WHO MENU OF COST-EFFECTIVE INTERVENTIONS FOR MENTAL HEALTH

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Introduction

In 2019, the Seventy-second World Health Assembly requested the WHO Director-General to prepare a menu of policy options and cost-effective interventions for mental health. In 2020 the Seventy-third World Health Assembly noted the completion of the request. The process and results of this work are described in this brief document.

The menu of cost-effective interventions for mental health is a list of interventions for which information on cost-effectiveness is available for use by Member States when selecting interventions, as appropriate for their national context. It is not exhaustive; the menu is a preliminary list of population- and individual-level interventions based on current evidence (see Table 1).

Development of the menu

The menu was developed using the WHO-CHOICE methodology *(1)* to prepare and update, as appropriate, WHO estimates of the cost-effectiveness of a range of mental health interventions, in line with the development of Appendix 3 to the global action plan for the prevention and control of noncommunicable diseases 2013–2020 *(2)*.

WHO-CHOICE is a programme that helps countries to identify priorities based on health impact and cost-effectiveness. It can be applied to a wide range of strategies relevant to policies affecting health outcomes. All options are compared to a common comparator, a null scenario in which the impacts of currently implemented interventions are removed, thereby enabling comparison of interventions across geographical areas and aspects of health *(1)*.

Since 2001, WHO has used the WHO-CHOICE method to estimate the cost-effectiveness of a range of health interventions *(3)*. With respect to mental health, this work has focused primarily on assessing individual-level interventions for clinical management of psychosis, bipolar disorder and depression, with results published and disseminated through peer-reviewed academic journals *(4)*. As part of the preparations of the menu of cost-effective interventions, key data parameters used to analyse the interventions were updated and new cost-effectiveness estimates were generated at the level of country groupings at higher and lower levels of national income (see Table 2).

In 2019, to expand the menu of options beyond clinical management, WHO conducted economic analyses of three population-level interventions: (a) regulatory bans on the use of highly hazardous pesticides in order to reduce cases of suicide *(5)*, (b) universal school-based socio-emotional learning programmes to improve mental health and prevent suicide in adolescents; and (c) indicated, school-based socio-emotional learning programmes to improve mental health and prevent suicide in adolescents.

The menu has been compiled from the results of economic analyses, which are available on the WHO website *(6)*. These analyses assess cost-effectiveness ratios, health impact and the economic costs of implementation. The results translate into a set of parameters for consideration by Member States. Global analyses should, however, be accompanied by local contextualized analyses; other WHO tools, such as the OneHealth Tool, are available to help individual countries to estimate the costs and health impacts of specific interventions in their national context.[1]

Scope

The list of cost-effective interventions is intended to provide information and guidance on the relative costs and health impacts of a preliminary set of evidence-based interventions, and to serve as a basis for developing and broadening the menu. Identifying a list of core interventions with cost-effectiveness information that are sufficiently comprehensive to meet the needs of Member

1 ***OneHealth tool:*** https://www.who.int/tools/onehealth

States is inherently challenging. The absence of an intervention from the menu does not necessarily mean that it is not cost-effective but rather that there were methodological or capacity reasons for not completing a WHO-CHOICE analysis.

As mentioned above, the menu as currently proposed consists largely of individual-level clinical management interventions for adults. This is because most of the available mental health analyses based on WHO-CHOICE have been for those types of intervention that have been most amenable to cost-effectiveness analysis. Over time, the menu will need to be expanded to include recovery interventions, clinical interventions for a wider range of conditions across the life course, interventions for comorbidities, and a broader list of public mental health interventions, including interventions that address deinstitutionalization and known determinants of mental health.

The importance of non-financial considerations

Although cost-effectiveness analysis provides pertinent information, it has limitations and should not be used as the sole basis for decision-making and resource allocation. Beyond cost-effectiveness and affordability, full consideration should be given to: human rights and health equity; balance of potential benefits and harm of interventions; values and preferences related to interventions and their outcomes; and implementation capacity, acceptability and the need to implement a combination of population-wide and individual-level interventions.

