

Costs of schizophrenia

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Abstract

The economic impact of serious conditions such as schizophrenia is felt widely. The impact on overall health care budgets can be as much as 3% of the total, but there are also other costs, especially those associated with lost productivity, as typically only about one-fifth of all people with schizophrenia are able to find paid work. Decisions about optimal interventions for schizophrenia need to take account of these wide costs alongside the equally wide range of potential outcomes (not just symptom effects, but impacts on personal functioning, social interaction, employment, family relations, and quality of life). Antipsychotics are at the heart of treatment. A fundamental question for those responsible for purchasing medications is whether it is worth paying the inevitably higher prices. Opinion remains divided on this cost-effectiveness question: some studies have concluded that the second-generation antipsychotics are more cost-effective than first-generation medications, but two publicly funded studies (CATIE in the USA and CUTLASS in the UK) have reached the opposite conclusion. Outside the medication field there are fewer economic evaluations of schizophrenia interventions. Cognitive remediation therapy has been shown to produce significant improvements in memory among people with schizophrenia and cognitive deficits. There is also evidence that these improvements were achieved at no additional cost. Regarding service interventions, much attention is now focused on the individual placement and support model, which can improve access to work for people with psychotic illnesses, without any observable corresponding clinical deterioration. Again there is evidence of cost-effectiveness.

Keywords antipsychotics; burden of illness; cognitive remediation therapy; cost of illness; cost-effectiveness; individual placement and support; psychosis; schizophrenia; supported employment; treatment

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Costs attract interest for good and bad reasons. The bad reason is scarcity: there are many competing demands for any country's limited resources, and so governments and other decision-makers want to know how much it costs to respond to any given needs or preferences in one way rather than another. But scarcity is also the good reason for attracting interest: careful choices need to be made between alternative uses or courses of action, weighing up the amounts spent and the outcomes achieved. Making the right choice will mean having a bigger impact on health and quality of life from a given budget. There have therefore been demands for robust evidence on relative costs and cost-effectiveness.

Broad cost impacts

The economic impact of a chronic, serious condition such as schizophrenia is likely to be felt widely. A review of the international cost-of-illness literature revealed sizeable health care costs.¹ The impact of schizophrenia on overall health care budgets is typically between 1.5% and 3% of the total. But there can also be high costs to other systems and budgets, particularly to social care (welfare), housing, and criminal justice agencies. On top of these are 'hidden' or 'indirect' costs to patients, families, and the wider society, including out-of-pocket payments for treatment, transport costs, and lost income resulting from disrupted employment.

The relative size of the cost impacts varies from country to country, as carefully analysed by Blomqvist *et al.*,² for example, who analysed the ways in which spending on schizophrenia in Canada is much lower than that in the USA. A recent UK study illustrates the multiplicity of economic impacts. The estimated total societal cost of schizophrenia was £6.7 billion in 2004–2005 and comprised a range of elements.³

Among the interesting findings from cost-of-illness studies from a number of countries is that the health care costs of treating and supporting people with schizophrenia remain high despite the shifting balance of care away from hospital.¹ Secondly, however, decision-makers also need to recognize the breadth of economic impacts, well beyond the health system as conventionally defined. For example, because so many patients with schizophrenia remain unemployed, the cost of lost productivity is especially large.

Typically only around one-fifth of all people with schizophrenia are able to find paid work, although employment rates vary across countries: from 12% in France to 30% in Germany.⁴ Another recent review article concluded that 94% of people with schizophrenia in northern European countries receive welfare benefits, whereas in southern Europe and developing countries out-of-pocket spending is high and the impact on families is heavy.⁵ Lack of social support, low educational attainment, limited availability of jobs, employers' negative attitudes about schizophrenia, and self-stigmatizing behaviour can all contribute to employment difficulties.⁴

Influences on cost

Costs are therefore measured in terms of service contacts, family time spent caring, and productivity losses to the economy. These costs will vary from individual to individual. Some events in

people's lives are associated with higher costs – admission to hospital and symptomatic relapse, for example – while there are also behaviours that are linked to higher costs, such as poor adherence with medication and poor engagement with community services. Some individual characteristics can influence costs, including age, sex, ethnicity, severity of symptoms, personal and social functioning. These cost-influencing events, behaviours, and characteristics are inter-connected; for example, medication side effects could exacerbate non-adherence tendencies, in turn leading to relapse, the most common response to which is in-patient admission.

In terms of patient characteristics and their associations with resource use, most research attention has tended to focus on positive symptoms; other things being equal, patients with more severe positive symptoms tend to have higher costs. But there is also evidence pointing to connections between service use and costs, on the one hand, and both negative and cognitive symptoms on the other.

