸

Table 3. Many psychosocial interventions have been shown to improve outcomes in schizophrenia (evidence-based approaches), and others are being developed and evaluated (promising approaches).^{18,107}

Evidence-based approaches

- Assertive community treatment
- Cognitive behavioural therapy for psychosis
- Cognitive remediation
- Family therapy/psychoeducation
- Peer support and self-help strategies
- Social skills training
- Supported employment
- Integrated treatment for coexisting substance abuse disorder

Promising approaches

- Cognitive adaptive therapy
- Healthy lifestyle intervention
- Interventions targeting older individuals
- Prodromal stage intervention
- Social cognition training
- Social rehabilitation (Clubhouse Model)

Cognitive behavioural therapy for psychosis:

Psychotic symptoms may persist despite antipsychotic medication, and this can create a significant barrier to recovery.¹⁸ CBT (a talking therapy that helps people manage their illness by changing the way they think and feel) directed towards psychotic symptoms aims to reduce the severity and resulting distress. Many studies have shown that this approach improves social functioning, reduces positive and negative symptoms and decreases mood disturbances, compared with control groups.^{18,117} Other studies, however, have not shown such improvements, and the effects of CBT on outcomes such as hospitalizations, depression, suicidality and insight have not been clearly established.¹⁰⁷ A recent systematic review concluded that CBT offers no clear advantage over other psychosocial therapies, including family therapy and psychoeducation.¹¹⁸ The evidence supporting the use of CBT is largely driven by studies in which participants received at least 16 sessions:¹¹ cognitive behavioural therapists require specialist training and expertise, so cost is an important consideration. An analysis by the UK National Institute for Health and Care Excellence (NICE), however, concluded that CBT is likely to be cost-effective because the intervention costs are offset by decreased hospitalization costs.¹¹

Cognitive remediation: Cognitive remediation programmes usually involve exercises designed to improve aspects of cognition, often combined with teaching strategies to enhance performance of these exercises; they may also include strategies for coping with cognitive impairment.¹⁸ Most studies have found that this approach is effective in improving cognition, but its effects on psychosocial functioning are more variable.^{18,119,120} Cognitive remediation models differ considerably, however, and the number of robust studies in this field is limited.¹⁰⁷ It has been suggested that cognitive remediation enhances the effects of other forms of psychotherapy by increasing the ability to learn

new skills.¹⁸ Furthermore, there is some (very limited) evidence that it may protect against schizophrenia-related loss of grey matter in the brain over a 2-year period¹²¹ and improve the number and functionality of nerve cell connections in the brain.¹²²

A cost-effectiveness analysis conducted as part of a clinical trial of cognitive remediation in the UK concluded that this approach is likely to be cost-effective in the short term, but might ultimately have only a limited potential for long-term cost savings because it could increase the use of other services.¹²³

Family therapy/psychoeducation: Many people with schizophrenia live with their families, so family therapy (also known as family psychoeducation in the US) can play an important role in promoting recovery.^{14,18} This process of educating individuals and families about the nature and symptoms of the illness enables them to develop adaptive coping strategies, capitalize on their strengths and learn self-care. An educated individual (and their family) is then better able to participate in shared decision-making.

Family psychoeducation offers a valuable opportunity for people with schizophrenia, their families and healthcare professionals to exchange insights about their personal experiences of schizophrenia and the care available. Importantly, family members can provide continuity for a person with schizophrenia, even if healthcare professionals involved in their care change.

The family therapy/psychoeducational approach aims to foster collaboration among family members and healthcare professionals. Studies have consistently shown that family psychoeducational approaches are effective in reducing relapses and hospitalizations, and to some extent in improving social functioning,^{18,107,124,125} and there is evidence that these benefits persist during long-term therapy (5 years).¹²⁶ One early analysis showed that relapses and hospitalizations could be reduced by about 20% when families were included in the treatment, compared with usual care.¹² In another study, the relapse rate at 2 years was 40% in patients whose families received psychotherapeutic support, compared with 75% in those whose families received no help.¹²⁷ The greatest benefits of family psychoeducation appear to be seen in people with a first episode of psychosis or a recent onset of schizophrenia.¹²⁸ Furthermore, the benefits of psychoeducation also extend to family members, who report reduced levels of distress, improved family relationships and enhanced coping and empowerment.^{107,129,130}

First-person account

"[My psychiatrist] listened to me patiently, got me on the right dose of medication, and after 6 months diagnosed me with schizophrenia. He described to me what the illness was and gave me literature references to read to help me understand the illness. I remember sitting in the family room with my mum and spending hours reading everything I could get my hands on."

From Scotti P. *Schizophr Bull* 2009;35:844–6.⁵³

The economic data available suggest that family therapy is superior to standard care, in that it can offer cost savings as well as better clinical outcomes.²¹ An economic analysis by NICE in the UK suggests that family therapy is likely to be cost-effective because the costs of therapy are offset by a decrease in the cost of treating relapses.¹¹

Multifamily group psychoeducation is another useful family-based intervention. In this model, trained staff lead a group of individuals with schizophrenia and their families, who are provided with information about the course and treatment of psychotic disorders. They are also trained in the use of structured problem-solving exercises designed to help them meet the challenges of living with or caring for a person with a psychotic disorder.^{131,132} Such a multifamily approach can reduce relapse rates to a greater extent than single-family psychoeducation, which itself improves relapse rates to a greater extent than treatment without family psychoeducation (Figure 4).^{133,134} Moreover, the addition of multifamily group psychoeducation to antipsychotic medication approximately doubles the effect size of medication alone.^{133,134}

Paradoxically, however, the provision of information can increase 'self-stigmatization' among people with schizophrenia, causing them to anticipate prejudice and discrimination.¹³⁵⁻¹³⁷ The potential impact of self-stigmatization is illustrated by the 27-nation International Study of Discrimination and Stigma Outcomes, in which 64% of participants reported that

they had refrained from applying for work, training or education, and almost three-quarters felt a need to conceal their diagnosis because of anticipated discrimination.¹³⁵ Nevertheless, in the long term, psychoeducation – supported by appropriate antipsychotic and psychosocial therapies – appears to be effective in reducing the burden felt by many people with schizophrenia and their families.¹²⁶

Peer support and self-help strategies: People who are affected by schizophrenia, both the patients themselves and those who care for them, can offer powerful and eloquent insights into the condition. As a result, peer-led interventions have an important place in schizophrenia care, and this approach has been actively promoted in both the US and the UK.^{6,138,139} Peers play an active role in mutual support or advocacy groups.^{14,139} Peer-led groups such as the National Alliance on Mental Illness (NAMI), the European Federation of Associations of Families of People with Mental Illness (EUFAMI) and GAMIAN-Europe work together to help both themselves and the people they care for. Such groups can provide support in a number of areas (Table 4).¹³⁹

Evidence from the US suggests that many users of peer-led strategies also use conventional therapies such as medication and psychotherapy.^{139,140} While peer-to-peer counselling appears to be beneficial when included as part of routine care,¹⁴¹ the self-help approach has generally been more effective in other settings (e.g. alcohol abuse or weight control) than in schizophrenia. Nevertheless, in the recent report from

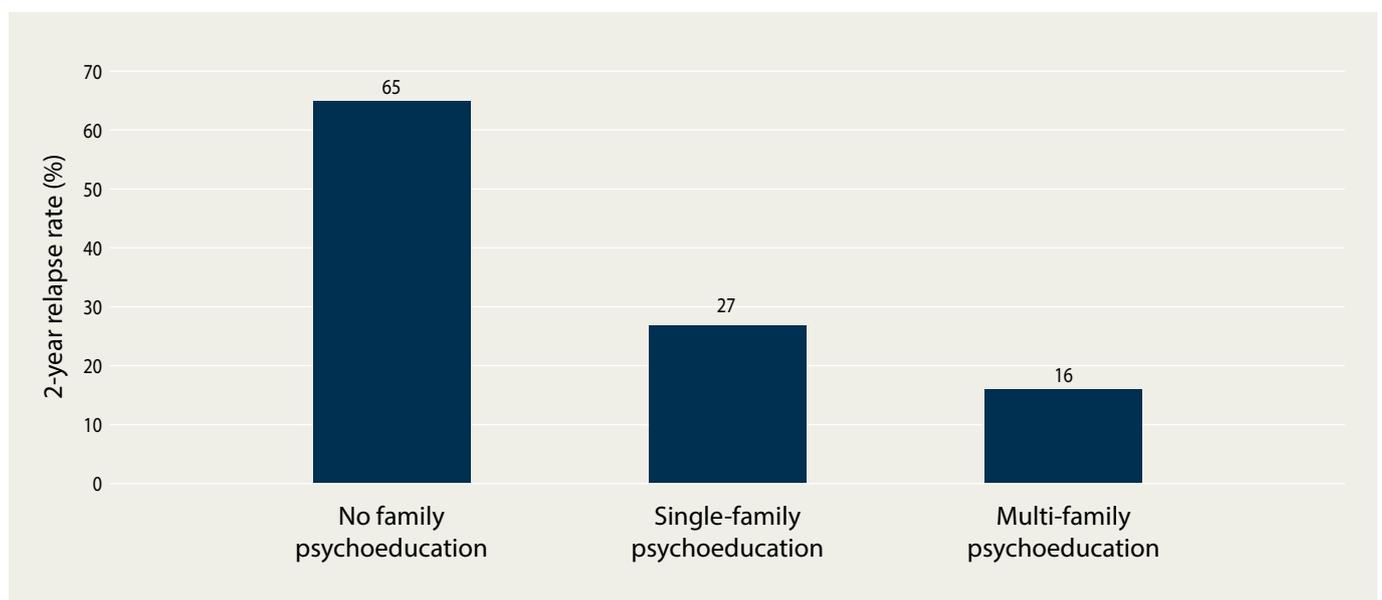


Figure 4. Family psychoeducation reduces schizophrenia relapse rates, compared with treatment without family psychoeducation, and multifamily group psychoeducation is particularly effective.¹³⁴

the UK Schizophrenia Commission, 48% of people with schizophrenia identified self-management strategies as an important factor in their recovery.¹³ The importance of peer-led interventions is highlighted by experience with the Wellness Recovery Action Plan® programme, which represents an important landmark in the application of self-help strategies in schizophrenia. This programme has been shown to improve symptoms, hopefulness and quality of life compared with standard care, in patients with severe, persistent mental disorders.¹⁴² Such support can substantially improve patients’ wellbeing and quality of life, and should be available to all people with schizophrenia.

There is also some evidence that self-help strategies may be useful in postponing readmission to hospital, although one study found no differences in clinical or social outcomes between individuals who participated in self-help groups and those who did not.¹⁴³ It has been suggested that peer-led strategies in mental health reduce psychiatric inpatient bed use in the US and Australia, resulting in cost savings which outweigh the costs of the intervention.¹⁴⁴

To date, few rigorous controlled trials have evaluated the effectiveness of self-help strategies in schizophrenia.¹³⁹ Although controlled trials are regarded as the ‘gold standard’ to inform evidence-based treatment decisions, their absence should not constitute a barrier to implementation of potentially effective strategies: qualitative research, observational studies and clinical experience can also provide valuable insights.⁷⁴

Social skills training: In people with schizophrenia, problems with psychosocial functioning are related to impairments in social skills that may be present before

the onset of illness and that persist if not addressed.¹⁸ Social skills training can improve social and daily living skills, community functioning and other aspects of social functioning. This approach also has a small but significant effect on relapse rates.^{108,145} The value of social skills training may be limited somewhat by decreased attention in people with schizophrenia;¹⁰⁸ however, attention-shaping therapy or cognitive remediation (i.e. strategies to improve attention and cognitive performance) appears to be useful in improving the acquisition of social skills in schizophrenia.¹⁴⁶

Supported employment: Schizophrenia can significantly reduce a person’s ability to work: on average, only 10–20% of people with schizophrenia are in competitive employment.¹⁸ People with severe mental disorders such as schizophrenia are about 6–7 times more likely to be unemployed than those without such illnesses.¹⁹ UK data suggest that only about 8% of people with schizophrenia are employed, despite evidence that many of them want to work.¹⁴⁷ A supported employment approach can help people with schizophrenia to achieve competitive employment and to work for longer and earn higher wages than people without such support.¹⁰⁷ At least 50% of people receiving supported employment obtain competitive employment at some stage during follow-up, according to most studies.¹⁰⁷ The key features of such interventions are:

- a focus on competitive employment
- a rapid search for a job, rather than prolonged preparation for work
- integration of employment and psychiatric services
- an emphasis on the individual’s job preferences
- continuing job support.¹⁰⁷

Table 4. Areas in which peer-led and advocacy groups can provide support to people with schizophrenia.¹³⁹

- Social environment
 - Provision of feedback about current status and experiences
- Psychoeducational information
- Cognitive and environmental antidotes
 - Beliefs and attitudes that define the activities of group members
 - The recovery model is an example of a cognitive antidote that can change an individual’s attitude to his/her illness
- Patient and family education

One of the most widely used supported employment models is the Individual Placement and Support (IPS) model, for which the only eligibility criterion is that the person wants competitive work.^{18,148} The IPS model can produce substantial savings in healthcare and societal costs (Figure 5), as well as potential benefits to the individual in terms of fewer hospitalizations and increased rates of competitive employment.^{21,149–151} Supported employment measures, however, have not been clearly shown to improve long-term employment and economic independence in people with schizophrenia. For this reason, it has been suggested that these strategies should be adequately integrated with interventions such as CBT, cognitive remediation and social skills training.¹⁰⁷

Although access to employment can have a positive impact on mental health, this must be the right sort of employment: poor-quality jobs can result in job strain, which itself can lead to poor mental health.¹⁹ This is an important issue, because employers often have low expectations of people with schizophrenia, and hence these individuals may end up in low-skilled jobs with little responsibility, or in non-competitive (voluntary or sheltered) work.¹⁴⁷ Paid employment may be beneficial to people with schizophrenia, even if this entails the risk of disrupting established routines and habits – the so-called ‘dignity of risk’.⁴⁴

Limitations of psychosocial therapies

Psychosocial therapies do have limitations, however, and they may not be appropriate unless symptoms are significantly well controlled and patients have insight into their condition and the need for treatment. Patient selection, for example, may be important for a successful outcome: highly motivated individuals generally respond to cognitive remediation better than those who are less motivated.¹⁵² Moreover, some people with schizophrenia may, if not treated with antipsychotic medication, worsen when stressed by psychosocial interventions.¹⁵³

The cost of some therapies, such as CBT, may be prohibitive in countries where they are not available through public health services. Where public funding for CBT is available, priority may be given to patients with other mental health problems deemed to have a high likelihood of remaining in paid employment.¹⁵⁴ In the US, many psychiatrists will not accept Medicaid patients, who are therefore excluded from potentially beneficial psychosocial therapies. Similarly, family psychoeducation for relatives is not currently funded in many countries.

