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# **ECONOMIC ASPECTS OF THE MENTAL HEALTH SYSTEM:**

**KEY MESSAGES TO HEALTH PLANNERS  
AND POLICY-MAKERS**



**World Health  
Organization**

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## **KEY MESSAGES TO HEALTH PLANNERS AND POLICY-MAKERS**



**World Health  
Organization**

**Mental Health: Evidence and Research  
Department of Mental Health and Substance Abuse  
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## **Economic aspects of the mental health system: key messages to health planners and policy-makers**

### **Introduction**

The widening recognition of mental health as a significant international public health issue has led to increasing demands for evidence that investing into mental health is worthwhile. Specifically, there is a need for evidence showing that mental health care strategies can be cost-effective. There is also increasing interest in the way in which mental health systems are organized and financed and their effectiveness assessed.

WHO has recently developed the WHO Assessment Instrument for Mental health Systems (WHO-AIMS) to systematically assess key organizations and resources focused on improving mental health within a country or province. Such assessments provide context to economic evaluation.

This document is aimed at health planners and policy-makers at national or sub-national level who have a responsibility for strengthening, monitoring and evaluating mental health systems. The aims of the document are:

- To highlight the need for and relevance of an economic perspective in planning, providing and evaluating mental health services.
- To assist mental health planners and evaluators in understanding and using economic arguments for (a) increasing the allocation of resources for mental health and (b) improving cost-effective utilization of resources to strengthen mental health systems.

### **Economics and mental health**

Mental or psychological well-being is part of an individual's capacity to lead a fulfilling life. That includes the ability to study, work or pursue leisure interests, and to make day-to-day personal or household decisions about educational, employment, housing or other choices. Disturbances to an individual's mental well-being compromise these capacities, sometimes in a fundamental and enduring manner.

The potential consequences of mental disorder are numerous, including disturbed mood, thought or behaviour among affected individuals (or their caregivers), and lost earnings or savings as a result of impaired work ability or health care expenditures by households. Mental disorder among individuals or households creates a pressure on society to provide a range of health and welfare services.

Economics is concerned with the use and distribution of resources among the individuals making up a society, and how different ways of allocating resources impacts on their well-being. A common misconception is that economics is just about saving money. In fact, economics is about the optimal allocation of available or potentially available resources. The

field of economics is relevant to the health sector because resources available to meet all possible health needs or demands are finite (whether a country is economically rich or poor). In all societies, choices have to be made regarding how best to allocate limited resources.

## Types of economic evidence for mental health action

Decisions on how to allocate resources in mental health are complicated by the fact that mental disorders are common, disabling and often long-lasting. Recent epidemiological research has demonstrated the considerable epidemiological burden that mental disorders impose on the world as a whole (more than 10% of lost years of healthy life and over 30% of all years lived with disability; WHO, 2001). The enormity of this disease burden is caused by the relatively high prevalence of mental disorders, the often chronic or recurring nature of these disorders and the severity of disability associated with many mental disorders. Low rates of case recognition and lack of access to effective treatment compound the problem, particularly in poor countries.

Economic analysis provides a set of principles and analytical techniques to assess the relative costs and consequences of different health strategies. In relation to mental health, it seeks to address key policy questions about the magnitude of mental health problems, the relative impact and cost of different intervention strategies and the appropriate use of scarce resources.

### Mental health policy questions concerning intervention (cost-)effectiveness

Policy question	Research task	Evidence generated
1. How significant is the burden of mental disorders?	Estimate burden of disease Identify other social & economic consequences of disorders	% of total disease burden due to mental disorder % of mental disorder burden caused by different conditions (e.g., depression, alcohol)
2. How effective are interventions for burden-some conditions?	Estimate current effective coverage Assess impact of new interventions	Comparative efficacy of interventions % of burden averted with current interventions or avertable with better strategies
3. What will it cost to provide effective care?	Calculate full cost of interventions Estimate cost of scaling-up coverage	Comparative cost of interventions at different levels of coverage in the population
4. What are the most cost-effective strategies?	Integration of costs and effectiveness Specification of essential packages	Evidence-based priorities for the cost-effective allocation of mental health care resources

Information on the **burden of mental disorders**, whether expressed in monetary terms or epidemiological terms (e.g, via a summary measure of population health such as disability-adjusted life years [DALYs]), gives information on the magnitude of mental, neurological and substance abuse disorders at the population level. Economic burden studies (also known as cost-of-illness studies) have the advantage of showing the impact of mental ill-health on the health care system and also on levels of work productivity. Yet, burden estimates are an insufficient basis for allocating resources and setting priorities because they do not compare the potential cost or impact of different actions.