Associations between *negative symptoms*, service use, and costs were found in a cross-sectional study of 400 people with schizophrenia in five European countries.⁶ A measure that grouped indicators of self-neglect, blunted affect, emotional withdrawal, and motor retardation was found to be associated with increased in-patient use and total costs, and with decreased out-patient use, after adjusting for patients' sociodemographic and clinical characteristics. Negative symptoms can exact quite a heavy economic toll on mental health systems, as well as on the quality of life of individuals, implying that allocating resources for the improved management of negative symptoms could reduce the overall costs of schizophrenia care.

It is widely appreciated that *cognitive deficits* are associated with poor functioning and lower quality of life, but their economic consequences have rarely been examined. Patel and colleagues⁷ examined associations between cognition and costs among people with schizophrenia. Analysis of baseline data collected between 1999 and 2002 from a randomized controlled trial (see below) revealed associations between health care costs and the type and severity of cognition. For people with schizophrenia and severe cognitive impairment, the study showed how improvements in either overall cognition or specific cognitive components may impact on costs.

Growing attention is being paid to the advantages of earlier detection of psychosis and early intervention. Reducing the duration of untreated psychosis is likely to offer significant economic advantages, because (*inter alia*) it can mean diverting people away from long and costly in-patient admissions by providing close, targeted, and continuous support at the early stages of an illness. Mihalopoulos *et al.*⁸ offered tentative evidence in support of the cost-effectiveness of the Early Psychosis Prevention and Intervention Centre (EPPIC) in Melbourne, a well-known service model for young people experiencing an emerging psychotic disorder. Recently, Valmaggia and colleagues⁹ used a decision modelling approach to point (again tentatively) to the economic benefits of a service aimed at the early detection and treatment of psychosis in London.

Cost-effectiveness

When considering whether to use or recommend a particular treatment for a specified problem, decision-makers must first get

an answer to the clinical question: is the treatment effective in improving health and quality of life? They will then usually want an answer to the second question: is it cost-effective? That is, does the treatment achieve the outcomes at a cost that is worth paying? Not surprisingly, the second question – the economic question – can generate howls of concern that it is encouraging 'rationing' or in some other way denying people access to services or a better quality of life. Yet 'rationing' is just another word for resource allocation, and such a process is an essential part of any and every health system.

What does need to be considered is the cost-effectiveness of current service arrangements and treatment options. The recent literature contains a number of examples. Three are described here: (1) the use of atypical or second-generation antipsychotics rather than the much cheaper, first-generation (conventional) medications; (2) cognitive remediation therapy as an example of a psychological therapy; and (3) supported employment as an example of a service intervention.

Antipsychotic medications

Antipsychotic sales grew tenfold globally during the 1990s, and growth has continued subsequently with the rapid take-up of second-generation medications. Much of the increase has actually been due to the use of these medications for non-psychotic disorders (anxiety, depression, panic disorders, and agitation in dementia).

Newer drugs are almost always more expensive than older medications for the same disease, partly because of the high cost of bringing a new product to market, and partly because drug companies respond to market opportunities – known, assumed, or asserted relative efficacy increases the demand for their product, allowing them to charge a higher price. A fundamental question for those responsible for purchasing medications, therefore, is whether it is worth paying these higher prices.

Opinion remains divided on this cost-effectiveness question as far as the second-generation antipsychotics are concerned. A meta-analysis of 140 clinical trials concluded that clozapine, amisulpride, risperidone, and olanzapine were significantly more efficacious than first-generation drugs, but there was no evidence that other second-generation drugs had this same advantage.¹⁰ The newer medications were seen as producing better functional recovery and as 'cost-effective because reduction of other costs (particularly hospitalisation) offsets [the] much greater medication costs' (p. 559). Basu¹¹ reviewed 17 studies of the cost-effectiveness of pharmacological treatments and reached a different conclusion: for patients with chronic schizophrenia who are not 'treatment resistant', 'the cost-effectiveness results do not unambiguously lead to the choice of one pharmacological treatment over another' (p. 456). On the other hand, the review of evidence on clozapine led to the conclusion that it produced cost savings and better outcomes.

Three substantial studies with cost-effectiveness components have been completed since the Davis and Basu reviews.

The European Schizophrenia Outpatient Health Outcomes (SOHO) study was an industry-funded, 3-year, prospective, out-patient, observational evaluation of antipsychotic treatment in ten countries. Almost 11,000 patients were enrolled at baseline, 80% of whom were eligible for inclusion in the analysis at 12 months.¹² If an indicative funding threshold is assumed

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