The design of studies to investigate the effectiveness of psychosocial therapies is not always as robust as the methodology applied to clinical trials for licensing a new drug. Therefore, carefully designed randomized controlled

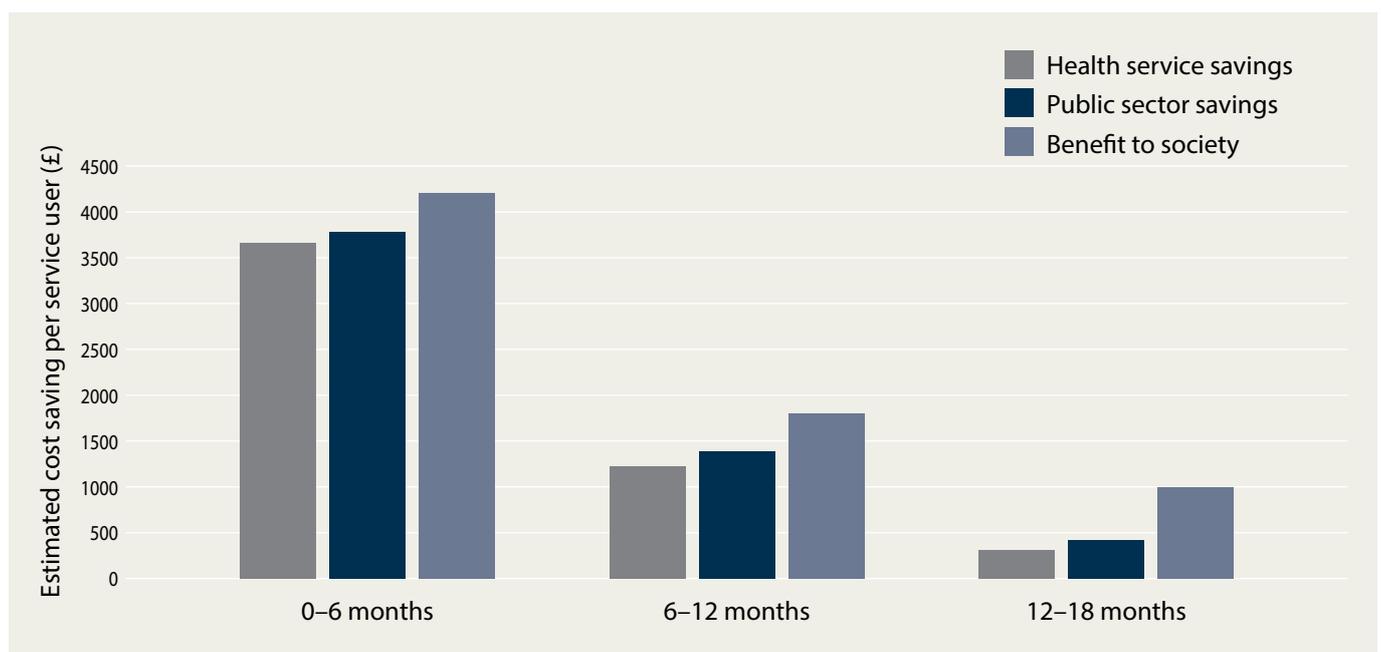


Figure 5. The Individual Placement and Support model of supported employment can produce substantial savings in healthcare and societal costs. The figure shows estimated savings (in GBP) per patient, using UK data from the EQOLISE study.^{21,150} Figure adapted from Andrew A, Knapp M, McCrone P, Parsonage M, Trachtenberg M. Effective interventions in schizophrenia: the economic case. A report prepared for the Schizophrenia Commission. 2012. London: Rethink Mental Illness.²¹

trials are needed in appropriately sized groups of patients before firm recommendations can be made for further investment in some of these treatments.

What more can be done?

There is evidence supporting the use of some forms of psychosocial therapies (Table 5), but these interventions are often underutilized.^{107,155} Unlike medication, which is available to most patients who need it, psychosocial interventions are generally available only to smaller populations, usually in specialized centres.

In a recent US analysis of Medicaid claims data over 1 year, 59% of claimants with schizophrenia or bipolar disorder had a claim for an evidence-based psychosocial therapy, primarily some form of individual psychotherapy; however, fewer than 5% had claims for ACT, family psychotherapy or social skills training, and

First-person account

“I would love to be able to work like a regular person. I love to be busy. I love to feel useful. I don’t get celebrated or applauded because I have nothing to show for all my daily hard work. It is horrible to feel this unappreciated, this uncelebrated.”

From Johnson A. *Schizophr Bull* 2012;38:207–8.¹⁵⁶

almost none had a claim for CBT or supported employment.¹⁵⁷ Therefore, there are ample opportunities to increase the uptake, and hence the effectiveness, of psychosocial therapies. Effective therapies could be used earlier in the course of the disorder: the evidence base for many forms of psychosocial therapies is so strong that there is a good case for trying them before other potential treatments, for which less supporting evidence is available. Clinicians and purchasers need to

Table 5. Potential benefits of psychosocial therapies.^{18,107,130,155}

Intervention	Potential benefits
■ Assertive community treatment	■ Reduction in rates of homelessness and length of hospital stays
■ Cognitive behavioural therapy for psychosis	■ Decreases in both positive and negative symptoms and mood disturbances, and improved social functioning
■ First episode intervention for psychosis	■ Improvements in quality of life, social functioning and adherence
■ Cognitive remediation	■ Improvements in cognition and psychosocial functioning
■ Family psychoeducation	■ Some improvement in social functioning, and family coping and empowerment
■ Peer support and illness self-management training	■ Enhancement of empowerment and ability to cope with the illness
■ Social skills training	■ Improvements in social functioning
■ Supported employment	■ Increases in employment rates, hours worked and wages earned. Gains in self-esteem and quality of life
■ Integrated treatment for coexisting substance abuse disorder	■ Reductions in substance use and arrests; improved functioning

understand the potential benefits of psychosocial therapies better if these treatments are to be made more widely available. It is also important to ensure continuity of care for people with schizophrenia when they transfer from adolescent services to the adult care system.

The use of CBT could be extended by using specialized therapies to treat individual symptom domains; however, this raises the important question of how to identify people who might benefit from this approach, and how it should be funded.

A strong therapeutic relationship between the clinician and patient has the potential to yield improvements in adherence to medication,¹⁵⁸ work performance¹⁵⁹ and symptoms, and reductions in hospitalizations.¹⁶⁰ Both parties should work together to agree treatment goals and to review progress in meeting these goals.

In addition, it is important to consider cross-cultural differences in belief systems, including religion and spirituality, which may have an impact on mental health.¹⁶¹ Such factors are relevant during diagnosis, when spiritual ideas need to be differentiated from delusions. They are also important from a treatment perspective, when religious beliefs can potentially help in the recovery process by encouraging help-seeking behaviour and engagement with treatment.¹⁶²

Psychoeducation

Psychoeducation should be made more widely available to people with schizophrenia and their families, because improved provision of information could result in better empowerment of people with schizophrenia.

Psychoeducation alone, however, is of little value: such educational initiatives need to be accompanied by appropriate antipsychotic and psychosocial therapies.

As described above, recovering patients have a valuable part to play in sharing their experiences and serving as role models, and peer-led interventions are increasingly recognized as an essential feature of recovery-oriented care.¹⁰⁷ Schizophrenia services, however, are often fragmented, involving numerous healthcare providers and agencies, and people with schizophrenia may therefore find it difficult to navigate through the system. More effort should be devoted to ensuring that peer-led support and advice is readily accessible, particularly for young people with schizophrenia.

Addressing the challenges

Policy makers and payers

- Ensure that potentially useful and cost-effective psychosocial therapies are made available to as many people with schizophrenia as possible – not just to those fortunate enough to have access to specialized centres and to be able to pay for their therapy. Moreover, these interventions should be tried early in the course of schizophrenia.
- Fund research into psychosocial therapies.
- Establish programmes to communicate the potential benefits of psychosocial interventions to healthcare commissioners and other healthcare policy makers, and ensure that the benefits of effective therapies are recognized and acknowledged.
- Support local, regional, national and international patient and family associations financially.

Clinicians

- Establish a strong therapeutic alliance with patients and their families, and ensure that recommendations on treatment goals and strategies are reached through such alliances.
- Encourage recovered patients to share their experiences with others and to act as role models for those undergoing treatment, and to provide such patients with appropriate support during this process.
- Engage with other stakeholders to ensure that effective psychoeducation and public education programmes are appropriately targeted and implemented, and that peer-led services are adequately supported and made available to all who could benefit from them.
- Include courses focusing on evidence-based psychosocial therapies in training programmes for psychologists, rehabilitation technicians and psychiatrists.
- Provide information and refer patients and families to patient associations and self-help groups.

Management of coexisting physical illness

Schizophrenia is associated with a substantial burden of physical illness: on average, people with schizophrenia die 15–20 years earlier than the general population (Figure 6)^{15–17,163,164} – a situation that has been described as “a scandal”.¹⁷ This burden is the result of a number of factors, including:¹⁶⁵

- a high frequency of poor health behaviours (e.g. poor diet, lack of exercise, high rates of smoking and alcohol or substance abuse)
- under-diagnosis of physical illness³⁰
- decreased access to health care compared with the general population (furthermore, when care is provided it is often too late and of poor quality)^{13,17}
- inadequate self-care
- medication side effects
- increased risk of cardiovascular disease
- suicide
- self-stigmatization (people with schizophrenia may be reluctant to seek health care because they fear prejudice and discrimination)
- self-neglect or inadequate self-care, as a consequence of schizophrenia.

