

Prevention and management of  
mental health conditions in

# The Philippines

The case for investment



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## ABBREVIATIONS AND ACRONYMS

<b>DOH</b>	Department of Health
<b>GDP</b>	gross domestic product
<b>mhGAP</b>	mental health Gap Action Programme
<b>NCD</b>	noncommunicable disease
<b>4P</b>	Pantawid Pamilyang Pilipino Program
<b>PCMH</b>	Philippine Council for Mental Health
<b>PhilHealth</b>	Philippine Health Insurance Corporation
<b>PHP</b>	Philippine peso
<b>ROI</b>	return on investment
<b>SDG</b>	Sustainable Development Goal
<b>SEL</b>	social–emotional learning
<b>UHC</b>	universal health coverage
<b>UNDP</b>	United Nations Development Programme
<b>UNIATF</b>	United Nations Inter-Agency Task Force on the Prevention and Control of Non-communicable Diseases
<b>WHO</b>	World Health Organization
<b>YLD</b>	years lived with disability

# The Philippines



The case for investment in mental health

## CURRENT BURDEN OF MENTAL HEALTH CONDITIONS



**68.9**  
billion  
PHP per  
year

0.4% of GDP



**2.7**  
billion  
PHP direct  
costs

due to healthcare  
expenditures



**66.2**  
billion  
PHP indirect  
costs

due to loss of workforce  
and reduced productivity

## INVESTMENT REQUIRED



**143 billion**  
PHP

(1,306 PHP per capita)

Investment required for selected  
clinical packages and population-  
based preventive interventions over  
a 10-year period

ANXIETY  
DISORDERS

**10.4**

billion PHP

DEPRESSION

**7.4**

billion PHP

PSYCHOSIS

**29.1**

billion PHP

BIPOLAR  
DISORDER

**63.2**

billion PHP

EPILEPSY

**7.4**

billion PHP

ALCOHOL  
USE/  
DEPENDENCE

**9.8**

billion PHP

PESTICIDE  
BAN

**2.4**

billion PHP

UNIVERSAL  
SCHOOL-BASED  
INTERVENTIONS

**7.5**

billion PHP

INDICATED  
SCHOOL-BASED  
INTERVENTIONS

**6.1**

billion PHP

## RETURN ON INVESTMENT OVER 10 YEARS



**217 billion**  
PHP

includes productivity  
gains and social value  
of health

	ROI	Healthy life- years gained	Total productivity gained
Anxiety disorders	2.4	115 306	35 billion PHP
Depression	5.3	171 394	47 billion PHP
Psychosis	0.5	44 394	15 billion PHP
Bipolar disorder	0.2*	47 044	14 billion PHP
Epilepsy	6.6	174 415	56 billion PHP
Alcohol dependence	1.3	47 021	23 billion PHP
Pesticide ban	0.2*	8 181	3 billion PHP
Universal school-based interventions	2.0	110 154	22 billion PHP
Indicated school-based interventions	0.2*	6 106	1 billion PHP

\*Benefit-cost ratio

## EXECUTIVE SUMMARY

Mental, neurological and substance use conditions, including depression, anxiety disorders, psychosis, epilepsy, dementia and alcohol-use disorders, pose a significant challenge in the Philippines. In 2017, the two most common mental health conditions, anxiety and depression, accounted for over 800 000 years of life lived with disability in the country, leading not only to vast human suffering but also to economic losses due to the impact on the workforce productivity. Reported suicide rates in the Philippines have been increasing over the past several decades, particularly among young people, with the latest estimate (in 2015) indicating 17% of young people aged 13–15 had attempted suicide.

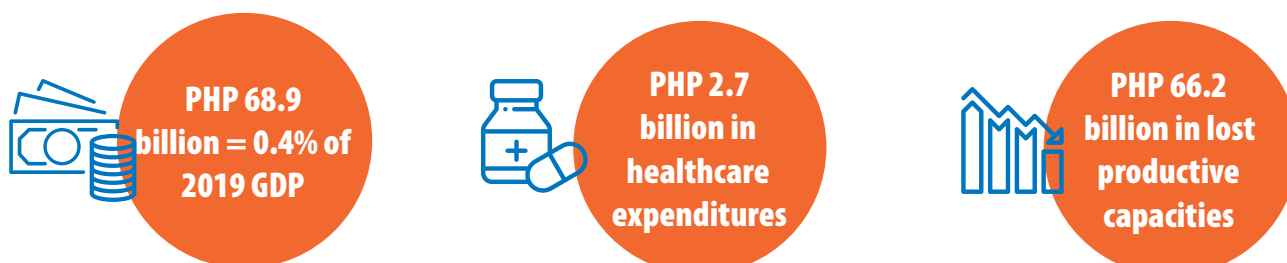
This report provides an assessment of the current mental health situation in the country – including challenges and opportunities for development of the mental health system – and economic evidence for the attributable and avertable burdens of a number of leading mental, neurological and substance use conditions (psychosis, bipolar disorder, depression, anxiety disorders, epilepsy and alcohol use disorders). Intervention costs, health gains and economic benefits were estimated for these six conditions and their treatment as well as for three population-based prevention interventions: universal and indicated school-based interventions for preventing depression and suicide and a nationwide regulatory ban on highly hazardous pesticides to prevent suicide. These interventions will have co-benefits for the development agenda, contributing to many of the Sustainable Development Goals (SDGs) other than target 3.4, “to reduce by 2030 by one third premature mortality from noncommunicable diseases (NCDs) and promote mental health and well-being”.

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## Main findings

### The cost of mental health conditions



**In 2019, mental health conditions cost the Philippine economy 68.9 billion PHP, equivalent to 0.4% of its gross domestic product (GDP).** These annual costs include 2.7 billion PHP in health-care expenditure and 66.2 billion PHP in lost productive capacity due to premature mortality, disability and reduced productivity while at the workplace. The productivity losses indicate that a range of sectors could benefit from investments in mental health and that multisectoral, whole-of-society engagement is needed.

### Why invest in interventions

By acting now, the Philippines can reduce the burden of mental health conditions. The findings of the investment case demonstrate that investment in evidence-based, cost-effective mental health interventions would, over the next 10 years:

**Save over  
5 000 lives**

**Save more than 5000 lives and result in 700 000 healthy life years gained by reducing the incidence, duration or severity of the assessed mental health conditions.** Use of the intervention packages would contribute to achieving SDG target 3.4, which is to reduce by one third premature mortality (< 70 years) from NCDs and promote mental well-being by 2030.

**Provide  
economic  
benefits**

**Provide economic benefits (217 billion PHP) that would significantly outweigh the costs (143 billion PHP) of implementation.** The intervention packages for scaled-up treatment of epilepsy and depression would have the highest return on investment (ROI), resulting in 6.6 and 5.3 PHP, respectively, for every 1 PHP invested.



The results of the investment case for the Philippines provide evidence-based opportunities to reduce the adverse health, economic and other consequences of mental health conditions through preventive and treatment-based interventions. Current policy reforms towards progressive realization of universal health coverage (UHC) provide a strong basis for extending population access to treatment and prevention of mental health conditions.

The Philippines can ensure that mental health services and treatment are covered by national health insurance and that local governments, workplaces, schools and other community organizations prioritize mental health prevention, promotion and treatment and overall implementation of the Mental Health Act, according to the Philippine Council for Mental Health (PCMH) Mental Health Strategic Plan 2019–2023.

The report concludes with recommendations for actionable steps that the Government can take to strengthen a whole-of-government, whole-of-society approach to mental health conditions and their consequences. The five recommendations are:

- 1 Strengthen mental health leadership and governance.

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- 2 Invest in evidence-based, cost-effective clinical and population-based mental health interventions.

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- 3 Include a range of mental health interventions while extending UHC.

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- 4 Increase the capacity of the health-care workforce and the health system to provide mental health interventions.

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- 5 Invest in mental health research and development.

The five recommendations are described in detail in the following chapter. WHO, UNDP and the United Nations Inter-Agency Task Force stand ready to support the Government of the Philippines to improve mental health and well-being in the country.

## RECOMMENDATIONS

It is strongly recommended that the Government of the Philippines and donor bodies consider the results of this analysis. It is proposed that the relevant authorities and institutions consider the main finding that investing in scaled-up mental health interventions will have substantial economic returns and therefore make additional investment in mental health interventions.

The intervention options presented and their different ROIs should be considered, as they are tried, tested, evidence-based interventions in line with the community-based, integrated approaches to mental health recommended by WHO. They cover a number of crucial mental and neurological disorders and also prevention and promotion. Other options should also be considered according to the country's requirements.

The analysis draws attention to areas that should be strengthened and scaled up for cost-effective preventive and clinical interventions for mental health conditions in the Philippines. The following actions would help the Philippines reap significant health and economic benefits from scaled-up investments in mental health.

### **Strengthen leadership and governance for mental health.**

Several gaps were identified in the national strategy, including the absence of local government unit policies to implement the Mental Health Act; lack of involvement of non-health sectors and people with lived experience of mental health problems; gaps in formulating and implementing mental health programmes, including community-based mental health services; and inadequate resources. Strengthening governance and leadership is a pillar of the strategic plan and a necessary precursor for other recommended actions. To address these barriers the Philippines could:

- **help local government units to incorporate mental health into local investment and development plans with guidelines and training from the Department of Interior and Local Government.** The DOH could highlight best practices, such as those in Antipolo, where both barangay health workers and doctors have been trained in mhGAP.
- **encourage a whole-of-government, whole-of-society approach, including involvement of non-health sectors and people with lived experience in promoting mental health.** The PMCH should encourage multi-sectoral action with non-health sectors, civil society organizations and people with lived experience of mental health problems, including a multisectoral thematic working group to assist in implementation of the strategic plan.