**Economic evaluation** (incorporating **cost-effectiveness analysis**) of existing service arrangements and current or new intervention strategies is an integral part of mental health system evaluation, providing suggestions for renewed action and more cost-effective investment. However, even though cost-effectiveness analysis is a necessary mechanism for identifying an efficient allocation of mental health resources (greatest health gain for available resources), such analysis is insufficient for setting overall priorities in the mental health system.

For the broader process of **priority-setting** in mental health, the cost-effectiveness (efficiency) of particular interventions or their combination into service packages needs to be systematically weighed up against (a) other objectives or goals of the mental health system - in particular (i) fairness (with respect to equity in geographical or financial access to services), (ii) poverty reduction and (iii) human rights protection - plus (b) the feasibility, acceptability and sustainability of different types of intervention.

## **Intervention impact and cost-effectiveness**

Mental health interventions encompass a wide range of possible actions, including legislative and regulatory frameworks, prevention and promotion, treatment and rehabilitation. There is currently more cost-effectiveness data for treatment than for other mental health actions. An analysis of the comparative effectiveness and costs of pharmacological and psychosocial interventions for reducing the burden of mental disorders, both at the level of different world regions and at the national level, has been recently completed. Details of this analysis may be found in *Dollars, DALYs and Decisions: Economic Aspects of the Mental Health System* (WHO, 2006). The key findings of this analysis are as follows:

### **Pharmacological interventions**

- For psychosis, the high price of buying newer (so-called 'atypical') antipsychotic drugs makes their use in lower-income regions of the world inadvisable on cost-effectiveness or affordability grounds (although this situation should change as these drugs come off patent); conventional neuroleptic drugs have similar efficacy and are much less expensive.
- For depression, older and newer drugs also have similar efficacy. However, the difference in price between older tricyclic anti-depressants (TCAs) and generic versions of newer drugs called selective serotonin reuptake inhibitors (SSRIs) is much smaller - and in certain countries such as India, negligible. This means that the treatment of choice is more context-specific and can be driven by patient or clinical preferences.
- For epilepsy, first-line anti-epileptic drugs (such as phenobarbital and phenytoin) have similar efficacy to some other commonly used anti-convulsant drugs (carbamazepine or valproic acid), but are less expensive to buy and therefore more cost-effective.

### **Psychosocial interventions**

- Providing psychosocial treatment alongside pharmacological treatment for severe mental disorders such as schizophrenia and bipolar affective disorder involves modest extra costs (for training and intervention), but is expected to result in substantial extra health gain, making such a combined strategy more cost-effective than pharmacotherapy alone.
- For people with depression or anxiety, psychotherapy is expected to be as cost-effective as generic versions of newer antidepressants. Clearly, however, there remains a wide human resource gap in making psychosocial interventions more available.

### **Case management**

- Long-term, maintenance treatment of depression with pharmacological and psychosocial interventions has a larger impact on reducing the burden of depression than episodic treatment because it prevents a proportion of recurrent depressive episodes, and is also expected to represent a cost-effective strategy.

### **Essential packages of mental health care**

- A defined package of cost-effective mental health care interventions - made up of community-based drug and psychosocial treatment for schizophrenia and bipolar affective disorder, plus primary care based pharmacological treatment of depression and anxiety - is estimated to cost US\$ 3-4 per capita in low-income settings such as sub-Saharan Africa or South Asia, and up to US\$ 7-9 in more middle-income regions (such as Latin America). These costs reflect the amount of money per inhabitant that needs to be invested to ensure that people in the population have access to treatment. For every US\$ 1 million invested in such a mental health care package, it is estimated that 350 to 700 healthy years of life would be gained over and above what would occur without intervention.

### **Intervention affordability**

Having identified the actual expected cost of achieving a healthy year of life with a range of mental health care strategies, an important subsequent question relates to the affordability of these interventions. One readily available measure for judging this question in different countries of the world is in relation to gross national income / domestic product per capita (the total economic earnings or output of a country divided by its inhabitants). The above findings indicate that:

- Recommended interventions for depression and anxiety can be considered very cost-effective, on the grounds that each healthy life year gained costs less than one year of average per capita income;

- Community-based interventions for severe mental disorders using older anti-psychotic and mood-stabilizing drugs can be considered moderately cost-effective, on the grounds that each healthy life year gained costs less than three times average annual income;
- Use of atypical anti-psychotic drugs at current international prices - particularly when delivered in hospital-based settings - are not a cost-effective use of scarce resources in the context of most low- or middle-income countries, on the grounds that each healthy life year gained costs (much) more than three times average annual income.