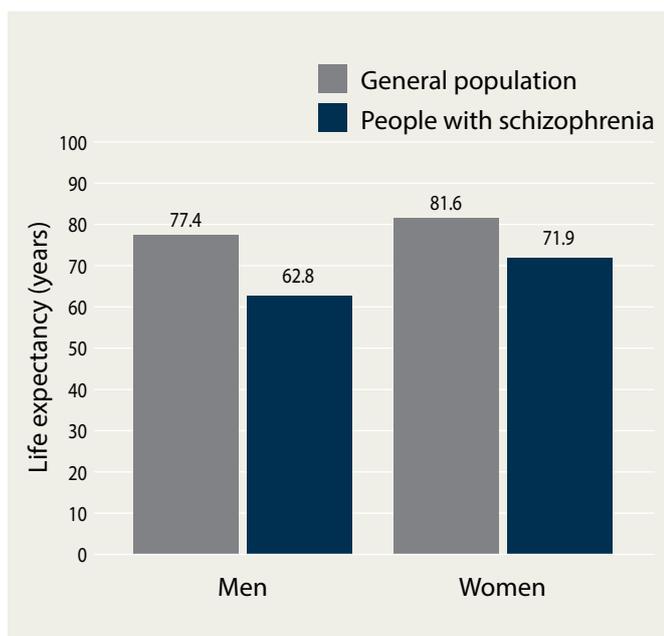


Figure 6. People with schizophrenia die earlier than the general population. The figure shows the mean decrease in life expectancy at birth in people with schizophrenia, compared with the general population, in London, UK.¹⁶

The scale of the problem is illustrated by a recent survey of people with mental health problems in 27 European countries, 20% of whom had schizophrenia. This survey found that 86% of participants had at least one physical health problem, of which the most common were weight gain (45.7%), smoking (38.3%) and heart problems (25.2%).¹⁶⁶

Weight gain and metabolic problems are common in people with schizophrenia. It is not uncommon, for example, for an individual to gain up to 5 kg or 6 kg in weight within 2 months of starting antipsychotic medication,¹⁶⁷ and in many cases this can result in an increased risk of conditions such as obesity, type 2 diabetes mellitus or heart disease.¹⁶⁵

Increased rates of heart disease, compared with the general population, are major drivers of early death and ill health among people with schizophrenia. A study from Sweden has shown that deaths from heart disease, while decreasing in the general population, are actually increasing among people with schizophrenia.¹⁶⁸ Under-diagnosis and under-treatment may contribute to this high mortality. Deaths from heart disease are up to five times higher in people with schizophrenia than in the general population; however, diagnosis rates may actually be lower according to recent data from research in Sweden.³⁰

Inadequate attention to physical illness: healthcare professionals sometimes pay too little attention to treating physical illness in people with mental illness.¹⁷ Importantly, people with schizophrenia or other mental illnesses are less likely to undergo procedures such as angioplasty after a heart attack than individuals without mental disorders.^{169–171} Similarly, data from the US show that individuals with diabetes mellitus and schizophrenia are less likely to receive statins to lower their cholesterol levels than those without schizophrenia.¹⁷² In one study, people with both diabetes mellitus and mental illness were less likely to be hospitalized for treatment of diabetic complications than those without mental disorders.¹⁷³

Recent years have seen increased attention to physical illness in people with schizophrenia, resulting in better coordination of healthcare services, with primary care physicians playing an increasing role. Carers too are becoming increasingly involved in monitoring the physical wellbeing of people with schizophrenia, forming a ‘therapeutic alliance’ with healthcare professionals. Indeed, family members and physicians often recognize physical health problems more readily than people with schizophrenia themselves.¹³

Smoking is another major cause of ill health in people with schizophrenia. In the UK, an estimated 65% of people with schizophrenia smoke, compared with 33% of the general population,¹³ and in the US, four times as many people with schizophrenia smoke (~88%)¹⁷⁴ compared with the general population (19%).¹⁷⁵ Smoking is often combined with a poor diet and obesity.¹⁷⁶ Indeed, tobacco-related illness may be the leading cause of death among people with mental health problems such as schizophrenia.¹⁷⁷ Interventions to stop smoking should therefore form part of schizophrenia care.^{10,177} Evidence suggests that smoking cessation strategies that work in the general population are also effective in people with schizophrenia.^{178,179} Research is needed to identify why smoking is so common among people with schizophrenia.

Alcohol and substance abuse are also common in people with schizophrenia: about 50% have a substance use disorder at some time in their lives, compared with about 15% of the general population.¹⁸ Such individuals are often specifically excluded from clinical trials, meaning that the evidence base for interventions in this population is limited. Alcohol and substance abuse are associated with a poor outcome in terms of relapses, hospitalizations, impaired functioning and physical illness.^{10,180} Cannabis abuse is of particular concern, given that it is a recognized risk factor for the development of schizophrenia, particularly in young individuals.⁶³ For these reasons, reducing substance abuse in people with schizophrenia is a priority.¹⁸ Ideally, substance abuse should be treated using a combination of medication with psychological and behavioural therapies.¹⁸¹ Such treatment should be integrated into psychiatric care, rather than being provided by discrete agencies.¹⁸

What more can be done?

Addressing the limitations of current care

Despite these advances, the management of physical ill health in schizophrenia remains far from ideal.¹⁶⁶ Schizophrenia itself, the medications used, and the patient's lifestyle can all lead to physical illness, particularly weight gain and metabolic disturbances that may contribute to the development of heart disease or diabetes mellitus. Monitoring for risk factors, such as raised cholesterol, and providing treatment if appropriate are important aspects of care, but monitoring often falls short of optimal care.

Different healthcare systems can result in marked variations in care pathways, and thus it may not always be clear who is primarily responsible for a person's

First-person account

"Mother's health plummeted. Lifestyle habits probably contributed to the deterioration ... the diagnoses indicated congestive heart failure along with adult-onset type 2 diabetes. ... Over time she refused the substantive dietary and exercise alterations along with medication refills. Ten months from the first hospitalization, mum went into heart failure; extensive cardiac damage led to her passing at the age of 56."

From Puffer K. *Schizophr Bull* 2010;36:651-4.¹⁸²

physical health. In some countries, the primary care physician is largely responsible for the management of physical illness in patients with schizophrenia, whereas in others the psychiatrist takes the lead. It should be emphasized, however, that all healthcare professionals should be involved in looking for and treating physical illness in patients with schizophrenia. Schizophrenia care requires an integrated approach led by mental health services. As medically trained professionals, psychiatrists should therefore be actively involved in monitoring the physical health of their patients, and equipped with the necessary tools (and training) to measure cardiovascular risk factors. Among these risk factors are obesity (measured by body mass index or waist circumference), high blood pressure, raised blood glucose and disrupted levels of fats in the blood (including raised cholesterol and triglyceride levels). Programmes aimed at promoting a healthy lifestyle have been shown to be beneficial in schizophrenia,^{107,183} and such programmes should be implemented more widely. A welcome trend in this respect is the increasing provision of exercise equipment and other lifestyle measures in schizophrenia clinics.

Decreasing the burden of ill health

The provision of adequate measures to decrease the burden of illness, both mental and physical, among people with schizophrenia will depend on local legislation in each country. In addition, such provision will require effective coordination of services and funding, continuity of health and social care, and synchronization with the criminal justice, benefits and employment systems. Extensive evidence exists that initiatives designed to improve continuity of care can produce a favourable outcome.^{184,185} There is, however, a risk that reorganizations of healthcare systems currently underway in some countries could compromise this continuity.

Addressing the challenges

Healthcare providers and professional organizations

- Ensure that mental health services are able to accept responsibility for their patients' physical health as well as their mental health. This will involve providing mental health facilities with the tools needed to monitor for major risk factors as well as co-ordinating mental health, primary care and other health services to ensure a seamless delivery of care.
- Provide clinical training for psychiatrists to equip them with the knowledge and skills to address patients' physical illnesses where possible, and to refer patients to appropriate specialists if necessary.
- Enhance the teaching of mental health in medical schools to match the public health burden of mental illness.

Clinicians

- Offer targeted smoking cessation interventions, and interventions to address alcohol or substance abuse, to all people with schizophrenia who need them. Interventions aimed at alcohol or substance abuse should form an integral part of mental health care for people with schizophrenia.
- Be attentive to the physical health needs of patients with schizophrenia.

All relevant stakeholders

- Ensure that people with schizophrenia are not prevented from seeking or receiving appropriate care for their physical health, or from having the choice to participate in research, because of prejudice or discrimination.

The world of research

- Ensure that patients with alcohol or substance use disorders should not be excluded from clinical trials of new schizophrenia therapies.
- Ensure that investment in research for mental health matches its global public health burden.

Creating a supportive environment that promotes recovery

Key points

- Creating a free, healthy and supportive environment to promote recovery is central to schizophrenia care.
- Information for people with schizophrenia about the support available for employment, housing and other issues is often lacking.
- People with schizophrenia should receive the benefits to which they are entitled.
- A better understanding of incentives for work and the availability of work opportunities could help in the provision of employment.
- Appropriate resources are needed to ensure that supportive environments can be in place for people with schizophrenia to achieve recovery.
- Employers should take appropriate measures to ensure that the workplace needs of people with schizophrenia are adequately met. Similarly, because schizophrenia often develops during adolescence, educational institutions should also take appropriate measures to accommodate the needs of students with schizophrenia.

The creation of a supportive environment in which people with schizophrenia can work towards recovery is central to schizophrenia care. Indeed, it may be a prerequisite for all other approaches discussed in this report to be effective. A supportive environment is a wide-ranging concept comprising various social and

legal factors (Table 6). At present, however, many people with schizophrenia are not in a supportive environment. Although the importance of the environment in people with mental health has long been recognized, the systematic manipulation or changing of the environment has only been formalized in recent years.¹⁸⁶

Table 6. Factors contributing to a supportive environment.

- Supportive legislation
- Social inclusion
- Employment
- Housing
- Befriending
- Protection against discrimination
- Promotion of competence/capacity
- Use of the least restrictive treatment possible
- Family support and provision of childcare during acute episodes
- Provision of social services

Improving the environment results in better symptom control and function

Attention to environmental needs can pay dividends in helping people with schizophrenia achieve their desired outcomes. Key environmental needs include the ability to perform work tasks adequately, good financial management and secure interpersonal relationships; social function often improves when these needs are addressed.¹⁸⁶ People with schizophrenia, however, often face prejudice and discrimination when seeking employment or training, or when trying to form close relationships.¹³⁷

First-person account

"I enrolled in a programme called Work on Track that helps people with mental illness prepare to re-enter the work force... Although Work on Track had helped me to prepare a good résumé, I had a 5-year gap... I was told to say that it was due to a medical condition but that it was now under control and that it would not be a factor in my job... I never got a second interview."

From Scotti P. *Schizophr Bull* 2009;35:844–6.⁵³

Unemployment rates are substantially higher among people with schizophrenia than in the general population; as we have seen (see page 28), supported employment interventions can produce substantial savings in healthcare and societal costs and can reduce the risk of hospitalization.

Employers should ensure that adequate measures are taken to accommodate the needs of people with schizophrenia in the workplace. Such measures might include:

- allowing flexible scheduling if needed (e.g. if the employee is experiencing drowsiness as a side effect of their schizophrenia medication)
- providing a quiet working environment free from distractions
- allowing the employee to make up for time lost due to doctor's appointments
- permitting home working when appropriate
- dividing large assignments into smaller tasks with clearly achievable goals
- providing support and encouragement.¹⁸⁷

Schizophrenia can adversely affect a person's earning potential in adulthood because it often develops during adolescence and can severely disrupt education. Studies have shown that application of IPS principles to education (supported education) can help young people with schizophrenia to complete their education and find paid employment.^{188,189} Given these positive findings, educational establishments should take appropriate measures, such as those described above, to ensure that the needs of adolescents with schizophrenia are adequately met in the education system.

Homelessness is common among people with schizophrenia;¹⁹⁰ recent data from the US indicate that 35% of people with serious mental disorders, including schizophrenia, have experienced homelessness or have been in jail,¹⁹⁰ while in a European study, 15% of individuals with schizophrenia have been homeless at some time during their illness.²⁰ Furthermore, approximately 22% of homeless single adults and 8% of homeless adults with children have a serious mental illness in the US.¹⁹¹

This represents a major barrier to recovery, because homelessness is associated with an increased duration of hospitalization,¹⁹² diminished function¹⁹³ and other adverse outcomes, such as suicide or self-harm, substance abuse, discrimination and violence.¹⁹⁴

Supported housing for people with schizophrenia has been defined in a number of ways. In the US, the term usually describes specific interventions designed to provide private housing with external support for people with schizophrenia, whereas in Europe it refers to the provision of staffed facilities with on-site support. The latter approach may provide a 'safe haven' for people in need of stability and support, but this may be at the cost of increasing dependence and continuing social exclusion; the effectiveness of such interventions needs to be demonstrated in randomized studies.¹⁹⁵

A critical time intervention (CTI) approach, in which social workers organize support plans and work intensively with the homeless person for 6 months to help them obtain housing, can be effective in helping people with schizophrenia.^{196,197} The CTI approach reduces the time and intensity of stays in very staff-intensive services, such as ACT, and permits transfer of patients to more routine services in the community, if available. Thus, those who receive services from an ACT team are no longer expected to receive ACT services indefinitely.

Contact with the criminal justice system is disproportionately high among people with serious mental disorders such as schizophrenia. Data from the UK suggest that about 8% of the prison population have psychosis and 2% qualify for a formal diagnosis of schizophrenia, compared with 0.5% or less of the general population;²¹ in a more recent study from the US, 46% of people receiving antipsychotic medication had at least one encounter with the criminal justice system.¹⁹⁸ Involvement with the criminal justice system dramatically increases the economic burden associated with schizophrenia – potentially doubling the cost according to a recent US study.¹⁹⁹ In some countries, people with schizophrenia who have committed serious crimes are confined in secure hospital facilities, rather than in prison. This approach can account for a significant proportion of mental healthcare expenditure.²¹ Conversely, a study in the US found that a decrease in the availability of inpatient psychiatric beds was associated with an increased risk of imprisonment for minor charges among people with a severe mental illness, and that this was particularly driven by substance abuse.²⁰⁰

In the US and some other countries, criminal justice diversion programmes have been introduced, aimed at identifying offenders with mental disorders and linking them to health and social services rather than the criminal justice system.^{201,202} Several approaches have been used in such programmes, including mental health courts (MHCs), ACT, intensive case management, intensive psychiatric probation and parole, and residential support;²⁰¹ the most widely used approach in the US is MHCs, which may either divert the defendant before trial or provide treatment-oriented options as an alternative to incarceration after conviction.²⁰³ Diversion programmes have been shown to be beneficial in decreasing incarceration and the risk of re-offending and, in the longer term, hospitalizations; in addition, some studies have reported reductions in symptoms and alcohol or substance abuse, and improvements in quality of life.^{201,202} Clearly, however, it is desirable that people with mental disorders such as schizophrenia do not become involved with the criminal justice system at all: MHCs and other diversion programmes are not a substitute for an adequate mental health system.²⁰³ Moreover, there is only limited information about the cost-effectiveness of diversion programmes: although they may reduce costs to the criminal justice system, treatment costs may increase, at least in the short term.²⁰¹

Communication and education about schizophrenia

Awareness campaigns aimed at the general public can be beneficial in increasing awareness of the nature of schizophrenia and its treatment. The experience in a number of countries worldwide has shown that public campaigns to increase awareness and tackle the discrimination towards schizophrenia can be effective in diminishing negative attitudes towards mental illness.¹⁴ Such programmes include the World Psychiatric Association's *Open the Doors* programme^{204,205} and the *Like Minds* campaign in New Zealand.²⁰⁴ The UK *Time to Change* campaign has recently been shown to have resulted in a positive shift in public attitudes towards mental illness, with patients experiencing less discrimination overall and when looking for a job.²⁰⁶

Mental Health First Aid is an example of an internationally recognized evidence-based training practice that educates the public about mental illnesses, including schizophrenia and substance abuse disorders.²⁰⁷ People around the world have learned strategies to recognize, react and respond appropriately to provide help to individuals who are developing a mental health problem or who are facing a mental health crisis.