- **orient leaders in rights-based mental health care.** Encourage all leaders of health and non-health agencies, advocates, civil society organizations and service providers to use a rights-based approach to mental health, including completing the WHO QualityRights module.
- **ensure sustainable financing for governance. Governance and planning mechanisms should be fully financed, including the PCMH, the PCMH Mental Health Strategic Plan 2019–2023, the Internal Review Board and other essential mechanisms.** PhilHealth presents an opportunity for coverage of individual mental health costs.
- **strengthen coordination, ensuring the inclusion of mental health in NCD control and prevention strategies and policies and, when established, in the national coordination mechanism.**
- **continue monitoring and evaluation with regular reporting to ensure accountability.** Use performance scorecards to monitor implementation of the strategic plan and achievement of its indicators and targets.

## 2

### **Invest in the evidence-based, cost-effective clinical and population-based mental health interventions modelled in the investment case.**

Scaling up basic and intensive psychosocial, psychiatric and neurological treatment for the most common mental health and neurological conditions (such as anxiety, depression and epilepsy) should be considered seriously. As shown by the economic analysis, the intervention packages for addressing these common conditions provide not only important health benefits but also significant ROIs. The intervention package for alcohol use disorder also has a high ROI. As there are high rates of alcohol use disorders (5.3%) and binge drinking in the country, investments to reduce alcohol dependence should be a high priority for the Philippines.

The population-based interventions deserve particular attention. The universal school-based interventions have the greatest potential impact in preventing depression and anxiety, with an ROI of 2.0 over 10 years if the social value of health is included in the calculation. The model could be extended in the future to account for productivity gains of students later in life due to better educational outcomes as well as reductions in the prevalence of mental health conditions and higher productivity when they become adults. As the school-based interventions could generate important health and productivity gains at relatively low cost, they represent an opportunity that should not be missed. The population-based

interventions are also aligned with the goals of the first pillar of the Mental Health Strategic Plan 2019–2023 for promotion and prevention.

3

### **Include a range of mental health interventions in expansion of UHC.**

Investment is necessary to increase affordable access to treatment for mental health conditions, whether delivered by specialized or non-specialized mental health services. The Philippines could do so within the expansion of UHC to ensure that mental health inpatient and outpatient services (including the costs of both service delivery and any medicines) are included in the revised PhilHealth package. Promotion and prevention should also be included. The Philippines could also take advantage of the price-lowering initiative of the President (49) and the medicines access programme to include psychotropic and antiseizure medicines. The Philippines could also map requirements for mental health services and service providers as a basis for a sustainable, multi-year budget. This is essential to improve access to mental health services at all levels of care.

4

### **Increase capacity of the health system and other sectors to provide mental health interventions.**

The COVID-19 emergency represents an opportunity to “build back better” and scale up the mental health response during recovery. With the expected rise in mental, neurological and substance use disorders due to the pandemic, national recovery plans must include provisions for affordable mental health services. Widespread emergency mental health and psychosocial support are essential components of national preparedness for and response to COVID-19. Therefore, the DOH should develop an evidence-based, standardized training module for both professional and volunteer emergency mental health care responders.

The Mental Health Act requires capacity-building for mental health in the health sector and other sectors such as education. The Philippines has several opportunities to increase its focus on community service provision, including extending and fully financing the DOH community programme to monitor and oversee the school and workplace-based interventions required by the Act. For this purpose, the DOH could work with unions, the Department of Labour and Employment and the Department of Education.

Investments should also be made in training and hiring counsellors in the Department of Education for introducing prevention and promotion into curricula and in ensuring sufficient capacity in the Department of Labour and Employment to monitor implementation in workplaces. Under a broader national strategy for suicide prevention, the DOH should provide guidelines for mainstreaming suicide prevention into the school and workplace programmes and also into other priority health programmes, such as the family development sessions of the 4Ps, which serves over 4 million Filipinos. Nongovernmental organizations that currently provide integrated community care could also provide first-line mental health diagnosis and treatment.

The Government should take steps to strengthen the health system to ensure access to mental health services at all levels of care. This will require training a new group of mental health care providers to meet the demand, providing incentives for their placement in rural areas in order to realize the DOH goal of having mental health professionals in every region. The Government could include mental health care in services for patients with tuberculosis and HIV,<sup>1</sup> while empowering and training primary health care providers to give first-line treatment, possibly dedicating specialists to supportive supervision, for instance by tele-mentoring.<sup>2</sup>

The Government can work with the United Nations country team, which includes WHO, UNDP, the World Bank and other development partners, to ensure full use of initiatives such as the WHO Special Initiative for mental health (7). The DOH could also lead integration of mental health into development investment and programmes.<sup>3</sup>



## **Invest in mental health research and development.**

Inadequate mental health information systems impede the Philippines' ability to address the mental health burden. This issue is addressed by one of the four pillars of the Philippines Mental Health Strategic Plan 2019–2023, in which “increased availability, accessibility and utilization of evidence-based mental health data” is an outcome. The Philippines could invest in regular epidemiological studies in accordance with the recommendations of the WHO Assessment Instrument for

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- 1 There is a strong rationale for such integration, as people with mental health conditions have a three to four times higher rate of dropping out from medication regimes and much higher mortality rates from pre-existing conditions. Some services are already being integrated. For instance, PhilHealth offices currently provide smoking cessation and awareness. mhGAP could be similarly integrated, also with the WHO package of essential noncommunicable disease interventions.
  - 2 The DOH started tele-mentoring in four towns in the western Philippines, and the national telehealth centre may be prepared to support tele-mentoring of health-care providers and increased provision of remote psychosocial support.
  - 3 For instance, the Asian Development Bank health facilities development loan to the Philippines.

Mental Health Systems (50) and integrate information on mental health into the national health information system. To inform policy-making and planning, the Philippines could also invest in studies of how health-seeking behaviour can be improved in schools and workplaces and of the various factors that result in stigmatization of people with mental health conditions in the Philippines.

Investment in research will help the Philippines to reorient psychosocial interventions beyond individual clinical interventions to address the needs of the wider population with a broad, multidimensional perspective of mental health. This is essential in view of the complex issues in the Philippines, including natural disasters, conflict, spousal violence, displacement and stigmatization (30).

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## INTRODUCTION

Mental health is an integral part of health and well-being and has an important impact on people's capacity to lead fulfilling, productive lives. Mental health and psychosocial well-being are affected by numerous factors, involving interaction of genetic and other biological characteristics with societal, cultural and environmental factors. Increased exposure to adverse determinants of mental health and the ageing of populations in many parts of the world are associated with a 30% rise in the global prevalence of mental health conditions in the past three decades (1).

Mental health conditions, such as depression, anxiety disorders, psychosis, epilepsy, dementia and alcohol use disorders, do not only cause individual human suffering but also have economic implications for households, countries and the world. These include the financial burden on the health system and also loss of productivity by the workforce, as individuals who suffer from mental health conditions are more likely to leave the labour force, miss days of work (absenteeism) or work at reduced capacity (presenteeism). WHO has estimated that mental health conditions, with neurological conditions (such as epilepsy and Alzheimer disease), account for 28% of the non-fatal disease burden worldwide and for 10% of the overall disease burden, including both death and disability (2).

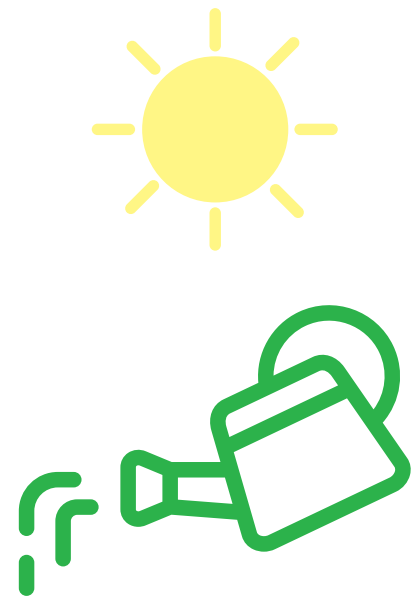
Mental health conditions have important social implications, including suicide, violence and accidents related to alcohol use disorders and negative impacts on education (drop-outs, poor performance), burdens on carers, including lost opportunities for girls and women, or stigmatization and discrimination of people with mental health conditions.



Most mental health conditions are treatable; however, the challenge in many parts of the world is a lack of access to affordable, high-quality mental health services. Promotion and preventive programmes can encourage or increase protective factors and healthy behaviour that can help prevent the onset of mental health conditions. Mental health evolves throughout the life-cycle and is strongly influenced by social and economic determinants (e.g. income, employment status, educational level, material standard of living) and also physical health and exposure to adverse life events, ranging from natural disasters and civil conflict to sexual violence, child abuse and neglect. Many cases of the most common mental health conditions could be prevented by preventing exposure to adversity.