When compared to health actions such as vaccination or tuberculosis control, interventions for mental disorders are not the most cost-effective or affordable interventions available to health planners. Based on the above affordability criteria, however, there is just as much of an economic justification for investing in cost-effective mental health care as there is in interventions for other chronic conditions such as anti-retroviral therapy for AIDS, glycemic control of diabetes, or cholesterol control with statins (which have comparable ratios of cost for each year of healthy life gained).

In addition to the reduced psychiatric morbidity associated with the introduction of cost-effective treatments, there are a number of other benefits that flow from their use, most notably reductions in family burden / informal care-giving at the household level, and higher rates of participation in the labour force / reduced levels of crime and antisocial behaviour at the community level. These extra benefits add to the attractiveness of investing societal resources in mental health care and prevention. The evidence for these arguments, however, needs to be strengthened.

## **Priority-setting in mental health**

Determination of the most cost-effective interventions for a set of disorders, while informative, is not the end of the process. Rather, it represents one key consideration into the broader task of priority-setting with regard to investing resources in mental health. Other criteria to be considered in deciding on the allocation of resources include (a) the relative severity of different disorders (in terms of suffering and disability), (b) the potential for reducing poverty among people with different disorders and (c) protection of human rights of those with severe mental disorder.

When determining what will be financed from a given amount of resources, the overall objective should be to ensure that health interventions maximize the benefits to society, while also considering the distribution of these benefits among different social groupings (such as rich versus poor, young versus old, or urban versus rural).

Discussions about justice or equity at a policy level have typically concentrated on the distribution or redistribution of (scarce) resources, which in the context of mental health care is typically determined by need and expressed in terms of equal access to or utilization of services (*horizontal equity*). However, this equity criterion gives little guidance on how to define priorities when different population groups exhibit different needs, and thus is less useful in

comparing interventions for different health conditions. Thus horizontal equity is complemented by *vertical equity* considerations (literally, unequal treatment for unequal need), which can aid decisions on how to deal with the needs of different population groups, such as those with more severe mental disorders.

## **Scaling-up access to and provision of mental health care**

Over and above the consideration of equity alongside efficiency measures, other pragmatic concerns enter into the final decision to invest in new technologies or scale up the availability of existing interventions, in particular the acceptability of proposed new strategies to patients and providers, the feasibility of their implementation, and, vitally, the availability of funds.

A good example in the context of mental health and addiction services is psychosocial treatment, for which there is increasing evidence of its cost-effectiveness, either delivered on its own (e.g. cognitive behavioural therapy or problem-solving treatment for depression) or in conjunction with pharmacological treatment (e.g. psychosocial treatment for psychosis or bipolar affective disorder). However, the training and financial implications of greatly scaling up the availability of psychosocial treatment within primary and secondary mental health services together create a potentially imposing barrier to its implementation.

Likewise, shifting away from currently cost-ineffective (inefficient) structures and practices (including reliance on mental hospital-based services) to a more effective and cost-effective allocation of resources (towards community-based services) implies a potentially major reorganization of the mental health system, not only in terms of strategic policy but also in terms of other dimensions including human resource development and deployment, buildings (primary care and district hospitals), and drug procurement / distribution. This is likely to mean that extra resources (bridge funding) will be required while the new service model is established (partly because there will continue to be a need for an adequate number of acute psychiatric care beds).

Based on the use of cost-effective interventions, the financial implications of scaling-up key mental health care strategies need not be overwhelming (well below US\$ 5 per capita in low-income countries, and less than US\$ 10 in middle-income countries). However, current budgetary allocations to mental health in many low- and middle-income countries are often very low, relative to the need for care and support. Accordingly, there is a need to increase the mental health budget to reduce the current clinical and economic burden attributed to mental disorders.