Importantly, educational campaigns should be a continuing process: single campaigns usually do not have much effect, and sometimes result in disappointment for people with schizophrenia and their families once the campaign is completed.²⁰⁴ A study in Norway found that patients were less likely to seek help in the absence of such campaigns, or when campaigns were stopped, resulting in a longer duration of untreated psychosis (Figure 7) and more severe symptoms.²⁰⁸

The role of advocacy and peer-led groups: People who are affected by schizophrenia, both the patients themselves and those who care for them, can offer powerful and eloquent insights into the condition. As a result, advocacy groups, peer-led 'self-help' groups, and volunteer groups that work with their peers who are mentally ill are having an increasingly important influence on the care of people with schizophrenia. (It is important to recognize, however, that the aims of self-help groups may not necessarily coincide with those of advocacy groups.)

Advocacy groups represent the interests of people affected by mental illness, and promote their rights. They speak out in support of those affected by mental disorders, provide information and education, campaign

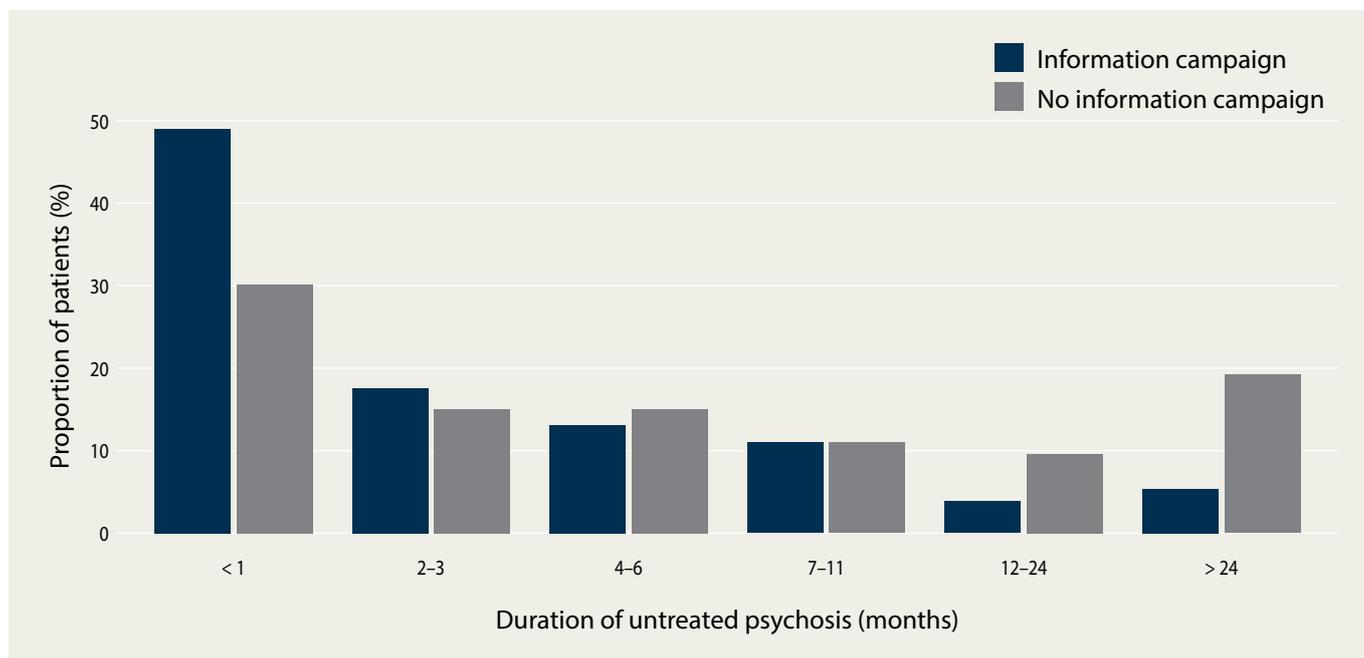


Figure 7. Intensive information campaigns have been shown to have a beneficial effect on the duration of untreated psychosis.²⁰⁸

The figure shows the proportion of patients with a given duration of untreated psychosis in the presence or absence of information campaigns. People are more likely to seek help when information campaigns are in progress, so the duration of untreated psychosis is shorter. Figure adapted from Joa *et al. Schizophr Bull* 2008;34:466–72.

against stigma and discrimination, and much more. National or international schizophrenia advocacy groups include EUFAMI in Europe, GAMIAN in the US and Europe, and NAMI in the US. In addition, local networks or groups have an important role to play, and are greatly appreciated by people with schizophrenia. At an individual level, clinicians treating people with schizophrenia can also be powerful and influential advocates for improved care.

Barriers to the creation of a supportive environment

Inconsistent mental health policy

Even in Europe, where many countries have specific mental health legislation to cover areas such as housing or employment, many people with mental disorders may not be adequately protected. For example, 81% of the total population of Europe live in countries that currently have such legislation, but only 38 of 52 countries have mental health policies that set out the priority given to mental health (Table 7).²⁰⁹

A problem with benefits

While social security benefits are clearly essential for people with schizophrenia who are temporarily unable

to work, the benefit system can actually make it difficult for them to find employment; even with supported employment measures, many find it difficult to come off benefits.^{210,211} Work can be stressful and, if a person is only able to work for a few hours each week, it may actually be less lucrative than remaining on benefits. Similarly, older people with schizophrenia receiving a pension have little incentive to seek employment.

The ‘social paradox’

A ‘social paradox’ exists in some countries, whereby individuals are concerned about losing disability and other benefits if they present themselves for employment. For example, qualifying for disability benefits from the Social Security Administration in the US provides eligibility for health insurance benefits; hence, beneficiaries who return to work and give up their disability income support risk losing their health insurance. The passage of the recent Affordable Care Act has provided alternatives to disability status for gaining health insurance benefits. It is hoped that this reform will help to reverse the incentives that led to the finding that about 96% of people with schizophrenia who start to receive social security disability benefits remain on them permanently.^{212,213} Similar situations have been reported in other countries.

Table 7. Regions of the world with dedicated mental health policy.²⁰⁹

Region	Countries with mental health policy	Population coverage, %
Africa	19/45	60.1
Americas	18/32	88.1
Eastern Mediterranean	13/19	84.8
Europe	38/52	90.8
South-East Asia	7/10	31.8
Western Pacific	15/26	94.9
World	110/184	71.5

Complications of the benefit system

Information for patients about the support available for employment, housing or other issues is often lacking. Even when information is available, it may be difficult to access or use, especially if literacy is an issue. This is of particular concern among immigrant communities, where cultural differences and language barriers often hinder access to services.¹³ The lack of information can also cause delays in benefits being received. One study in France, in which more than half of the participants became unemployed following the onset of schizophrenia, demonstrated a median delay of 4 years between the onset of the disorder and the first application for disability benefits; in many cases, the financial hardship caused by this delay exacerbated the social consequences of their schizophrenia.²¹⁴ Marked differences exist among countries in their attitude to job provision: in some countries, this is regarded as a governmental responsibility, whereas in others a free-market approach prevails.

What more can be done?

Creative approaches are needed to change public attitudes to schizophrenia, and to end the discrimination faced by many people with schizophrenia when seeking employment or training.

Improving the benefit system

The rights of people with schizophrenia are enshrined in the 2006 UN Convention on the Rights of Persons with Disabilities²¹⁵ and the forthcoming WHO Mental Health Action Plan.²⁵ In the UK, however, where mental health

problems are associated with long periods of unemployment, benefit claimants with a mental health problem are less likely to be successful than those without.¹⁹ This situation contrasts with that in Australia, where there is an effective 'one-stop' system for identifying claimants with mental health problems.¹⁹

More should be done to ensure that people with schizophrenia receive the benefits to which they are entitled. Importantly, a recent review conducted for the US Social Security Administration has shown that more than 80% of people with schizophrenia meet the criteria for disability benefits; furthermore, of those whose applications were initially unsuccessful, many actually met the criteria for benefits, but were simply unable to cope with the appeal system.²¹⁶

A better understanding – across cultures and across social insurance systems – of incentives for work and the availability of work opportunities could help in the provision of employment for people with schizophrenia. In Belgium, people with mental disorders who lose their job generally receive unemployment benefits rather than disability benefits; they thus remain in close contact with the labour market, which facilitates their re-employment.²¹⁷ Importantly, voluntary employment that offers a 'worthwhile day' may benefit the patient, even if paid employment is not an option.

Supporting education campaigns

Education campaigns should be directed towards the general public, in order to change negative perceptions about mental illness; however, successful psychoeducation campaigns will require substantial

resources. Multimedia campaigns are needed that include a social marketing approach, similar to those employed to promote smoking cessation and to prevent acquired immunodeficiency syndrome and other health-related issues.¹⁴ The effectiveness of such campaigns can be enhanced by using ‘audience segmentation’, whereby specific and culturally appropriate messages are delivered to defined segments of the target audience.¹⁴

Encouraging early diagnosis and intervention

Initiatives aimed at creating a supportive environment to promote recovery are tertiary prevention measures in people with established schizophrenia. Much can still be done in secondary prevention, however, to reduce the potential impact of the disorder by early diagnosis and intervention. Early intervention can reduce the number and duration of hospitalizations over 1–2 years after a first episode of psychosis,^{41,42} although the impact is less clear during the longer term.^{13,40} Importantly, early intervention services have been shown to produce

significant savings in healthcare and societal costs,³⁹ through preventing hospitalizations, increasing employment rates and decreasing involvement with the criminal justice system.²¹

Addressing the challenges

Clinicians

- Engage with policy makers and other relevant stakeholders to recognize that a supportive environment is essential for recovery in schizophrenia, and encourage the use of cost-effective measures to achieve this.

Healthcare providers and other relevant agencies

- Ensure that the needs of people from ethnic minorities who have schizophrenia are identified and addressed in a culturally appropriate manner.

Conclusions

- **Better lives for people living with schizophrenia:** this is a reachable goal! We have come a long way towards achieving this in recent years, but much can (and should) still be done. Successful care requires an **integrated team approach**, involving psychiatrists, a range of healthcare professionals, social care providers and other external agencies. It also involves collaboration with people with schizophrenia, their families and other sources of support. For private healthcare systems, such a team approach will require careful alignment of reimbursement mechanisms to support high-quality care.
- A second prerequisite for successful care is **adequate funding** – at least equivalent to that for other medical conditions such as cancer and heart disease – for research, treatment, services and teaching of future mental healthcare professionals. At present, the extent to which potentially effective psychosocial therapies are funded by public healthcare systems varies across countries; hence, many patients are denied treatment. More support is also needed for independent studies of potentially beneficial interventions.
- Implementation of the recommendations set out at the front of this report, and in each chapter, will require **engagement by every stakeholder:** from policy makers at every level, from clinicians and from public agencies. With commitment from all, change can be achieved.