Strengthening policy and increasing interest and investment in mental health are major triggers for public health and sustainable development, as reflected in the 2030 Agenda for Sustainable Development, of which target 3.4 is by 2030 to reduce by one third premature mortality from NCDs and promote mental health and well-being. Investment not only in health and well-being but also in evidence-informed mental health interventions will contribute to the achievement of other SDGs, notably 4 (education), 5 (gender), 8 (employment and economic growth), 10 (equality), 11 (safe cities), 16 (reducing violence) and 17 (partnership, capacity-building and domestic resource mobilization). Improving mental health is critical to the SDG vision of a just, inclusive, equitable society.

**Strengthening policy and increasing interest and investment in mental health are major triggers for public health and sustainable development.**





The importance of addressing the social and economic challenges posed by mental health conditions was highlighted during the High-level Meeting of the UN General Assembly on the Prevention and Control of NCDs in 2018. In addition, WHO's Thirteenth General Programme of Work (2019–2023) emphasizes the epidemic of NCDs and the promotion of mental health.

"For the future: towards the healthiest and safest region", released by the WHO Regional Office for the Western Pacific in 2019 for work with Member States (3), indicates that better management of NCDs, including mental health conditions, is one of the main priorities. The strategy is based on the premise that integrating mental health services into primary health care and ensuring that primary health care workers are adequately skilled in mental health represent the most viable way of ensuring that people have the mental health care they need. The WHO Regional Office for Western Pacific is committed to supporting Member States in strengthening the full range of primary health care services, including mental health care.

WHO and UNDP have built on their work on investment cases for NCDs to meet the strong demand from Member States for guidance on the economic impact of mental health conditions and developed methods and guidance for the development of national mental health investment cases (1). These investment cases include quantification of the costs of mental health conditions to the health sector and to the economy at large and of the benefits of scaled-up action. The method includes analysis of the ROI, in which the costs of mental health conditions in the country are compared with the estimated health and economic returns of investing in a package of cost-effective interventions (both scaled-up treatment and population-based preventive programmes) over a defined period (such as 10 or 20 years). The method also includes an institutional context analysis as a basis for scaling up mental health promotion, prevention and care in the country.

After the launch of the NCD investment case in Manila in October 2019, the Government of the Philippines expressed interest in extending the analysis to mental health. This exercise comes at an opportune time, as the country is currently implementing health system reforms to achieve UHC (4). The solid legislative framework provided by the recently adopted Mental Health Act (5) and the PCMH's strategic plan to support implementation (6), strong support from the Government and from the Country and Regional WHO offices and the United Nations Country Team and the participation of the Philippines in the "WHO Special Initiative for Mental Health: Universal health coverage for mental health" (7) make the country an ideal candidate for a mental health investment case.

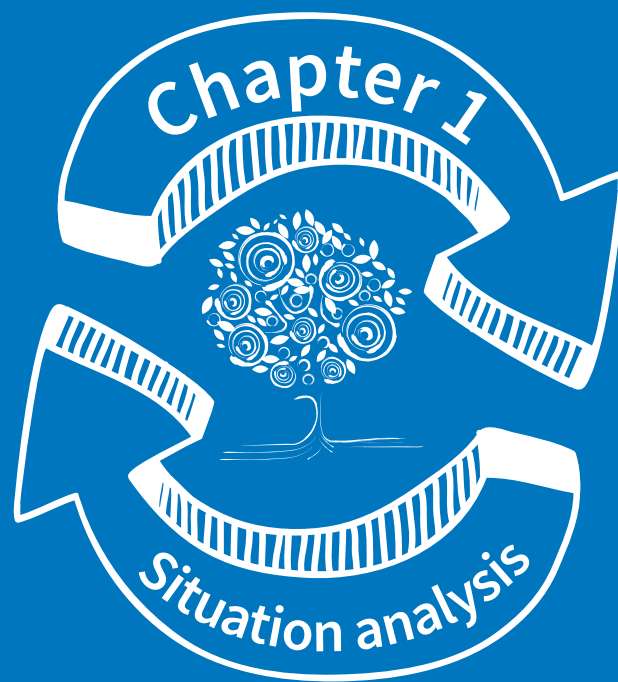
This report is the result of the work of a multi-disciplinary team that analysed and modelled data and information collected during a mission to the Philippines in February 2020. **The report is divided into four sections:** the prevalence of mental health conditions in the Philippines and the current mental health response by the Government; the methods and tools used in the economic analysis; the results, including total costs, and the expected health and economic benefits (such as healthy life-years gained, mortality averted and productivity gains) of implementing a set of clinical and population-based preventive mental health interventions; and the conclusions to be drawn.

<b>SITUATION ANALYSIS</b>	<b>METHODS</b>	<b>RESULTS</b>	<b>CONCLUSION</b>
Presents the mental health situation in the Philippines and the current and planned responses by the Government.	Describes the methods and tools used in the economic analysis.	Presents the results, including total costs, and the expected health and economic benefits.	Outlines the conclusions to be drawn from these findings and provides recommendations for the Government of the Philippines.

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## SITUATION ANALYSIS

### Mental health situation in the Philippines

In the Philippines, as elsewhere in the world, there is increasing concern about mental health and mental health conditions. Depression is the most common mental health condition in the Philippines. In 2017, there were about 3.3 million cases of depressive disorders (3.3% of population), representing 554 100 total years lived with disability (YLD) (8). Depression is characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, tiredness and poor concentration. Depression may be continuous or recurrent, substantially impairing people's ability to function at work or school and to cope with daily life. Depression can lead to suicide. Anxiety is another common mental health condition in the Philippines, with about 3 million cases of anxiety disorders (3.1 % of the population) in 2017, representing 284 591 total YLD (8). The estimated rate of mortality from suicide (per 100 000) was 3.2 in 2017 (9). Although this rate is much lower than the average in the Region (10.2 deaths per 100 000 population) and the global average (10.2 deaths per 100 000 population) (10), a substantial increase in the suicide rate has been observed in the past three decades: Between 1984 and 2005, the estimated incidence of suicide in the Philippines increased from 0.23 to 3.59 per 100 000 among men and from 0.12 to 1.09 per 100 000 among women, although suicide is likely to be under-reported because of its non-acceptance by the Catholic Church and the associated disgrace and stigmatization of the family (11).

Adolescent mental health is of great concern. The 2015 Global School-based Student Health Survey indicated that 11.6% of students aged 13–17 years had seriously considered attempting suicide during the 12 months before the survey (12).



The prevalence of current use of psychoactive drugs in the country is estimated to be 2.3%, affecting 1.8 million people aged 10–69 years. Depression is reported to be one of the factors that contribute to psychoactive drug use (11%). According to the Dangerous Drugs Board in 2015 (13), 53% of people in the Philippines who used psychoactive drugs were unemployed.

As reported in the NCD investment case for the Philippines, alcohol use is a growing concern in the country, especially among men and adolescents. Of alcohol users, 48% of men binged (consumed six or more drinks in one sitting) during the previous month, and the prevalence of alcohol use disorder in the population was estimated to be 5.3% (14). In the Philippines Global School-based Student Health Survey in 2015 (12), 18% of students aged 13–15 years currently drank alcohol, and 67% of those who drank had their first alcoholic drink before the age of 14 years.

Beghi et al. (15) estimated that 350 000 people in the Philippines live with epilepsy, a chronic neurological condition characterized by recurrent, unprovoked seizures. If not effectively treated, epilepsy has significant economic implications in terms of health-care needs, premature death and lost productivity.

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People with epilepsy tend to have more physical problems (such as fractures from injuries related to seizures) and higher rates of mental health conditions, including anxiety and depression. Furthermore, the risk of premature death (due mainly to injuries related to seizures) in people with epilepsy is up to three times higher than that of the general population, and the highest rates of premature mortality occur in low- and middle-income countries and in rural areas (16).

According to the Institute of Health Metrics and Evaluation (17), approximately 200 000 people in the country suffer from schizophrenia, a highly disabling condition. People with severe mental disorders such as schizophrenia are at extremely high risk of human rights violations. Dementia is a growing issue in the Philippines with its ageing population. It is estimated that more than 700 000 people in the country are currently living with dementia (18). Dementia has physical, psychological, social and economic impacts, not only on patients but also on their families, other carers and society at large.

The COVID-19 pandemic has had a severe impact on individual mental well-being across the globe, with marked increases in psychological distress due to the pandemic. At the same time, mental health services have been severely disrupted. When COVID-19 was first detected in the Philippines in January 2020, the country was still responding to a complex outbreak of circulating vaccine-derived polioviruses types 1 and 2 first detected in July 2019. By mid-March, with increasing numbers of COVID-19 infections, the Philippines Government declared an “enhanced community quarantine” on Luzon island, including Metro Manila. As of early May 2021, the Philippines had over one million COVID-19 cases and over 18 000 deaths (19).

## **Social and environmental determinants of mental health**

The location of the Philippines makes it vulnerable to natural disasters. Typhoon Haiyan, the strongest in history to make landfall in the Philippines, exposed the urgency of planning for and organizing psychosocial response programmes in the country. Such extreme life events result in psychosocial distress (20). The effects of extreme weather and natural disasters are far-reaching, including on both physical and mental health. Natural disasters can result in distress reactions, increase health risk behaviour, including increased alcohol and tobacco use, and exacerbate or trigger psychiatric disorders (21). Children are at particularly high risk. Research suggests that experiencing a natural disaster before the age of 5 significantly increases the risk of mental health and substance abuse disorders in adulthood. Natural disasters can also adversely affect parenting, including increased maltreatment and reduced emotional support (21).