Progressive expansion of service coverage is a key aspect of universal health coverage. Scaling up interventions for mental health conditions should proceed through community-based mental health and social care services. As recommended in the Comprehensive mental health action plan 2013–2030, the locus of care should be systematically shifted away from long-stay mental hospitals with increasing coverage of evidence-based interventions (including use of stepped care principles, as appropriate) and deployment of a network of linked community-based mental health services, including short-stay inpatient care and outpatient care in general hospitals, primary care facilities, community mental health centres and day care centres, support for people with mental health conditions living with their families, and supported housing.

Mental health services must adhere to human rights principles, which include the respect of individual preferences, based on communication of potential benefits and harms of any proposed care, including any potential short- and long-term adverse effects of psychotropic treatment.

Menus of Population-based and Individual-level Interventions

Table 1. Menu of population-based interventions

POPULATION-BASED INTERVENTIONS		
	Intervention	**Significant non-financial considerations[a]**
P1	Universal school-based socioemotional learning programmes to improve mental health and prevent suicide in adolescents	Intervention involves implementation by education sector. It reaches only adolescents who attend school.
P2	Indicated school-based socioemotional learning programmes[b] to improve mental health and prevent suicide in adolescents	Intervention involves implementation by education sector. It reaches only adolescents who attend school. Intervention requires an identification system for adolescents for whom the intervention is indicated. Possible social stigmatization associated with identification should be taken into account.
P3	Regulatory bans on the use of highly hazardous pesticides[c] to prevent suicide *(7)*	Intervention involves engagement with agricultural sector. Intervention is especially relevant to low-income, rural populations.

Table 2. Menu of individual-level interventions

INDIVIDUAL-LEVEL INTERVENTIONS[d]		
	Intervention	**Significant non-financial considerations**
	Psychosis (adults)[e]	
I1	Basic psychosocial support and older antipsychotic medication	Persons with psychosis are frequently subjected to stigmatization, discrimination and human rights violations. Health care providers must adhere to the United Nations Convention on the Rights of Persons with Disabilities.
I2	Basic psychosocial support and newer antipsychotic medication	
I3	Psychological treatment[f] and older antipsychotic medication	
I4	Psychological treatment and newer antipsychotic medication	

a Cost-effectiveness alone does not imply the feasibility of an intervention in all settings. This column highlights some of the critical non-financial aspects that should be taken into account by countries when deciding on the suitability of interventions.

b Indicated school-based socioemotional learning programmes target students with subthreshold mental health conditions.

c For the definition of "highly hazardous pesticides", see International Code of Conduct on Pesticide Management (http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/Code/Code_ENG_2017updated.pdf,accessed 11 June 2021) and Guidelines on Pesticide Management (http://www.fao.org/3/a-i5566e.pdf,accessed 11 June 2021).

d For an example of a relevant WHO clinical tool, see mhGAP intervention guide for mental, neurological and substance use disorders in non-specialized health settings. Geneva: WHO; 2015 (https://www.who.int/publications/i/item/mhgap-intervention-guide---version-2.0, accessed 11 June 2021).

e Estimates of the cost-effectiveness of older and newer antipsychotic medication were based, respectively, on the estimated costs and effectiveness of haloperidol and risperidone. For further details, see Chisholm D, Gureje O, Saldivia S, Villalón Calderón M, Wickeremasinghe R, Mendis N et al. Schizophrenia treatment in the developing world: an interregional and multinational cost-effectiveness analysis. Bull. World Health Organ, 2008;86: 542–51. doi:10.2471/BLT.07.045377

f Cognitive behavioural therapy and family therapy are examples of effective psychological treatments for people with psychosis.