References

1. World Health Organization. The global burden of disease: 2004 update. 2008. Available from: http://www.who.int/healthinfo/global_burden_disease/2004_report_update/en/ (Accessed 30 August 2013).
2. McCrone P, Dhanasiri S, Patel A, Knapp M, Lawton-Smith S. The King's Fund: Paying the price: the cost of mental health care in England to 2026. 2008. Available from: http://www.kingsfund.org.uk/sites/files/kf/Paying-the-Price-the-cost-of-mental-health-care-England-2026-McCrone-Dhanasiri-Patel-Knapp-Lawton-Smith-Kings-Fund-May-2008_0.pdf (Accessed 30 August 2013).
3. Murray CJL, Lopez AD. Burden of disease. A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Cambridge, MA: Harvard School of Public Health, on behalf of the World Health Organization and the World Bank, 1996.
4. United Nations. United Nations General Assembly 46/119: The protection of persons with mental illness and the improvement of mental health care. 1991. Available from: <http://www.un.org/documents/ga/res/46/a46r119.htm> (Accessed 30 August 2013).
5. Harding CM, Brooks GW, Ashikaga T, Strauss JS, Breier A. The Vermont longitudinal study of persons with severe mental illness, II: long-term outcome of subjects who retrospectively met DSM-III criteria for schizophrenia. *Am J Psychiatry* 1987;144:727–35.
6. Bellack AS. Scientific and consumer models of recovery in schizophrenia: concordance, contrasts, and implications. *Schizophr Bull* 2006;32:432–42.
7. Lambert M, Naber D, Schacht A *et al*. Rates and predictors of remission and recovery during 3 years in 392 never-treated patients with schizophrenia. *Acta Psychiatr Scand* 2008;118:220–9.
8. Leucht S, Tardy M, Komossa K *et al*. Maintenance treatment with antipsychotic drugs for schizophrenia. *Cochrane Database Syst Rev* 2012;5:CD008016.
9. Crocq MA, Naber D, Lader MH *et al*. Suicide attempts in a prospective cohort of patients with schizophrenia treated with sertindole or risperidone. *Eur Neuropsychopharmacol* 2010;20:829–38.
10. Barnes TR. Evidence-based guidelines for the pharmacological treatment of schizophrenia: recommendations from the British Association for Psychopharmacology. *J Psychopharmacol* 2011;25:567–620.
11. National Institute for Health and Clinical Excellence. Schizophrenia: core interventions in the treatment and management of schizophrenia in adults in primary and secondary care (updated edition). 2010. Available from: <http://www.nice.org.uk/nicemedia/live/11786/43607/43607.pdf> (Accessed 30 August 2013).
12. Pitschel-Walz G, Leucht S, Bauml J, Kissling W, Engel RR. The effect of family interventions on relapse and rehospitalization in schizophrenia – a meta-analysis. *Schizophr Bull* 2001;27:73–92.
13. The Schizophrenia Commission. The abandoned illness: a report from the Schizophrenia Commission. 2012. London: Rethink Mental Illness. Available from: <http://www.schizophreniacommission.org.uk/the-report/> (Accessed 30 August 2013).
14. Leff JP, Warner R. Social inclusion of people with mental illness. Cambridge, UK; New York: Cambridge University Press, 2006.
15. Tiihonen J, Lonnqvist J, Wahlbeck K *et al*. 11-year follow-up of mortality in patients with schizophrenia: a population-based cohort study (FIN11 study). *Lancet* 2009;374:620–7.
16. Chang CK, Hayes RD, Perera G *et al*. Life expectancy at birth for people with serious mental illness and other major disorders from a secondary mental health care case register in London. *PLoS One* 2011;6:e19590.
17. Thornicroft G. Physical health disparities and mental illness: the scandal of premature mortality. *Br J Psychiatry* 2011;199:441–2.
18. Mueser KT, Deavers F, Penn DL, Cassisi J. Psychosocial treatments for schizophrenia. *Annu Rev Clin Psychol* 2013;9:465–97.
19. Organisation for Economic Co-operation and Development. Sick on the job? Myths and realities about mental health and work. 2011. Available from: <http://www.oecd.org/health/theoecdmentalhealthandworkproject.htm> (Accessed 30 August 2013).
20. Bebbington PE, Angermeyer M, Azorin JM *et al*. The European Schizophrenia Cohort (EuroSC): a naturalistic prognostic and economic study. *Soc Psychiatry Psychiatr Epidemiol* 2005;40:707–17.
21. Andrew A, Knapp M, McCrone P, Parsonage M, Trachtenberg M. Effective interventions in schizophrenia: the economic case. A report prepared for the Schizophrenia Commission. 2012. London: Rethink Mental Illness. Available from: <http://www2.lse.ac.uk/LSEHealthAndSocialCare/pdf/LSE-economic-report-FINAL-12-Nov.pdf> (Accessed 30 August 2013).
22. Wittchen HU, Jacobi F, Rehm J *et al*. The size and burden of mental disorders and other disorders of the brain in Europe 2010. *Eur Neuropsychopharmacol* 2011;21:655–79.
23. National Institute of Mental Health. The numbers count: mental disorders in America. 2013. Available from: <http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america/index.shtml#Schizophrenia> (Accessed 30 August 2013).
24. Schizophrenia.com. Schizophrenia facts and statistics. 2013. Available from: <http://www.schizophrenia.com/szfacts.htm> (Accessed 30 August 2013).
25. World Health Organization. Comprehensive mental health action plan 2013–2020. 2013. Available from: http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R8-en.pdf (Accessed 30 August 2013).
26. Becker AE, Kleinman A. Mental health and the global agenda. *N Engl J Med* 2013;369:66–73.
27. Warner R. Recovery from schizophrenia and the recovery model. *Curr Opin Psychiatry* 2009;22:374–80.
28. Crump C, Sundquist K, Winkleby MA, Sundquist J. Mental disorders and vulnerability to homicidal death: Swedish nationwide cohort study. *BMJ* 2013;346:f557.
29. National Alliance on Mental Illness. Schizophrenia: public attitudes, personal needs. 2008. Available from: <http://www.nami.org/SchizophreniaSurvey/SchizeExecSummary.pdf> (Accessed 30 August 2013).
30. Crump C, Winkleby MA, Sundquist K, Sundquist J. Comorbidities and mortality in persons with schizophrenia: a Swedish national cohort study. *Am J Psychiatry* 2013;170:324–33.
31. Gustavsson A, Svensson M, Jacobi F *et al*. Cost of disorders of the brain in Europe 2010. *Eur Neuropsychopharmacol* 2011;21:718–79.
32. Wu EQ, Birnbaum HG, Shi L *et al*. The economic burden of schizophrenia in the United States in 2002. *J Clin Psychiatry* 2005;66:1122–9.
33. Hogan P, Dall T, Nikolov P. Economic costs of diabetes in the US in 2002. *Diabetes Care* 2003;26:917–32.
34. Knapp M. Mental health in an age of austerity. *Evid Based Ment Health* 2012;15:54–5.
35. Lewis SW, Davies L, Jones PB *et al*. Randomised controlled trials of conventional antipsychotic versus new atypical drugs, and new atypical drugs versus clozapine, in people with schizophrenia responding poorly to, or intolerant of, current drug treatment. *Health Technol Assess* 2006;10:iii–iv, ix–xi, 1–165.
36. Zeidler J, Slawik L, Fleischmann J, Greiner W. The costs of schizophrenia and predictors of hospitalisation from the statutory health insurance perspective. *Health Econ Rev* 2012;2:9.
37. Falagas ME, Fragoulis KN, Karydis I. A comparative study on the cost of new antibiotics and drugs of other therapeutic categories. *PLoS One* 2006;1:e11.
38. Department of Health. Health and Social Care Act 2012. 2012. Available from: <https://www.gov.uk/government/publications/health-and-social-care-act-2012-fact-sheets> (Accessed 19 August 2013).

39. Park A, McCrone P, Knapp M. Early intervention for first-episode psychosis: broadening the scope of economic estimates. *Early Intervention in Psychiatry* 2014. In press.
40. Gafoor R, Nitsch D, McCrone P *et al*. Effect of early intervention on 5-year outcome in non-affective psychosis. *Br J Psychiatry* 2010;196:372–6.
41. Petersen L, Jeppesen P, Thorup A *et al*. A randomised multicentre trial of integrated versus standard treatment for patients with a first episode of psychotic illness. *BMJ* 2005;331:602.
42. Craig TK, Garety P, Power P *et al*. The Lambeth Early Onset (LEO) Team: randomised controlled trial of the effectiveness of specialised care for early psychosis. *BMJ* 2004;329:1067.
43. Lieberman JA, Drake RE, Sederer LI *et al*. Science and recovery in schizophrenia. *Psychiatr Serv* 2008;59:487–96.
44. Hopper K. Rethinking social recovery in schizophrenia: what a capabilities approach might offer. *Soc Sci Med* 2007;65:868–79.
45. Hopper K, Harrison G, Janca A, Sartorius N, editors. Recovery from schizophrenia. An international perspective. A report from the WHO collaborative project, The International Study of Schizophrenia. Oxford: Oxford University Press, 2007.
46. Zipursky RB, Reilly TJ, Murray RM. The myth of schizophrenia as a progressive brain disease. *Schizophr Bull* 2013;39:1363–72.
47. Roe D, Rudnick A, Gill KJ. The concept of “being in recovery”. *Psychiatr Rehabil J* 2007;30:171–3.
48. Andresen R, Caputi P, Oades L. Development of a short measure of psychological recovery in serious mental illness: the STORI-30. *Australas Psychiatry* 2013;21:267–70.
49. Malm U, Ivarsson B, Allebeck P, Falloon IR. Integrated care in schizophrenia: a 2-year randomized controlled study of two community-based treatment programs. *Acta Psychiatr Scand* 2003;107:415–23.
50. Lloyd C, King R, Moore L. Subjective and objective indicators of recovery in severe mental illness: a cross-sectional study. *Int J Soc Psychiatr* 2010;56:220–9.
51. Netten A, Jones K, Knapp M *et al*. Personalisation through individual budgets: does it work and for whom? *Brit J Soc Work* 2012;42:1556–73.
52. Substance Abuse and Mental Health Services Administration (SAMHSA). SAMHSA announces a working definition of “recovery” from mental disorders and substance use disorders. 2011. Available from: <http://www.samhsa.gov/newsroom/advisories/1112223420.aspx> (Accessed 30 August 2013).
53. Scotti P. Recovery as discovery. *Schizophr Bull* 2009;35:844–6.
54. Harrow M, Grossman LS, Jobe TH, Herbener ES. Do patients with schizophrenia ever show periods of recovery? A 15-year multi-follow-up study. *Schizophr Bull* 2005;31:723–34.
55. Harrison G, Hopper K, Craig T *et al*. Recovery from psychotic illness: a 15- and 25-year international follow-up study. *Br J Psychiatry* 2001;178:506–17.
56. Harrow M, Jobe TH. Does long-term treatment of schizophrenia with antipsychotic medications facilitate recovery? *Schizophr Bull* 2013;39:962–5.
57. Harrow M, Jobe TH, Faull RN. Do all schizophrenia patients need antipsychotic treatment continuously throughout their lifetime? A 20-year longitudinal study. *Psychol Med* 2012;42:2145–55.
58. Kern RS, Glynn SM, Horan WP, Marder SR. Psychosocial treatments to promote functional recovery in schizophrenia. *Schizophr Bull* 2009;35:347–61.
59. Buchanan RW, Kreyenbuhl J, Kelly DL *et al*. The 2009 schizophrenia PORT psychopharmacological treatment recommendations and summary statements. *Schizophr Bull* 2010;36:71–93.
60. Ross CA, Margolis RL, Reading SA, Pletnikov M, Coyle JT. Neurobiology of schizophrenia. *Neuron* 2006;52:139–53.
61. Arango C, Rapado-Castro M, Reig S *et al*. Progressive brain changes in children and adolescents with first-episode psychosis. *Arch Gen Psychiatry* 2012;69:16–26.
62. Henquet C, Murray R, Linszen D, van Os J. The environment and schizophrenia: the role of cannabis use. *Schizophr Bull* 2005;31:608–12.
63. Picchioni M, Murray R. Clinical review: schizophrenia. *BMJ* 2007;335:91–5.
64. Cardno A, Marshall E, Coid B *et al*. Heritability estimates for psychotic disorders. *Arch Gen Psychiatry* 1999;56:162–8.
65. Remington G, Foussias G, Agid O. Progress in defining optimal treatment outcome in schizophrenia. *CNS Drugs* 2010;24:9–20.
66. Miyamoto S, Miyake N, Jarskog LF, Fleischhacker WW, Lieberman JA. Pharmacological treatment of schizophrenia: a critical review of the pharmacology and clinical effects of current and future therapeutic agents. *Mol Psychiatry* 2012;17:1206–27.
67. Shepherd M, Sartorius N. Non-specific aspects of treatment. Bern: Hans Huber, 1989.
68. Leucht S, Corves C, Arbter D *et al*. Second-generation versus first-generation antipsychotic drugs for schizophrenia: a meta-analysis. *Lancet* 2009;373:31–41.
69. Lieberman JA, Stroup TS, McEvoy JP *et al*. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *N Engl J Med* 2005;353:1209–23.
70. Jones PB, Barnes TR, Davies L *et al*. Randomized controlled trial of the effect on quality of life of second- vs first-generation antipsychotic drugs in schizophrenia: Cost Utility of the Latest Antipsychotic Drugs in Schizophrenia Study (CULASS 1). *Arch Gen Psychiatry* 2006;63:1079–87.
71. Kahn RS, Fleischhacker WW, Boter H *et al*. Effectiveness of antipsychotic drugs in first-episode schizophrenia and schizophreniform disorder: an open randomised clinical trial. *Lancet* 2008;371:1085–97.
72. Leucht S, Komossa K, Rummel-Kluge C *et al*. A meta-analysis of head-to-head comparisons of second-generation antipsychotics in the treatment of schizophrenia. *Am J Psychiatry* 2009;166:152–63.
73. Loebel AD, Lieberman JA, Alvir JM *et al*. Duration of psychosis and outcome in first-episode schizophrenia. *Am J Psychiatry* 1992;149:1183–8.
74. Calton T, Ferriter M, Huband N, Spandler H. A systematic review of the Soteria paradigm for the treatment of people diagnosed with schizophrenia. *Schizophr Bull* 2008;34:181–92.
75. Barnes TR, Leeson VC, Mutsatsa SH *et al*. Duration of untreated psychosis and social function: 1-year follow-up study of first-episode schizophrenia. *Br J Psychiatry* 2008;193:203–9.
76. Brady M. Beating the odds – nothing is impossible, it’s just a road less travelled. *Schizophr Bull* 2008;34:204–11.
77. Davis JM. Maintenance therapy and the natural course of schizophrenia. *J Clin Psychiatry* 1985;46:18–21.
78. Emsley R, Chiliza B, Asmal L, Harvey BH. The nature of relapse in schizophrenia. *BMC Psychiatry* 2013;13:50.
79. Rosenheck R, Tekell J, Peters J *et al*. Does participation in psychosocial treatment augment the benefit of clozapine? Department of Veterans Affairs Cooperative Study Group on Clozapine in Refractory Schizophrenia. *Arch Gen Psychiatry* 1998;55:618–25.
80. Swanson JW, Swartz MS, Van Dorn RA *et al*. Comparison of antipsychotic medication effects on reducing violence in people with schizophrenia. *Br J Psychiatry* 2008;193:37–43.
81. Arango C, Bombin I, Gonzalez-Salvador T, Garcia-Cabeza I, Bobes J. Randomised clinical trial comparing oral versus depot formulations of zuclopenthixol in patients with schizophrenia and previous violence. *Eur Psychiatry* 2006;21:34–40.
82. Meltzer HY, Alphas L, Green AI *et al*. Clozapine treatment for suicidality in schizophrenia: International Suicide Prevention Trial (InterSePT). *Arch Gen Psychiatry* 2003;60:82–91.
83. Hor K, Taylor M. Suicide and schizophrenia: a systematic review of rates and risk factors. *J Psychopharmacol* 2010;24:81–90.
84. Hafner H, Riecher-Rössler A, Maurer K, Fatkenheuer B, Löffler W. First onset and early symptomatology of schizophrenia. A chapter of epidemiological and neurobiological research into age and sex differences. *Eur Arch Psychiatry Clin Neurosci* 1992;242:109–18.
85. Hofer A, Baumgartner S, Edlinger M *et al*. Patient outcomes in schizophrenia I: correlates with sociodemographic variables, psychopathology, and side effects. *Eur Psychiatry* 2005;20:386–94.
86. Rosenheck R, Leslie D, Keefe R *et al*. Barriers to employment for people with schizophrenia. *Am J Psychiatry* 2006;163:411–17.