Disruptions to health care service delivery in the aftermath of a disaster can exacerbate chronic mental health problems. When services for people with mental illness are disrupted, treatment of new cases emerging as a result of the disaster are significantly delayed. Even countries with well-established mental health services face this challenge and are unprepared to deal with it after a disaster (22).



Areas of conflict and subsequent displacement of populations also affect mental health in the Philippines. The Mindanao conflict has resulted in clashes since the 1960s. In 2008, an estimated 700 000 people were displaced, many of whom were forced to evacuate under fire and witnessed their homes destroyed or people wounded or killed (23). In 2017, 100 000 residents of Marawi were forced to flee their homes. According to the Integrated Provincial Health Office of Lanao del Sur, at least 30 732 evacuees manifested mental health issues during the conflict (24).

Mental illness remains stigmatized in the Philippines, which discourages people from seeking help. A study in 2017 found that 65% of respondents believed that people with mental health conditions have little chance of recovery; 48% believed that they will be looked down on; 62% believed that it would be embarrassing to go out with a relative with such a condition; and 51% reported that they preferred not to tell others if they had a mental illness (25). The perceived cause of mental illness may also influence help-seeking, as mental illness was often attributed to curses or evil spirits in rural areas, and respondents were reluctant to seek professional help, even when services were available.

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Other conditions add to the mental health burden in the Philippines, such as spousal violence. The National Demographic and Health Survey conducted in 2017 (26) found that 24.4% of ever-married women aged 15–49 years had experienced spousal violence, and 15% reported that they had experienced such violence in the previous 12 months. As in other low- and middle-income countries, women in the Philippines who experienced physical or psychological abuse are more likely to experience psychological distress and to attempt suicide (27).

## Mental health services: governance and access

The Philippine health care system is decentralized, with transfer of authority, responsibilities and resource management to local government units, i.e. a province headed by a governor, a city or municipality headed by a mayor or a barangay (village) headed by a captain. The national Government supports the local government units with funding and technical assistance, and the Department of Interior and Local Government oversees the devolved local authorities.

The Philippine health care system has a significant primary care workforce but very few mental health professionals. For a population of more than 100 million people, there are an estimated 548 psychiatrists (0.5 per 100 000 population), 516 psychiatric nurses (0.5 per 100 000) and 133 psychologists (0.1 per 100 000) practising in the country (28). People living in rural areas often have no access to mental health professionals, as the vast majority of specialists live in Manila. Most mental health care is provided in facilities, comprising four mental health hospitals and 58 private custodial or residential psychiatric facilities<sup>4</sup> and 29 outpatient mental health facilities for the whole country. The ratio of beds is 94 per 100 000 population, and approximately 65% of all DOH-accredited hospitals are privately owned.<sup>4</sup> Currently, there is little emphasis on mental health promotion and prevention.

To address these constraints, the Department of Health (DOH) has trained primary health care physicians in a number of provinces in the assessment and management of mental, neurological and substance use disorders with the mhGAP<sup>5</sup> treatment protocols. The DOH is leading the design of models for community-based mental health services to ensure a transition from inpatient care in mental health facilities to community care.

The Mental Health Strategic Plan (2019–2023) (6) includes mental health literacy and designating mental health coordinators in every region to coordinate mental health promotion programmes. The goals are to ensure that: mental health and well-being are valued, promoted and protected; mental health conditions are identified, treated and prevented; and people with mental health conditions can exercise the full range of their human rights. The outputs and activities are to:

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<sup>4</sup> Department of Health, December 2016

<sup>5</sup> The WHO Mental Health Gap Action Programme builds capacity among non-specialist health-care providers in the assessment and management of people with priority mental health, neurological and substance use conditions in low-resource settings.

- design a community mental health programme
- build human resource capacity for mental health
- establish networks and referral systems for mental health care providers
- strengthen mental health and well-being services in primary, secondary and tertiary health care
- integrate mental health and well-being services into all levels of health and non-health sectors
- develop a national suicide prevention strategy
- develop a “care for carers” programme.

The national insurance system currently covers inpatient services only for acute psychosis and for detoxification from substance abuse. Psychotropic medications are covered for most inpatients.<sup>6</sup> Outpatients typically cover 25–75% of the cost of their medications; however, even 25% co-payment is often not affordable by the average household.

Within the current health care system reforms, the DOH is developing a comprehensive outpatient package that will apply to any type of health condition. There is a strong push to include most mental health inpatient and some outpatient services in the package, as well as essential psychotropic medications.

Access to medication is generally poor, as the medication access programme buys medications for sites but manages to meet only 4–6% of the current need.<sup>7</sup> To provide better access to essential pharmaceuticals, an executive order was issued for application of a “maximum retail price” to reduce the prices of selected pharmaceuticals. The prices of psychotropic medicines will be reviewed in the next phase.

Philippines has made a significant effort to respond rapidly to the mental health and psychosocial consequences of the COVID-19 pandemic. Materials on mental health and psychosocial support from WHO and the Inter-Agency Standing Committee Reference Group on Mental Health and Psychosocial Support in Emergency Settings were translated into local languages and used widely to build capacity in health facilities. The WHO Office in the Philippines integrated mental health and psychosocial support into its COVID-19 emergency response through focal points in cities and facilities, with online coordination meetings and field visits.

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6 The Mental Health Act mandates the provision of outpatient and inpatient benefit packages for priority mental health conditions. Current funding from the National Insurance System is, however, for inpatient services only. Claims for mental and behavioural disorders are compensable only for patients with acute presentations admitted for any of the following reasons: when aggressive or assaultive behaviour presents a danger to self or others; when the patient is suicidal; when the patient becomes manic or depressed, with grossly impaired judgement and reality testing; when medication side-effects became disabling or potentially life-threatening; and for special medical procedures such as electroconvulsive therapy (PhilHealth Circular 09 s. 2010).

7 National Mental Health Program’s Medicine Access Program (2019).

## Financing of mental health care

Mental health care provision in the Philippines is limited by financial constraints, with an estimated 2.65% of the health-care budget (US\$ 0.47 per capita) allocated to mental health (29). Most is invested in facilities and institutional care. Health and social service provision is devolved to local government units, which allocate funding according to the allocations they receive from the central Government. Furthermore, health-care services rendered by the Department of the Interior and Local Government can be charged to the special health fund that reimburses local government units for those services. Local, regional and departmental units submit their proposals for the overall health budget to the DOH. Consolidated proposals are then submitted to the Department of Budget and Management, which decides the budget for the DOH. Budgeting will be facilitated by the Mental Health Act, which stipulates that psychotropic medicines be listed specifically as a line item, whereas previously they were included in the DOH Public Health Management Fund under NCD control and were not identified separately. The DOH is considering mapping the mental health needs of the population to ensure a guaranteed multi-year budget.

The Philippines is a global leader in the area of health taxes, and most appropriations for UHC will be from health taxes. Local government units stand to benefit from significant increases in Government health tax revenues on tobacco, alcohol, e-cigarettes and sweetened beverages, projected to amount to more than PHP 330 billion in 2020.<sup>8</sup> These revenues will be allocated from 2022, once the Department of Finance certifies the amount collected in 2021. As mentioned above, a significant portion of health taxes shall be allocated to UHC:

- 50% of the revenues from excise taxes on sugar-sweetened beverages, tobacco and alcohol will be allocated to the DOH. Of the 50%, 80% will be allocated to the Philippine Health Insurance Corporation (PhilHealth) for UHC implementation and 20% for the Health Facility Enhancement Program;
- 100% of the revenues from excise taxes on e-cigarettes and vapour products will be allocated to the DOH, of which 80% will be allocated to PhilHealth for UHC implementation and 20% for the Health Facility Enhancement Program.

## Mental health policy and legislation

Substantial progress was made in policies and plans in the Philippines in the past decade, with significant political support. Health policies and plans of Government agencies have recently been supported by legislation. The Philippines passed the Mental Health Act in 2018 (Republic Act 1103) (5), which ensures the universal right to care for mental, neurological and substance use disorders. It provides a rights-based mental health bill and a comprehensive framework for optimal mental health care in the Philippines.

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8 Most appropriations for UHC shall be from “sin tax” collections, income from the Philippine Amusement Gaming Corporation, Charity Fund, Documentary Stamps and contributions of the Philippine Charity Sweepstakes Office, contributions from PhilHealth members and Government funds for national agencies (UHC Act 2018).

The Act comes at an opportune time, when the country is implementing reforms towards UHC, providing opportunities to increase the range of mental health interventions covered by national health insurance. The Universal Health Care Act (Republic Act No. 11223) (4), which passed into law in 2019, automatically enrolls all Filipinos in the National Health Insurance Program and prescribes complementary reforms in the health system, shifting the emphasis to health promotion and primary care.

## **Multisectoral strategy and coordination**

The Mental Health Act establishes the Philippine Council on Mental Health (PCMH) to oversee and coordinate its implementation. The Secretary of Health chairs the PCMH, and six Government ministries and agencies are represented, nominated by the President, as well as academia and civil society. The PCMH will form several technical working groups. The DOH, in coordination with WHO, established a technical working group for development of a PCMH strategic plan, composed of representatives from the Government, people with lived experience of mental health problems, service providers and academia. The group developed the Council's Mental Health Strategic Plan 2019–2023 (6), with separate action plans for prevention, promotion, governance, information systems and mental health services. The strategic plan provides the overall direction for implementation of the Mental Health Act, recognizing the importance of multisectoral coordination: "a whole of government and whole of society approach is needed to address relevant risk factors and strengthen environments to promote mental health at a population level". The strategic plan also recognizes the perspective of the Lancet Commission on Global Mental Health and Sustainable Development (30) for reframing and reorienting mental health according to three principles: broadening the approach to mental health rather than focusing on clinically defined mental disorders, recognizing social and environmental influences as well as genetics within a convergent approach to mental health, and recognizing mental health as a fundamental human right for all.