To match the resource base available to the most comprehensive mental health systems in the world, and by so doing reach the per capita expenditures suggested above, countries should expect to allocate up to 10%, and a minimum of 5%, of the total health budget to mental health. For example, a country that spends US\$ 100 per capita on health in total would need to allocate US\$ 5-10 of this amount to mental health care and prevention in order to provide

effective population coverage of the essential set of interventions described earlier. Clearly such a scaled-up level of funding may represent a significant change from the present and may fall outside shorter-term financial plans, but serves as a suggested benchmark for the future.

## **Conclusion**

The economic perspective is an integral part of thinking through mental health system development. Too much is at stake to ignore this economic dimension of mental health care, whether measured in terms of lost health gains, misallocated monies or unfair financing mechanisms.

Insights from economic analysis that can be drawn upon in developing mental health systems include:

- better assessment of the economic consequences of mental disorder;
- identification of cost-effective strategies to best combat the increasing burden of mental, neurological and substance abuse disorders; and
- improved ways of financially rewarding service providers or protecting payers from the financial risks associated with mental disorder.

However, economic considerations can only ever be one of many inputs into the decision-making process. Other criteria, notably equity considerations relating to disease severity, human rights protection or poverty reduction, may be deemed equally if not more important in determining priorities.

## Further reading

Chisholm D, Sanderson K, Ayuso-Mateos JL, Saxena S (2004). Reducing the global burden of depression: population-level analysis of intervention cost-effectiveness in 14 world regions. *British Journal of Psychiatry*, 184: 393-403.

Chisholm D (2005). Choosing cost-effective interventions in psychiatry. *World Psychiatry*, 4: 37-44. Available on-line at: <http://www.wpanet.org/publications/journalwpa.html>

Chisholm D (2005). Cost-effectiveness of first-line antiepileptic drug treatments in the developing world: a population-level analysis. *Epilepsia*, 46: 751-759.

Chisholm D, van Ommeren M, Ayuso-Mateos JL, Saxena S (2005). Cost-effectiveness of clinical interventions for reducing the global burden of bipolar disorder. *British Journal of Psychiatry*, 187: 559-567.

Hutubessy R, Chisholm D, Tan Torres T (2003). Generalized cost-effectiveness analysis for national-level priority-setting in the health sector. *Cost Effectiveness and Resource Allocation*; 1: 8. Available on-line at: <http://www.resource-allocation.com/content/pdf/1478-7547-1-8.pdf>

WHO (2001). *The World Health Report 2001; Mental Health: New Understanding, New Hope*. World Health Organization, Geneva. Available on-line at: <http://www.who.int/whr/2001/en/index.html>

WHO (2003a). *Mental Health Financing. Mental health Policy and Service Guidance Package*. World Health Organization, Geneva. Available on-line at: [http://www.who.int/mental\\_health/resources/en/Financing.pdf](http://www.who.int/mental_health/resources/en/Financing.pdf)

WHO (2003b). *Investing in Mental Health*. World Health Organization, Geneva. Available on-line at: [http://www.who.int/mental\\_health/media/investing\\_mnh.pdf](http://www.who.int/mental_health/media/investing_mnh.pdf)

WHO (2003c). *Planning and budgeting to deliver services for mental health. Mental health Policy and Service Guidance Package*. World Health Organization, Geneva. Available on-line at: [http://www.who.int/mental\\_health/resources/en/Planning\\_budgeting.pdf](http://www.who.int/mental_health/resources/en/Planning_budgeting.pdf)

WHO (2004). *Mental Health Policy, Plans and Programmes. Mental health Policy and Service Guidance Package*. World Health Organization, Geneva. Available on-line at: [http://www.who.int/mental\\_health/policy/en/policy\\_plans\\_revision.pdf](http://www.who.int/mental_health/policy/en/policy_plans_revision.pdf)

WHO (2005). *Mental Health Atlas 2005*. World Health Organization, Geneva. Available on-line at: [http://www.who.int/mental\\_health/evidence/atlas/](http://www.who.int/mental_health/evidence/atlas/)

WHO (2005) *World Health Organization Assessment Instrument for Mental Health Systems (WHO-AIMS)*, World Health Organization, Geneva. Available on-line at: [http://www.who.int/mental\\_health/evidence/AIMS\\_WHO\\_2\\_2.pdf](http://www.who.int/mental_health/evidence/AIMS_WHO_2_2.pdf)

WHO (2006). *Dollars, DALYs and Decisions: Economic Aspects of the Mental Health System*. World Health Organization, Geneva. Available on-line at: [http://www.who.int/mental\\_health/evidence/](http://www.who.int/mental_health/evidence/)

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