87. Green MF. What are the functional consequences of neurocognitive deficits in schizophrenia? *Am J Psychiatry* 1996;153:321–30.
88. Goff DC, Hill M, Barch D. The treatment of cognitive impairment in schizophrenia. *Pharmacol Biochem Behav* 2011;99:245–53.
89. Green MF, Kern RS, Braff DL, Mintz J. Neurocognitive deficits and functional outcome in schizophrenia: are we measuring the “right stuff”? *Schizophr Bull* 2000;26:119–36.
90. Davidson M, Galderisi S, Weiser M *et al*. Cognitive effects of antipsychotic drugs in first-episode schizophrenia and schizophreniform disorder: a randomized, open-label clinical trial (EUFEST). *Am J Psychiatry* 2009;166:675–82.
91. Rummel-Kluge C, Komossa K, Schwarz S *et al*. Head-to-head comparisons of metabolic side effects of second generation antipsychotics in the treatment of schizophrenia: a systematic review and meta-analysis. *Schizophr Res* 2010;123:225–33.
92. Rickelman BL. Anosognosia in individuals with schizophrenia: toward recovery of insight. *Issues Ment Health Nurs* 2004;25:227–42.
93. Sajatovic M, Jenkins JH. Is antipsychotic medication stigmatizing for people with mental illness? *Int Rev Psychiatry* 2007;19:107–12.
94. Snyder K. Kurt Snyder’s personal experience with schizophrenia. *Schizophr Bull* 2006;32:209–11.
95. Weiden PJ. Understanding and addressing adherence issues in schizophrenia: from theory to practice. *J Clin Psychiatry* 2007;68 Suppl 14:14–19.
96. Morken G, Widen JH, Grawe RW. Non-adherence to antipsychotic medication, relapse and rehospitalisation in recent-onset schizophrenia. *BMC Psychiatry* 2008;8:32.
97. Ascher-Svanum H, Faries DE, Zhu B *et al*. Medication adherence and long-term functional outcomes in the treatment of schizophrenia in usual care. *J Clin Psychiatry* 2006;67:453–60.
98. Leucht S, Heres S. Epidemiology, clinical consequences, and psychosocial treatment of nonadherence in schizophrenia. *J Clin Psychiatry* 2006;67 Suppl 5:3–8.
99. Wiersma D, Nienhuis FJ, Slooff CJ, Giel R. Natural course of schizophrenic disorders: a 15-year followup of a Dutch incidence cohort. *Schizophr Bull* 1998;24:75–85.
100. Chakos M, Lieberman J, Hoffman E, Bradford D, Sheitman B. Effectiveness of second-generation antipsychotics in patients with treatment-resistant schizophrenia: a review and meta-analysis of randomized trials. *Am J Psychiatry* 2001;158:518–26.
101. Lewis SW, Barnes TR, Davies L *et al*. Randomized controlled trial of effect of prescription of clozapine versus other second-generation antipsychotic drugs in resistant schizophrenia. *Schizophr Bull* 2006;32:715–23.
102. Mortimer AM, Singh P, Shepherd CJ, Puthirayackal J. Clozapine for treatment-resistant schizophrenia: National Institute of Clinical Excellence (NICE) guidance in the real world. *Clin Schizophr Relat Psychoses* 2010;4:49–55.
103. Taylor DM, Young C, Paton C. Prior antipsychotic prescribing in patients currently receiving clozapine: a case note review. *J Clin Psychiatry* 2003;64:30–4.
104. Nielsen J, Dahm M, Lublin H, Taylor D. Psychiatrists’ attitude towards and knowledge of clozapine treatment. *J Psychopharmacol* 2010;24:965–71.
105. Kishimoto T, Robenzadeh A, Leucht C *et al*. Long-acting injectable vs oral antipsychotics for relapse prevention in schizophrenia: a meta-analysis of randomized trials. *Schizophr Bull* 2014;40:192–213.
106. Global Alliance of Mental Illness Advocacy Networks-Europe. Adherence to treatment: the patient’s view. 2012. Available from: www.gamian.eu (Accessed 30 August 2013).
107. Dixon LB, Dickerson F, Bellack AS *et al*. The 2009 schizophrenia PORT psychosocial treatment recommendations and summary statements. *Schizophr Bull* 2010;36:48–70.
108. Kurtz MM, Mueser KT. A meta-analysis of controlled research on social skills training for schizophrenia. *J Consult Clin Psychol* 2008;76:491–504.
109. Coldwell CM, Bender WS. The effectiveness of assertive community treatment for homeless populations with severe mental illness: a meta-analysis. *Am J Psychiatry* 2007;164:393–9.
110. Nelson G, Aubry T, Lafrance A. A review of the literature on the effectiveness of housing and support, assertive community treatment, and intensive case management interventions for persons with mental illness who have been homeless. *Am J Orthopsychiatry* 2007;77:350–61.
111. Aagaard J, Muller-Nielsen K. Clinical outcome of assertive community treatment (ACT) in a rural area in Denmark: a case-control study with a 2-year follow-up. *Nord J Psychiatry* 2011;65:299–305.
112. Karow A, Reimer J, König HH *et al*. Cost-effectiveness of 12-month therapeutic assertive community treatment as part of integrated care versus standard care in patients with schizophrenia treated with quetiapine immediate release (ACCESS trial). *J Clin Psychiatry* 2012;73:e402–8.
113. van Vugt MD, Kroon H, Delespaul PA *et al*. Assertive community treatment in the Netherlands: outcome and model fidelity. *Can J Psychiatry* 2011;56:154–60.
114. Latimer EA. Economic impacts of assertive community treatment: a review of the literature. *Can J Psychiatry* 1999;44:443–54.
115. Mueser KT, Bond GR, Drake RE, Resnick SG. Models of community care for severe mental illness: a review of research on case management. *Schizophr Bull* 1998;24:37–74.
116. Fiander M, Burns T, McHugo GJ, Drake RE. Assertive community treatment across the Atlantic: comparison of model fidelity in the UK and USA. *Br J Psychiatry* 2003;182:248–54.
117. Wykes T, Steel C, Everitt B, Tarrrier N. Cognitive behavior therapy for schizophrenia: effect sizes, clinical models, and methodological rigor. *Schizophr Bull* 2008;34:523–37.
118. Jones C, Hacker D, Cormac I, Meaden A, Irving CB. Cognitive behaviour therapy versus other psychosocial treatments for schizophrenia. *Cochrane Database Syst Rev* 2012;4:CD008712.
119. Wykes T, Huddy V, Cellard C, McGurk SR, Czobor P. A meta-analysis of cognitive remediation for schizophrenia: methodology and effect sizes. *Am J Psychiatry* 2011;168:472–85.
120. McGurk SR, Twamley EW, Sitzer DI, McHugo GJ, Mueser KT. A meta-analysis of cognitive remediation in schizophrenia. *Am J Psychiatry* 2007;164:1791–802.
121. Eack SM, Hogarty GE, Cho RY *et al*. Neuroprotective effects of cognitive enhancement therapy against gray matter loss in early schizophrenia: results from a 2-year randomized controlled trial. *Arch Gen Psychiatry* 2010;67:674–82.
122. Penadés R, Pujol N, Catalán R *et al*. Brain effects of cognitive remediation therapy in schizophrenia: a structural and functional neuroimaging study. *Biol Psychiatry* 2013;73:1015–23.
123. Patel A, Knapp M, Romeo R *et al*. Cognitive remediation therapy in schizophrenia: cost-effectiveness analysis. *Schizophr Res* 2010;120: 217–24.
124. Pharoah FM, Rathbone J, Mari JJ, Streiner D. Family intervention for schizophrenia. *Cochrane Database Syst Rev* 2003;CD000088.
125. Moller M, Murphy M. The three R’s rehabilitation program: a prevention approach for the management of relapse symptoms associated with psychiatric diagnoses. *Psychiatr Rehabil J* 1997;20:42–8.
126. Sellwood W, Wittkowski A, Tarrrier N, Barrowclough C. Needs-based cognitive-behavioural family intervention for patients suffering from schizophrenia: 5-year follow-up of a randomized controlled effectiveness trial. *Acta Psychiatr Scand* 2007;116:447–52.
127. Leff J, Berkowitz R, Shavit N *et al*. A trial of family therapy versus a relatives’ group for schizophrenia. Two-year follow-up. *Br J Psychiatry* 1990;157:571–7.
128. Goldstein MJ. Psycho-education and family treatment related to the phase of a psychotic disorder. *Int Clin Psychopharmacol* 1996;11 Suppl 2:77–83.
129. Sellwood W, Barrowclough C, Tarrrier N *et al*. Needs-based cognitive-behavioural family intervention for carers of patients suffering from schizophrenia: 12-month follow-up. *Acta Psychiatr Scand* 2001;104: 346–55.
130. Dixon LB, Lucksted A, Medoff DR *et al*. Outcomes of a randomized study of a peer-taught Family-to-Family Education Program for mental illness. *Psychiatr Serv* 2011;62:591–7.