One of the objectives of the PCMH is to "integrate strategies promoting mental health in educational institutions, workplace, and in communities". The Mental Health Act mandates the Department of Education and the Department of Labour and Employment to implement policies and programmes for mental health in prevention, promotion, advocacy, training, treatment, rehabilitation and referrals. Both departments have issued guidelines and are preparing rules and regulations for implementation. The Department of Education will pilot-test these rules and regulations in schools nationwide, with guidance counsellors and strong referral systems. Teachers will be trained to screen for "red flags" that indicate a mental health problem, and guidance counsellors will be trained to provide referrals and first-line interventions. Currently, only about one third of all schools have guidance counsellors. The national education curriculum already promotes mental health modules in several grades, and school health, one of the six flagship school programmes, will include mental health.

The Department of Social Welfare and Development assists individuals and families at risk and in crisis, including poor people and those with disabilities, and it oversees 71 centres and residential care facilities. Each centre should have a resident doctor and a psychologist, but most outsource mental health services. The Department also oversees the Pantawid Pamilyang Pilipino Program (4Ps), a conditional cash transfer programme for the poorest in order to improve health, nutrition and the education of the children aged 0–18. The 4Ps has served 4.4 million Filipinos and has included mental health in the family development sessions that are attended by the parents and guardians of household beneficiaries as a condition for receiving Government assistance.

**Box 1** outlines the contributions of non-health sectors to mental health.

### Box 1. Mental health: How do non-health sectors contribute?

Mental health, like other aspects of health, is affected by a range of socioeconomic factors. A comprehensive, coordinated response to mental health promotion, protection and care therefore requires partnerships among several sectors, including health care, education, employment, judiciary, housing and social welfare.

**Education:** Evidence-based school interventions for the socio-emotional skills of young people help build their resilience to adverse life events and encourage them to seek help early. Further, evidence-informed school programmes to reduce bullying, problem behaviour and substance misuse are necessary to reduce the rates of self-harm, suicide and mental health problems. Support services at schools can be a very important first line of help or referral point.

**Social welfare:** Individuals and households at risk must have legal protection (such as child welfare), social protection (such as support for low-income households) and financial protection (such as protection for people who are unemployed or in debt) to lower the risk of mental health problems. Family support programmes for those at risk improve the social and emotional skills of both children and parents.

**Employment:** Awareness campaigns and educational programmes in workplaces can build mental health literacy and encourage individuals to seek help early. Wellness at work positively affects productivity. Workplaces should offer accessible first-line mental health help or referrals for their employees.

**Housing:** Contact with green areas and good-quality living conditions are known to improve mental health.

**Judiciary:** Population-based restrictions on the availability and marketing of alcohol and tobacco can help reduce the incidence of mental health conditions in a population. Mental health problems are exacerbated by higher levels of smoking, alcohol and drug abuse as well as by obesity and poor nutrition (31).

## Development priorities and international response

The aims of Vision 2040 (32) and the Philippine Development Plan 2017–2022 (33) are to reduce poverty, partly by increasing resilience and decreasing exposure to risk. Access to mental health care under UHC is therefore crucial and will allow the Philippines to maximize its demographic dividend. The national health development plan includes development of the mental health system.

The Philippines was selected as one of first six countries under the WHO Special Initiative for Mental Health for assistance in integrating mental health into primary health care under UHC. The WHO Country Office has completed a rapid assessment of the Filipino mental health system (29), and the Special Initiative will increase access to high-quality, affordable mental health care. The Government of Philippines and the United Nations Resident Coordinator's office signed a Partnership Framework for Sustainable Development (2019–2023) in November 2018, which includes NCDs but does not explicitly mention mental health.

Within the United Nations country team, the International Organization for Migration addresses mental health by screening all migrants for mental illness. It also works with displaced persons during emergencies, prioritizing psychosocial support. The United Nations Children's Fund is increasingly including mental health and psychosocial programmes in most of its focus areas, including parenting, adolescent health, child protection and education.

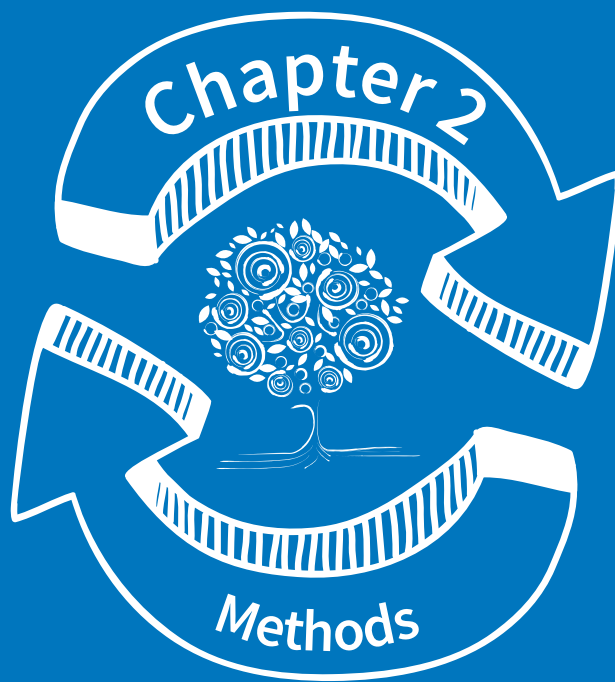
The US Agency for International Development is funding "Renew health", a community-based drug abuse reduction programme working at 21 sites, specifically in small rural municipalities that are difficult to access. The Asian Development Bank is to provide a US\$ 400 million loan to the Philippines under its health facilities development programme.

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## METHODS

A multiagency, multidisciplinary team comprising staff from the Philippines' Ministry of Health, WHO, the United Nations Inter-Agency Task Force on the Prevention and Control of Non-communicable Diseases, UNDP, Deakin University (Geelong, Australia), the Centre for Healthcare Quality Assessment and Control of the Ministry of Health of the Russian Federation and the Moscow Research and Clinical Centre for Neuropsychiatry undertook an initial mission to the Philippines between 24 and 28 February 2020 to construct a mental health investment case for the Philippines, complemented by an institutional context analysis. The team consisted of health economists, social development specialists and mental health and public health experts. Intensive follow-up (described below) was undertaken during collection and analysis of data.

This section outlines the methods and economic models used at various stages of the economic analysis:

- estimating the economic burden attributable to mental health conditions in terms of direct costs (i.e. Government and health care expenditures) and indirect costs (i.e. productivity losses due to absenteeism, presenteeism and premature death);
- costing of interventions;
- assessment of intervention health impacts; and
- analysis of ROI.

This section also briefly describes the methods for the institutional context analysis.

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## Estimation of the economic consequences of mental health conditions

A model was developed to estimate the economic burden attributable to mental health conditions, comprising the current direct and indirect costs of mental health conditions in the Philippines. Population data were obtained by age and sex for the period 2020–2040 from the United Nations Department of Economic and Social Affairs World Population Prospects study. The OneHealth tool (**Box 2**) was used to model prevalence and mortality rates by age and sex for the following six mental health conditions: depression, anxiety, psychosis, bipolar disorder, epilepsy and alcohol use disorder. The model allowed estimation of projected prevalence and mortality for each condition between 2020 and 2040, while holding current rates constant.<sup>9</sup> These projections were summarized as total prevalence and mortality for the entire population and for the working-age population (aged 15–64 years).

### Box 2. OneHealth tool and its mental health module

The OneHealth tool is software designed for national strategic health planning in low- and middle-income countries. Development of the tool is overseen by a group consisting of experts from United Nations agencies and development institutions. A mental health module was devised as part of the tool for estimating the costs and health impacts of mental health services and interventions at population level. The module allows estimation of the number of people living with mental health conditions in a country and linkage of the epidemiology of mental health conditions to national life tables for estimation of the numbers of cases averted and healthy life-years gained over time at population level.

<sup>9</sup> The model estimated growth in prevalence and mortality due to population growth only – not growth in disease rates.

The direct and indirect economic burden of mental health conditions in the Philippines was estimated according to the steps listed below.