	Bipolar disorder (adults)[g]	
I5	Basic psychosocial support and mood stabilizing medication (lithium)	Persons with psychosis are frequently subjected to stigmatization, discrimination and human rights violations. Health care providers must adhere to the United Nations Convention on the Rights of Persons with Disabilities.
I6	Psychological treatment[h] and mood stabilizing medication (lithium)	
I7	Basic psychosocial support and mood stabilizing medication (valproate[i])	
I8	Psychological treatment and mood stabilizing medication (valproate)	
	Depression (adults)[j]	
I9	Basic psychosocial support for mild cases	Health care providers must adhere to the United Nations Convention on the Rights of Persons with Disabilities. Psychological interventions can also be feasibly offered through the social and educational sector.
I10	Basic psychosocial support and antidepressant medication for first episode moderate–severe cases	
I11	Psychological treatment[k] of first episode moderate–severe cases	
I12	Psychological treatment and antidepressant medication of first episode moderate–severe cases	
I13	Basic psychosocial support and antidepressant medication for recurrent moderate–severe cases on an episodic basis	
I14	Psychological treatment of recurrent moderate–severe cases on an episodic basis	
I15	Psychological treatment and antidepressant medication for recurrent moderate–severe cases on an episodic basis	
I16	Basic psychosocial support and antidepressant medication for moderate–severe cases on a maintenance basis	
I17	Psychological treatment of recurrent moderate–severe cases on a maintenance basis	

g For more details, see Chisholm D, van Ommeren M, Ayuso-Mateos, JL, Saxena S. Cost-effectiveness of clinical interventions for reducing the global burden of bipolar disorder. Br. J. of Psychiatry, 2005;187:559-67. doi: 10.1192/bjp.187.6.559

h Cognitive behavioural therapy and interpersonal therapy are examples of effective psychological treatments for depressive episodes in bipolar disorder.

i Valproate should be avoided in women of childbearing age owing to association with birth defects.

j For more details, see Chisholm et al (2004). Reducing the global burden of depression: Population-level analysis of intervention cost-effectiveness in 14 world regions. Br. J. of Psychiatry, 2004;184:393-403. doi:10.1192/bjp.184.5.393

k Cognitive behavioural therapy, behavioural activation and interpersonal psychotherapy are examples of effective psychological treatments for moderate–severe depression. For examples of relevant WHO tools, see: Thinking healthy: a manual for psychosocial management of perinatal depression. Geneva: WHO; 2015 (https://apps.who.int/iris/handle/10665/152936, accessed 11 June 2021), Group interpersonal therapy (IPT) for depression. Geneva: WHO; 2016 (https://www.who.int/publications/i/item/group-interpersonal-therapy-for-depression, accessed 11 June 2021); Problem Management Plus (PM+): individual psychological help for adults impaired by distress in communities exposed to adversity. Geneva: WHO; 2016 (https://www.who.int/publications/i/item/WHO-MSD-MER-16.2, accessed 11 June 2021); and Group Problem Management Plus (Group PM+): group psychological help for adults impaired by distress in communities exposed to adversity. Geneva: WHO; 2020 (https://www.who.int/publications/i/item/9789240008106, accessed 11 June 2021).

Costs, health impact and cost-effectiveness of mental health interventions[2,3]

Table 3. Population-based interventions

Mental Health Interventions	Low- and Lower Middle-Income Countries (*n* = 10)			Upper Middle- and High-Income Countries (*n* = 10)		
Intervention scenario	*Cost of implementation per year (I$ million per 1 million population)*	*Health Impact per year (healthy life years gained per 1 million population)*	*Average cost-effectiveness ratio (I$ / healthy life year gained)*	*Cost of implementation per year (I$ million per 1 million population)*	*Health Impact per year (healthy life years gained per 1 million population)*	*Average cost-effectiveness ratio (I$ / healthy life year gained)*
P1. Universal, school-based socio-emotional learning programmes to improve mental health and prevent suicide in adolescents	<0.10	50–100	1000–5000	0.10–0.50	50–100	1000–5000
P2. Indicated, school-based socio-emotional learning programmes to improve mental health and prevent suicide in adolescents	<0.10	<10	10 000–50 000	0.10-0.50	<10	10 000–50 000
P3. Regulatory bans of highly hazardous pesticides to prevent suicide	<0.01	100–500	<100	<0.01	<50	100–500