131. McFarlane WR. Multifamily groups in the treatment of severe psychiatric disorders. New York: Guilford Press, 2002.
132. Breitborde NJ, Moreno FA, Mai-Dixon N *et al*. Multifamily group psychoeducation and cognitive remediation for first-episode psychosis: a randomized controlled trial. *BMC Psychiatry* 2011;11:9.
133. McFarlane WR, Link B, Dushay R, Marchal J, Crilly J. Psychoeducational multiple family groups: four-year relapse outcome in schizophrenia. *Fam Process* 1995;34:127–44.
134. McFarlane WR, Lukens E, Link B *et al*. Multiple-family groups and psychoeducation in the treatment of schizophrenia. *Arch Gen Psychiatry* 1995;52:679–87.
135. Uco A, Brohan E, Rose D *et al*. Anticipated discrimination among people with schizophrenia. *Acta Psychiatr Scand* 2012;125:77–83.
136. Lasalvia A, Zoppei S, Van Bortel T *et al*. Global pattern of experienced and anticipated discrimination reported by people with major depressive disorder: a cross-sectional survey. *Lancet* 2013;381:55–62.
137. Thornicroft G, Brohan E, Rose D, Sartorius N, Leese M. Global pattern of experienced and anticipated discrimination against people with schizophrenia: a cross-sectional survey. *Lancet* 2009;373:408–15.
138. Simpson EL, House AO. Involving users in the delivery and evaluation of mental health services: systematic review. *BMJ* 2002;325:1265.
139. Ahmed AO, Doane NJ, Mabe PA *et al*. Peers and peer-led interventions for people with schizophrenia. *Psychiatr Clin North Am* 2012;35:699–715.
140. Kessler RC, Mickelson KD, Zhao S. Patterns and correlates of self-help group membership in the United States. *Soc Policy* 1997;27:27–46.
141. Rummel-Kluge C, Stiegler-Kotzor M, Schwarz C, Hansen WP, Kissling W. Peer-counseling in schizophrenia: patients consult patients. *Patient Educ Couns* 2008;70:357–62.
142. Cook JA, Copeland ME, Jonikas JA *et al*. Results of a randomized controlled trial of mental illness self-management using Wellness Recovery Action Planning. *Schizophr Bull* 2012;38:881–91.
143. Burti L, Amaddeo F, Ambrosi M *et al*. Does additional care provided by a consumer self-help group improve psychiatric outcome? A study in an Italian community-based psychiatric service. *Community Ment Health J* 2005;41:705–20.
144. Trachtenberg M, Parsonage M. Peer support in mental health care: is it good value for money? 2013. Available from: <http://blogs.lse.ac.uk/healthandsocialcare/2013/07/15/peer-support-in-mental-health-care-is-it-good-value-for-money/> (Accessed 30 August 2013).
145. Pfammatter M, Junghan UM, Brenner HD. Efficacy of psychological therapy in schizophrenia: conclusions from meta-analyses. *Schizophr Bull* 2006;32 Suppl 1:S64–80.
146. Silverstein SM, Spaulding WD, Menditto AA *et al*. Attention shaping: a reward-based learning method to enhance skills training outcomes in schizophrenia. *Schizophr Bull* 2009;35:222–32.
147. Bevan S, Gulliford J, Steadman K, Taskila T, Thomas R, Moise A. Working with schizophrenia: pathways to employment, recovery & inclusion. 2013. Available from: <http://www.theworkfoundation.com/Reports/330/Working-with-Schizophrenia-Pathways-to-employment-recovery-and-inclusion> (Accessed 30 August 2013).
148. Drake RE, Becker DR. Why not implement supported employment? *Psychiatr Serv* 2011;62:1251.
149. Bond GR, Drake RE, Becker DR. Generalizability of the Individual Placement and Support (IPS) model of supported employment outside the US. *World Psychiatry* 2012;11:32–9.
150. Knapp M, Patel A, Curran C *et al*. Supported employment: cost-effectiveness across six European sites. *World Psychiatry* 2013;12:60–8.
151. Burns T, Catty J, Becker T *et al*. The effectiveness of supported employment for people with severe mental illness: a randomised controlled trial. *Lancet* 2007;370:1146–52.
152. Medalia A, Richardson R. What predicts a good response to cognitive remediation interventions? *Schizophr Bull* 2005;31:942–53.
153. Hogarty GE, Goldberg SC, Schooler NR, Ulrich RF. Drug and sociotherapy in the aftercare of schizophrenic patients. II. Two-year relapse rates. *Arch Gen Psychiatry* 1974;31:603–8.
154. National Health Service (UK). Improving access to psychological therapies. 2013. Available from: <http://www.iapt.nhs.uk/> (Accessed 30 August 2013).
155. Fleischhacker W, Stolerman I. Encyclopedia of schizophrenia: focus on management options. London: Springer, 2011.
156. Johnson A. I should be included in the census. *Schizophr Bull* 2012;38:207–8.
157. Brown JD, Barrett A, Ireys H, Caffery E, Hourihan K. Evidence-based treatment for schizophrenia and bipolar disorder in state Medicaid programs. 2012. Available from: <http://aspe.hhs.gov/daltcp/reports/2012/sbpdlib.pdf> (Accessed 30 August 2013).
158. McCabe R, Bullenkamp J, Hansson L *et al*. The therapeutic relationship and adherence to antipsychotic medication in schizophrenia. *PLoS One* 2012;7:e36080.
159. Davis LW, Lysaker PH. Therapeutic alliance and improvements in work performance over time in patients with schizophrenia. *J Nerv Ment Dis* 2007;195:353–7.
160. Priebe S, Richardson M, Cooney M, Adedeji O, McCabe R. Does the therapeutic relationship predict outcomes of psychiatric treatment in patients with psychosis? A systematic review. *Psychother Psychosom* 2011;80:70–7.
161. Johnstone B, Yoon DP, Cohen D *et al*. Relationships among spirituality, religious practices, personality factors, and health for five different faith traditions. *J Relig Health* 2012;51:1017–41.
162. Smolak A, Gearing RE, Alonzo D *et al*. Social support and religion: mental health service use and treatment of schizophrenia. *Community Ment Health J* 2013;49:444–50.
163. Laursen TM. Life expectancy among persons with schizophrenia or bipolar affective disorder. *Schizophr Res* 2011;131:101–4.
164. Leucht S, Burkard T, Henderson J, Maj M, Sartorius N. Physical illness and schizophrenia: a review of the literature. *Acta Psychiatr Scand* 2007;116:317–33.
165. Leucht S, Burkard T, Henderson JH. Physical illness and schizophrenia: a review of the evidence. Cambridge: Cambridge University Press, 2007.
166. Global Alliance of Mental Illness Advocacy Networks-Europe. Exploring the links between physical and mental health: the patients experience. 2012. Available from: [http://www.gamian.eu/archive/PMH final report 20121204 IG.pdf](http://www.gamian.eu/archive/PMH%20final%20report%20121204%20IG.pdf) (Accessed 6 August 2013).
167. Foley DL, Morley KI. Systematic review of early cardiometabolic outcomes of the first treated episode of psychosis. *Arch Gen Psychiatry* 2011;68:609–16.
168. Osby U, Correia N, Brandt L, Ekbohm A, Sparen P. Time trends in schizophrenia mortality in Stockholm county, Sweden: cohort study. *BMJ* 2000;321:483–4.
169. Lawrence DM, Holman CD, Jablensky AV, Hobbs MS. Death rate from ischaemic heart disease in Western Australian psychiatric patients 1980–1998. *Br J Psychiatry* 2003;182:31–6.
170. Mitchell AJ, Lawrence D. Revascularisation and mortality rates following acute coronary syndromes in people with severe mental illness: comparative meta-analysis. *Br J Psychiatry* 2011;198:434–41.
171. Wu SI, Chen SC, Juang JJ *et al*. Diagnostic procedures, revascularization, and inpatient mortality after acute myocardial infarction in patients with schizophrenia and bipolar disorder. *Psychosom Med* 2013;75:52–9.
172. Himelhoch S, Leith J, Goldberg R *et al*. Care and management of cardiovascular risk factors among individuals with schizophrenia and type 2 diabetes who smoke. *Gen Hosp Psychiatry* 2009;31:30–2.
173. Sullivan G, Han X, Moore S, Kotrla K. Disparities in hospitalization for diabetes among persons with and without co-occurring mental disorders. *Psychiatr Serv* 2006;57:1126–31.
174. Kelly C, McCreadie R. Cigarette smoking and schizophrenia. *Adv Psychiatr Treat* 2000;6:327–31.
175. Centers for Disease Control and Prevention. Current cigarette smoking among adults – United States, 2011. Morbidity and Mortality Weekly Report. 2012. Available from: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6144a2.htm?s_cid=mm6144a2.htm_w (Accessed 9 August 2013).

176. McCreddie RG. Diet, smoking and cardiovascular risk in people with schizophrenia: descriptive study. *Br J Psychiatry* 2003;183:534–9.
177. Mackowick KM, Lynch MJ, Weinberger AH, George TP. Treatment of tobacco dependence in people with mental health and addictive disorders. *Curr Psychiatry Rep* 2012;14:478–85.
178. Winterbourne S, Knapp M, McCrone P *et al*. Quitting smoking for young people with schizophrenia – is it worth it? Economic evaluation of smoking cessation interventions. *PLoS One* 2014; in press.
179. Banham L, Gilbody S. Smoking cessation in severe mental illness: what works? *Addiction* 2010;105:1176–89.
180. Schmidt LM, Hesse M, Lykke J. The impact of substance use disorders on the course of schizophrenia – a 15-year follow-up study: dual diagnosis over 15 years. *Schizophr Res* 2011;130:228–33.
181. Kelly TM, Daley DC, Douaihy AB. Treatment of substance abusing patients with comorbid psychiatric disorders. *Addict Behav* 2012;37:11–24.
182. Puffer K. The intruder of the mind. *Schizophr Bull* 2010;36:651–4.
183. Barnes TR, Paton C, Hancock E *et al*. Screening for the metabolic syndrome in community psychiatric patients prescribed antipsychotics: a quality improvement programme. *Acta Psychiatr Scand* 2008;118:26–33.
184. Alonso Suárez M, Bravo-Ortiz MF, Fernandez-Liria A, Gonzalez-Juarez C. Effectiveness of continuity-of-care programs to reduce time in hospital in persons with schizophrenia. *Epidemiol Psychiatr Sci* 2011;20:65–72.
185. Green CA, Polen MR, Janoff SL *et al*. Understanding how clinician-patient relationships and relational continuity of care affect recovery from serious mental illness: STARS study results. *Psychiatr Rehabil J* 2008;32:9–22.
186. Tyrer P, Bajaj P. Nidotherapy: making the environment do the therapeutic work. *Adv Psychiatr Treat* 2005;11:232–8.
187. Open Door Group. Schizophrenia. 2013. Available from: http://www.opendoorgroup.org/pdf/SCHIZOPHRENIA_Fact_Sheet.pdf (Accessed 9 August 2013).
188. Nuechterlein KH, Subotnik KL, Turner LR *et al*. Individual placement and support for individuals with recent-onset schizophrenia: integrating supported education and supported employment. *Psychiatr Rehabil J* 2008;31:340–9.
189. Rinaldi M, Perkins R, McNeil K, Hickman N, Singh SP. The Individual Placement and Support approach to vocational rehabilitation for young people with first episode psychosis in the UK. *J Ment Health* 2010;19:483–91.
190. Pratt LA. Characteristics of adults with serious mental illness in the United States household population in 2007. *Psychiatr Serv* 2012;63:1042–6.
191. The United States Conference of Mayors. Hunger and homelessness survey. A status report on hunger and homelessness in America's cities: a 23-city survey, December 2007. 2007. Available from: <http://www.usmayors.org/hhsurvey2007/hhsurvey07.pdf> (Accessed 14 August 2013).
192. Tulloch AD, Khondoker MR, Fearon P, David AS. Associations of homelessness and residential mobility with length of stay after acute psychiatric admission. *BMC Psychiatry* 2012;12:121.
193. Stergiopoulos V, Burra T, Rourke S, Hwang S. Housing status as an independent predictor of functional capacity in patients with schizophrenia. *J Nerv Ment Dis* 2011;199:854–60.
194. Kooyman I, Dean K, Harvey S, Walsh E. Outcomes of public concern in schizophrenia. *Br J Psychiatry Suppl* 2007;50:s29–36.
195. Chilvers R, MacDonald G, Hayes A. Supported housing for people with severe mental disorders. *Cochrane Database Syst Rev* 2006;CD000453.
196. Kaspro WJ, Rosenheck RA. Outcomes of critical time intervention case management of homeless veterans after psychiatric hospitalization. *Psychiatr Serv* 2007;58:929–35.
197. Herman DB, Conover S, Gorroochurn P *et al*. Randomized trial of critical time intervention to prevent homelessness after hospital discharge. *Psychiatr Serv* 2011;62:713–19.
198. Ascher-Svanum H, Nyhuis AW, Faries DE, Ball DE, Kinon BJ. Involvement in the US criminal justice system and cost implications for persons treated for schizophrenia. *BMC Psychiatry* 2010;10:11.
199. Swanson JW, Frisman LK, Robertson AG *et al*. Costs of criminal justice involvement among persons with serious mental illness in Connecticut. *Psychiatr Serv* 2013;64:630–7.
200. Yoon J, Domino ME, Norton EC, Cuddeback CS, Morrissey JP. The impact of changes in psychiatric bed supply on jail use by persons with severe mental illness. *J Ment Health Policy Econ* 2013;16:81–92.
201. Ryan S, Brown CK, Watanabe-Galloway S. Toward successful postbooking diversion: what are the next steps? *Psychiatr Serv* 2010;61:469–77.
202. Scott DA, McGilloway S, Dempster M, Browne F, Donnelly M. Effectiveness of criminal justice liaison and diversion services for offenders with mental disorders: a review. *Psychiatr Serv* 2013;64:843–9.
203. Goodale G, Callahan L, Steadman HJ. Law & psychiatry: what can we say about mental health courts today? *Psychiatr Serv* 2013;64:298–300.
204. Stuart HL, Arboleda-Flórez J, Sartorius N. Paradigms lost: fighting stigma and the lessons learned. Oxford: Oxford University Press, 2012.
205. Sartorius N. Fighting schizophrenia and its stigma. A new World Psychiatric Association educational programme. *Br J Psychiatry* 1997;170:297.
206. Time to Change. Press release: Time To Change is having a positive effect on reducing mental health stigma and discrimination. 2013. Available from: <http://www.time-to-change.org.uk/news/time-change-having-positive-effect-reducing-mental-health-stigma-and-discrimination> (Accessed 4 August 2013).
207. Mental Health First Aid England. Research on and evaluations of MHFA. 2013. Available from: <http://www.mhfaengland.org/MHFA-England/en/about-us/mhfa-evaluations/> (Accessed 24 July 2013).
208. Joa I, Johannessen JO, Auestad B *et al*. The key to reducing duration of untreated first psychosis: information campaigns. *Schizophr Bull* 2008;34:466–72.
209. World Health Organization. World Health Organization Mental Health Atlas 2011. 2011. Available from: http://whqlibdoc.who.int/publications/2011/9799241564359_eng.pdf (Accessed 30 August 2013).
210. Frey W, Drake R, Bond G *et al*. Mental health treatment study: final report. Prepared by Westat for the Social Security Administration, Baltimore, MD. 2011. Available from: http://www.ssa.gov/disabilityresearch/documents/MHTS_Final_Report_508.pdf (Accessed 30 August 2013).
211. Drake RE, Bond GR, Thornicroft G, Knapp M, Goldman H. Mental health disability. An international perspective. *J Disabil Policy Stud* 2012;23:110–20.
212. Goldman HH. Will health insurance reform in the United States help people with schizophrenia? *Schizophr Bull* 2010;36:893–4.
213. Goldman HH, Karakus M, Frey W, Beronio K. Economic grand rounds: financing first-episode psychosis services in the United States. *Psychiatr Serv* 2013;64:506–8.
214. Cougnard A, Goumillou R, Monello F, Verdoux H. Time between schizophrenia onset and first request for disability status in France and associated patient characteristics. *Psychiatr Serv* 2007;58:1427–32.
215. United Nations. Convention on the rights of persons with disabilities and optional protocol. 2006. Available from: <http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf> (Accessed 6 August 2013).
216. Harvey PD, Heaton RK, Carpenter WT, Jr. *et al*. Functional impairment in people with schizophrenia: focus on employability and eligibility for disability compensation. *Schizophr Res* 2012;140:1–8.
217. Organisation for Economic Co-operation and Development. Mental health and work: Belgium. Belgium: OECD Publishing, 2013.