<b>1</b>	<b>ESTIMATION OF TOTAL GOVERNMENT EXPENDITURES ON MENTAL HEALTH</b>
	Total government expenditure on mental health was estimated as the sum of the current Philippine mental health budget and total Government subsidies for inpatient and outpatient mental health care by PhilHealth during 2019. This estimate represents the total direct economic burden of mental health conditions in the Philippines. It excludes non-health care costs such as transport, waiting times and informal care.
<b>2</b>	<b>ESTIMATION OF INDIRECT ECONOMIC BURDEN</b>
	To estimate the indirect economic burden, the annual value (in terms of economic output) of each full-time worker in the Philippines was calculated from the GDP per employed person, defined as the country's GDP (16 680 billion PHP in 2018) divided by its total employed labour force. Local data on the total labour force aged $\geq 15$ years, the unemployment rate and the labour force participation rate were used to determine the total employed labour force.
<b>3</b>	<b>MENTAL HEALTH CONDITIONS AND WORKER PRODUCTIVITY</b>
	Data were included on the extent to which mental health conditions reduce worker productivity. As in a previous global ROI study (34), rates from the World Mental Health Surveys were used to describe: (i) the reduction in labour force participation due to each of the six mental health conditions; (ii) the reduction in full-time hours worked due to mental health-related absenteeism; and (iii) the reduction in productivity due to mental health-related presenteeism.
<b>4</b>	<b>WORKERS WITH A MENTAL HEALTH CONDITION</b>
	The number of Filipino workers with a mental health condition during 2018 was determined from data on labour force participation, unemployment and mortality. First, all people aged 15–64 years with a mental health condition were entered, and those who were not participating in the labour force, were unemployed, could not participate in the labour force because of their mental health condition or had died were subtracted.
<b>5</b>	<b>CALCULATING ECONOMIC LOSSES</b>
	The final step was calculation of the economic losses attributable to absenteeism, presenteeism and premature death among workers with each mental health condition. The relevant productivity figures found in the second step were applied to the eligible population determined in the third step and multiplied by the GDP per employed person. This calculation resulted in the total indirect economic burden of mental health conditions in the Philippines.

## Calculation of the costs and health effects of clinical and population-based interventions

The OneHealth tool was used to estimate costs arising from several clinical interventions for each of the six mental health conditions (depression, anxiety, psychosis, bipolar disorder, epilepsy and alcohol use disorder). Custom-built Excel® models were then used to estimate the costs associated with the following population-based mental health interventions: a nationwide regulatory ban on highly hazardous pesticides to prevent suicide and universal and indicated delivery of social-emotional learning (SEL) programmes to adolescents in schools to prevent depression, anxiety and suicide. Each intervention modelled in the OneHealth tool and the custom-built Excel® models contained assumptions made by WHO experts about the quantity of resource items required for implementation and enforcement at national level. In line with the methodological guidance for mental health investment cases (1), the main categories of resource cost were:

- **inpatient care:** for people with mental health conditions who require hospitalization (e.g. 5% of moderate–severe cases of depression, for an average stay of 14 days);
- **outpatient and primary care:** for most cases who require regular outpatient visits (e.g. from four visits per case per year for basic psychosocial treatment or pharmacological management to monthly or bi-monthly visits for moderate–severe cases for intensive psychological treatment);
- **medication:** essential psychotropic medications, including anti-psychotics, antidepressants and anti-epileptics; and
- **programme costs and shared health system resources:** these include programme management and administration, training and supervision.

Unit costs for each resource item were obtained from local sources (e.g. the Philippine DOH, the 2019 Drug Price Reference Index and Salary Standardization Law) and the WHO-CHOICE database (35, 36).

To estimate the health impact of these interventions, a population-based model was used in the OneHealth tool to calculate the number of healthy years of life lived in the population at current and target levels of coverage (see Table 1). Healthy life years include both expected changes in life expectancy (e.g. as a result of a decrease in the case fatality rate after introduction of a pesticide ban) and also non-fatal health outcomes (e.g. reduced incidence or duration of depressive episodes after treatment). Default effect sizes for the modelled interventions are taken from WHO's cost-effectiveness work programme and are summarized in **Table 1**.

**Table 1. Interventions included in the mental health investment case**

Intervention	Baseline coverage (2020) (%)	Target coverage (2040) (%)	Health impacts assessed
<b>Anxiety disorders</b> (Service delivery setting: Primary health care)			
<b>Basic psychosocial treatment for mild cases</b>	5	30	Improved functioning / level of disability (7–12%) and rate of remission (36–42%) among people with anxiety disorder aged ≥ 15 years after adjustment for non-adherence (30–40%) <sup>10</sup>
<b>Basic psychosocial treatment and anti-depressant medication for moderate-severe cases</b>	5	40	
<b>Intensive psychosocial treatment and anti-depressant medication for moderate-severe cases</b>	1	30	
<b>Depression</b> (Service delivery setting: Primary health care)			
<b>Basic psychosocial treatment for mild cases</b>	5	30	Improved functioning / level of disability (4–9%) and rate of remission (15–25%) among people aged ≥ 15 years with depression, after adjustment for non-adherence (30–40%) <sup>11</sup>
<b>Basic psychosocial treatment and anti-depressant medication of first episode moderate-severe cases</b>	5	40	
<b>Intensive psychosocial treatment and anti-depressant medication for first episodes of moderate-severe cases</b>	5	30	
<b>Intensive psychosocial treatment and anti-depressant medication for recurrent moderate-severe cases episodically</b>	5	30	As above, plus reduced incidence of recurrent episodes (28%), after adjustment for non-adherence (30%)
<b>Psychosis</b> (Service delivery setting: Secondary health care)			
<b>Basic psychosocial treatment plus mood-stabilizing medication</b>	20	60	Improved functioning / level of disability among people aged ≥ 15 years with bipolar disorder (22–29%, after adjustment for adherence) <sup>12</sup>
<b>Intensive psychosocial intervention plus mood-stabilizing medication</b>	5	30	
<b>Bipolar disorder</b> (Service delivery setting: Secondary health care)			
<b>Basic psychosocial treatment plus mood-stabilizing medication</b>	20	60	Improved functioning / level of disability among people aged ≥ 15 years with bipolar disorder (22–29%, after adjustment for adherence) <sup>13</sup>
<b>Intensive psychosocial intervention plus mood-stabilizing medication</b>	5	30	

10 Details of treatment impacts are provided in reference 34.

11 Details of treatment impacts are provided in references 34 and 37.

12 Details of the model and its parameters are provided in reference 39.

13 Details of the model and its parameters are provided in reference 39.

Intervention	Baseline coverage (2020) (%)	Target coverage (2040) (%)	Health impacts assessed
<b>Epilepsy</b> <i>(Service delivery setting: Primary health care)</i>			
<b>Basic psychosocial treatment plus antiseizure medication</b>	40	90	Improved functioning / level of disability (47%) and rate of remission (60%) among people aged ≥ 1 year with epilepsy, after adjustment for non-adherence (30%) <sup>14</sup>
<b>Alcohol use disorder</b> <i>(Service delivery setting: Secondary health care)</i>			
<b>Identification and assessment of new cases of alcohol use/dependence</b>	5	30	Improved rate of remission (10–15%) among people aged ≥ 15 year with alcohol use disorder, after adjustment for non-adherence (50%)
<b>Brief interventions and follow-up for alcohol use/dependence</b>	5	30	
<b>Management of alcohol withdrawal</b>	5	30	
<b>Relapse prevention medication for alcohol use/dependence</b>	1	30	
<b>Population-based mental health interventions</b>			
<b>Nationwide regulatory ban on highly hazardous pesticides to prevent suicide</b>	70	100	A relative risk reduction in the incidence of pesticide-related suicide (35%), subsequently linked to overall suicide and mortality in the population
<b>Universal school-based SEL interventions to prevent depression/anxiety and suicide in adolescents aged 12–17 years</b>	5	100	A relative risk reduction in the incidence of depression and anxiety (16%) and of suicide (5.8%) among adolescents attending school <sup>15</sup>
<b>Indicated school-based SEL interventions to prevent depression/anxiety and suicide in adolescents aged 12–17 years</b>	5	100	A relative risk reduction in the incidence of depression and anxiety (27%) and of suicide (5.8%) among indicated adolescents attending school <sup>15</sup>

14 Details of the model and its parameters are provided in reference 40.

15 Details of the models that were developed and populated are provided in two background papers prepared and presented by Dr Yong Yi Lee and others at an expert consultation held at WHO headquarters on 20–21 August 2019, which are being submitted for publication in a peer-reviewed academic journal.

SEL interventions are summarized in **Box 3**.

### **Box 3.** School-based social–emotional learning (SEL) interventions

The onset of depression and suicide increases rapidly during adolescence (10–19 years). Prevention of depression and suicide during these crucial developmental stages could result in substantial health gains during the life-course of an individual. School-based SEL interventions to prevent depression and/or suicide typically involve a trained facilitator (e.g. a teacher, health professional or lay worker) who delivers a series of modules to teach young people psychotherapeutic strategies to improve overall well-being and/or reduce their risk of poorer mental health outcomes. Evidence has been published that school-based SEL interventions targeting adolescents are effective in reducing the incidence of depression and/or suicide (41–43). Schools are increasingly being recognized as an important platform for population delivery of preventive mental health interventions to young people (44, 45). School psychological interventions are one of two types: universal interventions, which target all students, regardless of their risk profile, and indicated interventions, for students identified as having a high risk of depression and/or suicide completion (usually by scoring a checklist of mental health symptoms/indicators of suicide risk). People who are targeted for indicated interventions are often described as having subthreshold depression, i.e. symptoms just below the threshold for a full diagnosis of mental illness.

## **Analysis of return on investment**

The benefit–cost ratio is used to evaluate the efficiency of health investments in terms of their ROI. It is a direct comparison of the present value of the impacts on health and productivity of an intervention with the present value of intervention costs. Future impacts on health and productivity and future intervention costs were discounted to their present value to account for the time value of money, whereby a unit of currency obtained in the future is worth less than the same unit of currency obtained in the present. An Excel® model was developed by WHO for the ROI analysis, which provided estimates of the economic gains that accrue from investing in a range of cost–effective mental health interventions previously identified by WHO. Table 1 lists the clinical and population-based interventions included.