Table 4. Individual interventions

Mental Health Interventions		Low- and Lower Middle-Income Countries (*n* = 10)			Upper Middle- and High-Income Countries (*n* = 10)		
Intervention scenario (continued)	*Coverage for eligible population*	*Cost of implementation per year (I$ million per 1 million population)*	*Health Impact per year (healthy life years gained per 1 million population)*	*Average cost-effectiveness ratio (I$ / healthy life year gained)*	*Cost of implementation per year (I$ million per 1 million population)*	*Health Impact per year (healthy life years gained per 1 million population)*	*Average cost-effectiveness ratio (I$ / healthy life year gained)*
Psychosis							
I1. Basic psychosocial support and (older) anti-psychotic medication	80%	0.10–0.50	100–500	500–1000	1.00–5.00	100–500	5000–10 000
I2. Basic psychosocial support and (newer) anti-psychotic medication	80%	0.10–0.50	100–500	500–1000	1.00–5.00	100–500	5000–10 000
I3. Psychological treatment and (older) anti-psychotic medication	80%	0.10–0.50	100–500	100–500	1.00–5.00	100–500	5000–10 000
I4. Psychological treatment and (newer) anti-psychotic medication	80%	0.10–0.50	100–500	100–500	1.00–5.00	500-1000	5000–10 000

2 Analyses were conducted for 20 large countries that between them account for > 80% of the global population and the global burden of mental health conditions, and subsequently aggregated at the level of higher and lower country income groupings.

3 Cost and cost-effectiveness results are presented in international dollars (I$), which adjust for differences in the relative price and purchasing power of countries and thereby facilitate comparison across regions (that is, $I 1 buys the same quantity of healthcare resources in Kenya or India as it does in the United States).

Bipolar Disorder							
I5. Basic psychosocial support plus mood-stabilizing medication (valproate)	50%	0.10–0.50	100–500	1000–5000	1.00–5.00	100–500	10 000–50 000
I6. Psychological treatment and mood-stabilizing medication (valproate)	50%	0.10–0.50	100–500	1000–5000	1.00–5.00	100–500	10 000–50 000
I7. Basic psychosocial support and mood-stabilizing medication (lithium)	50%	0.10–0.50	1000–5000	100–500	1.00–5.00	500-1000	5000–10 000
I8. Psychological treatment and mood-stabilizing medication (lithium)	50%	0.10–0.50	1000–5000	100–500	1.00–5.00	500-1000	1000–5000
Depression							
I9. Basic psychosocial support for mild cases	50%	<0.05	100–500	100–500	0.10–0.50	100–500	500-1000
I10. Basic psychosocial support and anti-depressant medication of first episode moderate-severe cases	50%	<0.05	100–500	100–500	0.10–0.50	100–500	1000–5000
I11. Psychological treatment of first episode moderate-severe cases	50%	0.05–0.10	100–500	100–500	0.10–0.50	100–500	1000–5000
I12. Psychological treatment and anti-depressant medication of first episode moderate-severe cases	50%	0.05–0.10	100–500	100–500	0.10–0.50	100–500	1000–5000
I13. Basic psychosocial support and anti-depressant medication of recurrent moderate-severe cases on an episodic basis	50%	0.05–0.10	500–1000	100–500	0.10–0.50	100–500	500-1000
I14. Psychological treatment of recurrent moderate-severe cases on an episodic basis	50%	0.10–0.50	500–1000	100–500	0.50–1.00	100–500	1000–5000
I15. Psychological treatment and anti-depressant medication of recurrent moderate-severe cases on an episodic basis	50%	0.10–0.50	500–1000	100–500	0.50–1.00	100–500	1000–5000
I16. Basic psychosocial support and anti-depressant medication of moderate-severe cases on a maintenance basis	50%	0.05–0.10	1,000–5,000	<100	0.10–0.50	500-1000	100–500
I17. Psychological treatment of recurrent moderate-severe cases on a maintenance basis	50%	0.10–0.50	1000–5000	<100	0.50–1.00	500-1000	500-1000

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