Glossary

Acute illness	A temporary illness, or a brief worsening of a chronic illness
Adherence	The extent to which a patient's behaviour – taking medications, and/or executing lifestyle changes – corresponds with healthcare provider recommendations agreed upon by the patient. Adherence requires patient participation in taking responsibility for their health care
Affective flattening	Reduction in range of emotional expression (e.g. poor eye contact and lack of facial expression)
Affective symptoms	Disturbances in mood during an illness
Agranulocytosis	Dangerously low levels of white blood cells
Akathisia	Unpleasant inner restlessness accompanied by motor movement
Alogia	Poverty of speech: short, incomplete answers to questions
Anticonvulsant	Medicine used to control seizures
Antipsychotic medication	Medicine used to treat symptoms of psychosis
Assertive community treatment (ACT)	An integrated, team treatment, holistic approach designed to provide comprehensive, community-based psychiatric treatment, rehabilitation and support
Avolition	A lack of drive or motivation
Cardiovascular disease	Disease affecting the heart and blood vessels
Catatonia/catatonic behaviour	Muscular rigidity. In schizophrenia, catatonic behaviour consists of episodes of rigidity with sudden impulsive movements
Cerebral cortex	The outermost part of the brain, which plays a major role in intellectual functions, such as memory, attention, thought and language
Chronic illness	A long-term, continuous illness
Clubhouse Model	A method of psychosocial rehabilitation. Participation is voluntary and no therapists or psychiatrists are involved in the programme – restorative activities focus on their members' strengths and abilities, not their illness
Cognitive behavioural therapy (CBT)	A form of psychosocial therapy that aims to change thought patterns and resulting behaviours
Cognitive impairment	Problems with functions such as memory, decision-making and verbal skills
Cognitive remediation	A form of psychotherapy that involves exercises aimed at improving cognition
Comorbidity	A disorder that coexists with another, such as cardiovascular disease in a person with schizophrenia
Compliance	The act of taking a medication/intervention as prescribed and following the directions of a healthcare provider, without the patient making their own decisions or taking responsibility for their health care
Delusions	Fixed beliefs that are not amenable to argument or reason
Depot	A long-acting medication administered via an injection
Direct costs	Costs that are directly attributable to something, in this case to schizophrenia (e.g. costs of medication)
Disorganized speech	Inappropriate speech that does not make sense
Dopamine	A neurotransmitter in the brain. Dopamine levels are increased in schizophrenia, and most antipsychotic medication acts by reducing dopamine activity
Dysphoria	A feeling of being ill at ease
Dystonia	Abnormal muscle tone or contractions causing repetitive movements or abnormal posture
Extrapyramidal symptoms (EPS)	Symptoms such as akathisia and dystonia , which can occur as a result of treatment with some antipsychotic medications
γ-aminobutyric acid (GABA)	A neurotransmitter that is involved in controlling the activation of nerve cells in the brain

Glutamate	A neurotransmitter that is involved in learning and memory
Grey matter	Nerve cell bodies in the brain, for example in regions involved in muscle control, memory, emotions and speech
Hallucinations	Perceptions that appear real, although there is no basis for them in reality. Hallucinations may be auditory (e.g. hearing voices), visual (e.g. seeing a person who is not there) or may involve other senses
Incidence	The number of new cases of an illness or condition occurring in a given period of time
Indirect costs	Costs that are not directly attributable to something, in this case schizophrenia (e.g. the cost to society from not working because of an illness or incapacity)
Insight	A person's appreciation of their mental state
Lifetime risk	The risk of developing a condition during a person's lifetime
Metabolic effects	Effects of a medicine on the body's handling of sugars, fats and similar substances
Mood stabilizer	A medicine that is used to treat mood disorders, such as bipolar disorder
Morbidity	The frequency at which the disease is seen in the population
Mortality	The rate of deaths in a population
Negative symptoms	Schizophrenia symptoms that are characterized by decreases in normal functioning, such as restricted emotion or low motivation
Neurotransmitter	A chemical that transmits electrical impulses between nerve cells. Examples include dopamine, serotonin, GABA and glutamate
Parkinson disease	A degenerative disorder of the central nervous system, characterized by shaking, rigidity and slowness of movement
Placebo	A pharmacologically inert substance that can be used as a control in a clinical trial of a medicine
Polypharmacy	The practice of being prescribed many different medications to take at one time
Positive symptoms	Expressive symptoms of psychosis , such as hallucinations, delusions and disorganization of thought and behaviour
Prevalence	The number of cases of an illness or condition within a group or population at a given time
Prolactin	A hormone involved in the control of milk production in the breast
Psychoeducation	The provision of information about mental illness, given to a patient to help them to develop appropriate coping strategies
Psychosis	A mental state with a separation from reality in perception (hallucinations), ideation (delusions) and/or disorganization of thinking
Psychosocial functioning	The way a person thinks, feels, acts and relates to self and others in their environment
Psychosocial therapy	Treatment that includes psychotherapy , and social and vocational training
Psychotherapy	A type of psychosocial intervention, also known as a 'talking therapy'
Secondary prevention	Modification of an illness by early diagnosis and intervention
Serotonin	A neurotransmitter that is involved in the transmission of nerve impulses in several regions of the brain
Tardive dyskinesia	A syndrome of involuntary, repetitive movements of the limbs, trunk and, most characteristically, the lips, tongue and jaw
Tertiary prevention	Reducing the burden of an established illness by optimizing treatment and rehabilitation
Therapeutic alliance	Cooperation between a healthcare provider and a patient in the management of the patient's illness

Abbreviations

ACT	Assertive community treatment
CBT	Cognitive behavioural therapy
CTI	Critical time intervention
EPS	Extrapyramidal symptoms
EUFAMI	European Federation of Associations of Families of People with Mental Illness
GAMIAN	Global Alliance of Mental Illness Advocacy Networks
IPS	Individual Placement and Support
MHC	Mental health court
NAMI	National Alliance on Mental Illness
NICE	National Institute for Health and Care Excellence
UN	United Nations
WHO	World Health Organization

Declarations of interest

- Professor Wolfgang Fleischhacker has received research grants from Janssen, Otsuka, Pfizer and Reckitt Benckiser; honoraria from Janssen, Lundbeck, Otsuka, Oxford PharmaGenesis™ Ltd, Roche and Takeda; and owns stocks in MedAvante.
- Professor Celso Arango has served as a consultant to or has received honoraria or grants from Abbott, Amgen, AstraZeneca, Bristol-Myers Squibb, Caja Navarra, Centro de Investigación Biomédica en Red de Salud Mental, Fundación Alicia Koplowitz, Instituto de Salud Carlos III, Janssen-Cilag, Lundbeck, Merck, Ministerio de Ciencia e Innovación, Ministerio de Economía y Competitividad, Ministerio de Sanidad, Mutua Madrileña, Otsuka, Oxford PharmaGenesis™ Ltd, Pfizer, Roche, Schering-Plough, Servier, Shire and Takeda.
- Mr Paul Arteel has no conflicts of interest to declare, but his employer, GAMIAN-Europe, has received grants or honoraria from Bristol-Myers Squibb, Janssen, Lundbeck and Oxford PharmaGenesis™ Ltd, and is a corporate member of GlaxoSmithKline, Janssen, Lilly, Lundbeck and Roche.
- Professor Thomas R E Barnes has received honoraria from Lilly, Oxford PharmaGenesis™ Ltd and Roche, and served on advisory boards for Lundbeck/Otsuka and Sunovion.
- Professor William Carpenter has received honoraria from Genentech, Oxford PharmaGenesis™ Ltd and Roche.
- Dr Ken Duckworth has no conflicts of interest to declare, but his employer, NAMI, has received an honorarium from Oxford PharmaGenesis™ Ltd.
- Professor Wolfgang Gaebel has received honoraria from Janssen-Cilag, Lilly and Servier, and is a member of the Faculty of the Lundbeck International Neuroscience Foundation, Denmark.
- Professor Silvana Galderisi has received honoraria from Amgen Dompé, Gedeon Richter and Oxford PharmaGenesis™ Ltd, and served on advisory boards for Eli Lilly and Janssen-Cilag.
- Professor Howard H Goldman has received an honorarium from the University of Innsbruck.
- Ms Lisa Halpern has received an honorarium from Oxford PharmaGenesis™ Ltd.
- Professor Josep M Haro has received honoraria from AstraZeneca, Eli Lilly, Lundbeck, Otsuka, Oxford PharmaGenesis™ Ltd and Roche.
- Professor Martin Knapp has received an honorarium from Oxford PharmaGenesis™ Ltd and funding from the Department of Health for England for research in the mental health field.
- Professor Stephen R Marder has been a consultant to or served on advisory boards for Abbott, Boehringer Ingelheim, EnVivo, Genentech, Lundbeck, Otsuka, Pfizer, Roche, Shire and Targacept; has provided research support to Amgen, Genentech, PsychoGenics and Sunovion, and has received an honorarium from Oxford PharmaGenesis™ Ltd.
- Dr Mary Moller has received honoraria from Janssen and Oxford PharmaGenesis™ Ltd.
- Professor Norman Sartorius has received honoraria from AstraZeneca, Eli Lilly, Oxford PharmaGenesis™ Ltd, Roche and Takeda; grants from Lilly, Lundbeck and Pfizer; and served as a consultant to Lundbeck and Servier.
- Ms Betsy Schwartz has received an honorarium from Oxford PharmaGenesis™ Ltd.
- Ms Sigrid Steffen has received an honorarium from Oxford PharmaGenesis™ Ltd.
- Ms Deborah Wan has received an honorarium from Oxford PharmaGenesis™ Ltd.
- Professor Peter Woodruff has received honoraria from AstraZeneca, Bristol-Myers Squibb, Cambian Healthcare, Eli Lilly, Janssen-Cilag, Lundbeck, Pfizer and Oxford PharmaGenesis™ Ltd.

TIME TO COMMIT TO POLICY CHANGE

Schizophrenia – Time to Commit to Policy Change

"I warmly welcome the findings of Schizophrenia: Time to Commit to Policy Change and I sincerely hope that the recommendations of this report will be taken on board by those responsible for setting health policy priorities in the months and years ahead."

Nessa Childers
Member of the European Parliament

"I applaud and endorse this national call for a policy change that will enhance the mental health policy narrative and will advance social justice, human rights and recovery for individuals diagnosed with schizophrenia and their families, in the US and abroad."

Judge Ginger Lerner-Wren
Administrative Judge, Broward Mental Health Court^a

"Schizophrenia: Time to Commit to Policy Change makes possible an international exchange of ideas regarding the comprehensive treatment of schizophrenia. It also provides an important stimulus for promoting social inclusion and for researching and developing new medications and psychosocial interventions."

Sigrid Steffen
Immediate Past President, EUFAMI

^aThe Broward Mental Health Court was a finalist in the HiiL Innovating Justice Awards 2013 – Successful Innovation