Estimates were made of how each of the mental health interventions listed above, except psychosis, bipolar disorder and epilepsy, would improve national productivity, measured in terms of GDP. The first addressed increasing labour force participation through avoided mortality and avoided illness. The economic value of increases in the healthy labour force due to avoided mortality were calculated by taking the total number of deaths avoided, adjusting this number to account for those who participate in the labour force and are currently employed and then multiplying by the net present value of foregone GDP per capita over the model time horizon of 20 years. The economic value of increases in the healthy labour force due to avoided cases of



illness were calculated by taking the total number of prevalent cases averted, applying the same employment-related adjustments as above, multiplying by the annual GDP per employed person and then further multiplying the result by 5% (i.e. the increase in labour force participation among those with a mental health condition who receive treatment). The 5% increase in labour force participation was based on the findings from a previous global ROI study, in which 5% restored productivity was assumed after mental health treatment (34).

The second estimate was for reducing absenteeism and presenteeism. The economic value of reducing absenteeism and presenteeism was estimated in the same way. In this case, however, multiplication by 5% represented the decrease in absenteeism and presenteeism among those with a mental health condition who received treatment. The 5% reductions in absenteeism and presenteeism were based on findings from a previous global ROI study, in which 5% restored productivity was assumed after mental health treatment (34).

Productivity gains resulting from each mental health intervention (with the exception of psychosis, bipolar disorder and epilepsy) were calculated as the sum of the productivity gains attributable to increased labour force participation (by avoided mortality and illness) and reduced absenteeism and presenteeism. In the case of universal and indicated school-based interventions for adolescents, only productivity gains due to increased labour force participation could be estimated. Productivity gains due to reduced absenteeism and presenteeism were not estimated for the school interventions, as they are not relevant to people of non-working age, and there is currently no established method for determining how impacts on educational attainment during adolescence (which can be improved by preventing mental ill health) translate into better earning potential later in life.

A different method was used to estimate restored productivity due to treatment of psychosis, bipolar disorder and epilepsy, because of the absence of data on labour force outcomes for people with these conditions. A Lancet commission on investing in health determined that the value of a healthy life year gained is approximately 1.5 times GDP per capita (46, 47). Two thirds of this value (1.0 times GDP per capita) is attributable to the instrumental value of improved health, i.e. economic or productivity-related gains. Conversely, one third (0.5 times GDP per capita) is attributable to the intrinsic value of health, i.e. its social value or the value of health as an end in itself. Recent international guidelines for benefit–cost analysis (48) recommend, however, that the intrinsic value of health be valued fully (at 1.5 times GDP per capita) and counted in addition to the productivity-related value of being able to work or increase earnings. For the current analysis, productivity gains for psychosis, bipolar disorder and epilepsy were estimated by taking the total healthy life years gained by an intervention, multiplying this by the GDP per capita for the Philippines and further multiplying the result by a factor of 1.0 (i.e. the instrumental value of health as a multiple of GDP per capita). In a sensitivity analysis, separate assessments were made in order to determine how baseline results might change under different assumptions: application of this imputed method to the other mental health conditions assessed; and a 50% reduction (halving) of the instrumental economic value assigned to 1 year of healthy life (i.e. 0.5 times GDP per capita).

The concept of healthy life years gained is explained in **Box 4**.

#### Box 4. Healthy life years gained

“Healthy life years gained” (equivalent to disability-adjusted life years averted) is commonly used in the global health literature as a summary measure of population health. National life tables are used to compute healthy life years, which reflect the combined time spent by the population in a state of health with a known degree (or absence) of disability. A disability weight ranging from 0 (denoting death) to 1 (denoting perfect health) is used to adjust the time spent in a particular health state. For example, if a person lives with disease X for 10 years and the disability weight for disease X is 0.4, the total healthy life years gained for that person is 4 (10 multiplied by 0.4).

The ROI for each intervention was calculated by comparing the productivity gains produced by the intervention (measured as an increase in GDP) with the total costs of setting up and implementing the intervention. Projected costs and projected productivity gains were estimated with the net present value approach and a 3% annual discount rate.

In addition to calculating the productivity gains attributable to each mental health intervention, separate estimates were made of the intrinsic value of improving health as an end in itself. The social value of one healthy life year gained has previously been estimated to be 1.5 times GDP per capita (46, 47). The social value of health was subsequently estimated by multiplying the total healthy life years gained by an intervention by the GDP per capita of the Philippines, then further multiplying by a factor of 1.5. Addition of productivity gains and the social value of health represents the total economic gains produced by the mental health interventions.

The ROI metrics presented in this report are the benefit-to-cost ratio, defined as the present value of total health and/or productivity gains divided by the present value of total intervention costs, and the ROI ratio, defined as the present value of total health and/or productivity gains minus the present value of total intervention costs, divided by the present value of total intervention costs (1).

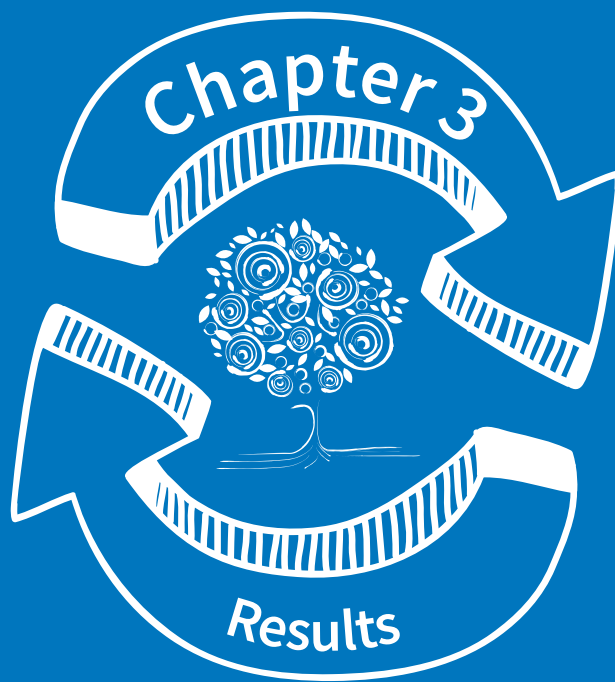
## Analysis of the institutional context

The economic analysis was complemented by an analysis of the institutional context conducted by the investment case team during the mission to Manila in February 2020. This analysis was based on discussions with representatives of the:

- Philippine Council for Mental Health
- DOH
- Department of Trade and Industry
- Department of Finance
- Philippine Information Agency
- Department of Labour and Employment
- Department of Social Welfare and Development
- Department of Education
- Commission on Higher Education
- Commission on Human Rights
- Technical Education and Skills Development Authority
- Philippine Health Insurance
- National Economic and Development Authority
- Food and Drug Administration
- Asian Development Bank
- Labour Unions
- United Nations Country Team
- civil societies and service users
- academia
- other development partners

These representatives discussed how mental health affects the national development agenda, the priorities of various sectors and stakeholders and how they could strengthen a whole-of-government response, including implementation of the interventions analysed. The valuable insights gained from these discussions are incorporated throughout this report and informed its findings and conclusions.





## RESULTS

This section describes the economic burden of mental health conditions, summarizes the components of the ROI analysis, including health impacts, economic gains and total costs, and discusses the benefit–cost ratio and ROI for each intervention package.

### Economic burden

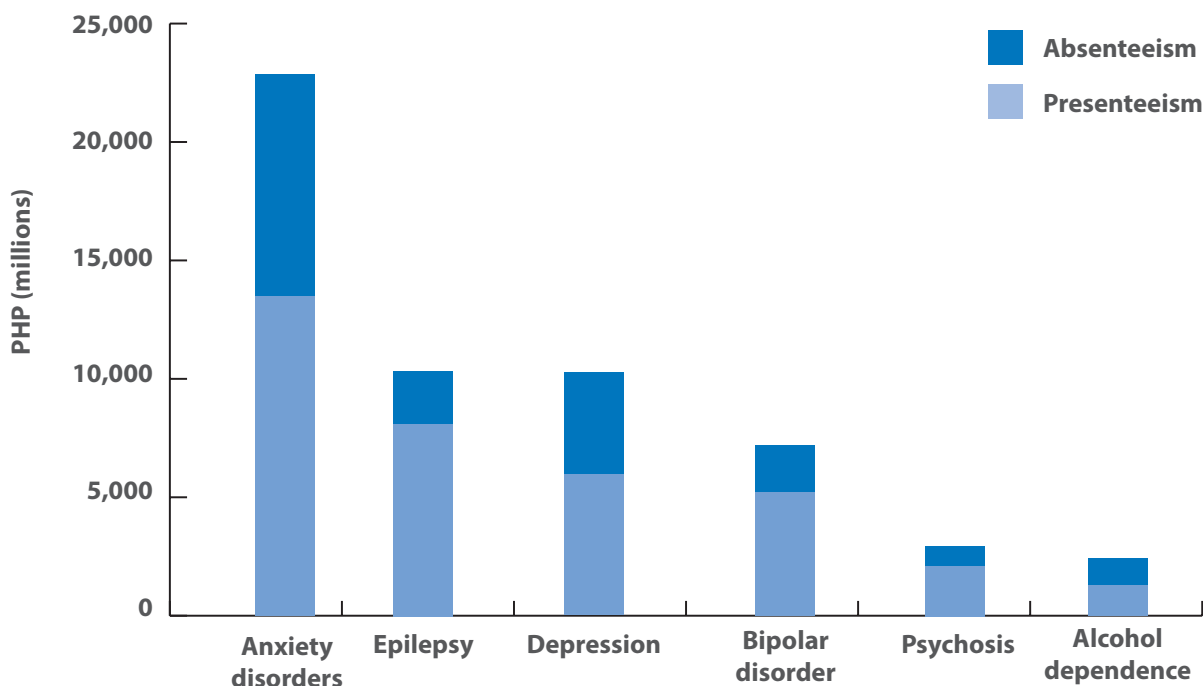
#### Direct costs

The total Philippine budget for mental health (excluding PhilHealth, capital costs and infrastructure) was 2 590.6 million PHP (US\$ 51.4 million) in 2019. Total PhilHealth subsidies for inpatient and outpatient mental health care during 2019 amounted to 99.6 million PHP (US\$ 2 million). Government health expenditures could not be disaggregated by mental health condition.

#### Indirect costs

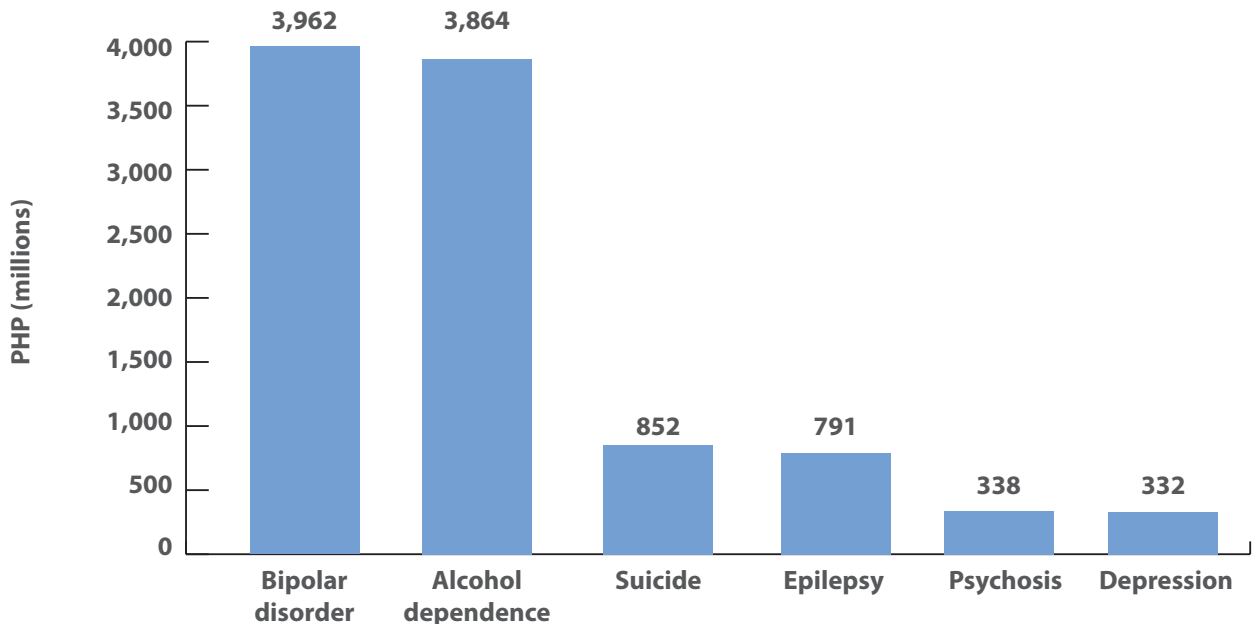
The indirect economic losses caused by mental health conditions were estimated as the sum of losses due to absenteeism, presenteeism and premature death. The total combined cost of absenteeism and presenteeism in the Philippines is presented in Fig. 1. The total number of working days absent was estimated to be 26.3 million for absenteeism and 14.4 million for presenteeism, which resulted in a total cost of 56.0 billion PHP (US\$ 1.1 billion) in 2019. Absenteeism and presenteeism costs are highest for anxiety disorders. Although anxiety is associated with fewer days off work than depression for the average individual, the estimated prevalence of anxiety in the Philippines is much higher than that for depression.

**Fig. 1. Costs of absenteeism and presenteeism for mental health conditions (2019 PHP, millions)**



The total costs of premature death due to mental health conditions were estimated to be 10 140 million PHP (US\$ 201 million) in 2019 (**Fig. 2**).

**Fig. 2. Costs of premature death for mental health conditions (2019 PHP, millions)**



Bipolar disorder and alcohol dependence are the costliest mental health conditions in terms of premature death, which is due to the high excess mortality estimated for these two conditions in the Global Burden of Disease study, which is the source of the epidemiological data in the OneHealth tool (e.g. 10 times more estimated deaths in the population than due to depression or psychosis). High mortality among cases of alcohol dependence was due to various causes of death, from cancers to injuries (e.g. traffic accidents and falls). Anxiety disorders do not lead to death but, as described above, are associated with a high economic burden due to absenteeism and presenteeism.

### **Total economic costs**

**Table 2** shows the total direct and indirect costs of mental health conditions in the Philippines. The indirect economic losses are much higher than the direct losses. Total Government expenditure on health care for mental health conditions was 2591 billion PHP (US\$ 51.4 million), and PhilHealth provided 100 million PHP (US\$ 2.0 million) in health care subsidies. In addition, the losses to the economy due to absenteeism, presenteeism and premature death amounted to 66.2 billion PHP (US\$ 1.31 billion).

**Table 2. Economic burden of mental health conditions in the Philippines (2019 PHP, millions)**

Cost	Total costs (2019 PHP, millions)	Total costs (2019 US\$, millions)
<b>Direct costs</b>		
<i>Health care</i>		
Health care expenditure	2 591	51.4
Disability support payments	100	2.0
Total direct costs	2 691	53.4
<b>Indirect costs</b>		
Absenteeism	36 170	717.7
Presenteeism	19 861	394.1
Premature deaths	10 140	201.2
Total indirect costs	66 171	1 312.9
<b>Total</b>	<b>68 861</b>	<b>1 366.3</b>

The total economic burden of the selected mental health conditions on the Philippine economy in 2019 is 68.9 billion PHP (US\$ 1.37 billion), equivalent to 0.41% of the GDP in 2018.

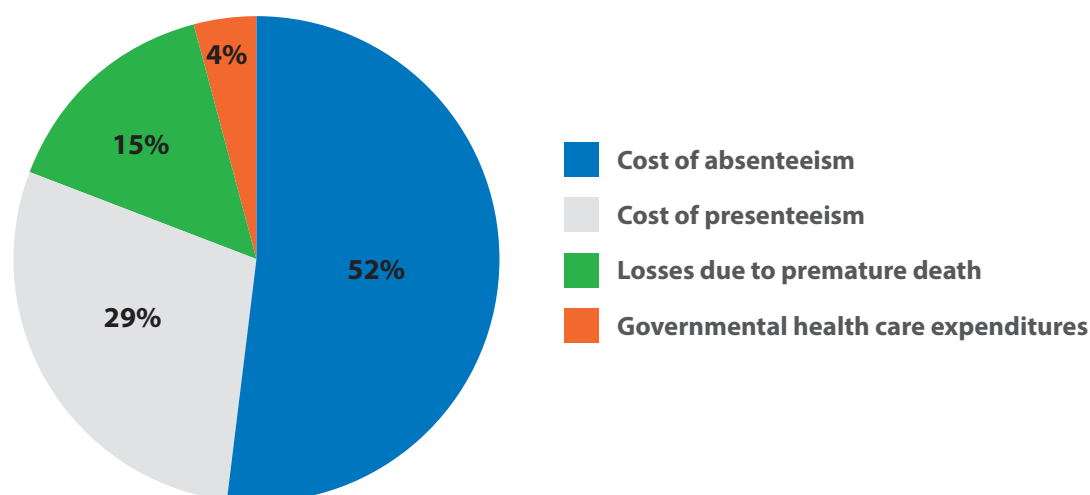
**Fig. 3.** shows the structure of the economic burden of mental health conditions in the Philippines in 2019. Government health care expenditure represented only 4% of all mental health-related costs, representing a minor proportion of the economic burden.

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**Fig. 3. Structure of the economic burden of mental health conditions in the Philippines**



### Costs of intervention

The costs of the interventions were estimated for the period 2020–2040. **Table 3** shows the absolute costs during each of the first 5 years of this period plus the 10-year and 20-year total costs. **Table 4** shows the corresponding per capita costs.

**Table 3. Estimated absolute costs of interventions (PHP, millions), 2020–2040**

Mental health intervention package	2020	2021	2022	2023	2024	Total for 10 years	Total for 20 years
Anxiety disorders	203	344	488	634	783	10 438	24 671
Depression	202	289	380	472	567	7 410	16 859
Psychosis	1 477	1 693	1 914	2 140	2 373	29 050	57 101
Bipolar disorder	3 101	3 586	4 086	4 601	5 130	63 168	126 050
Epilepsy	520	547	575	605	636	7 387	12 377
Alcohol use/dependence	230	351	477	607	741	9 814	22 936
Pesticide ban	415	190	190	190	184	2 373	2 038
Universal school-based SEL intervention	92	103	784	784	784	7 534	11 264
Indicated school-based SEL intervention	151	162	614	614	614	6 116	9 072
<b>Total</b>	<b>6 392</b>	<b>7 265</b>	<b>9 507</b>	<b>10 648</b>	<b>11 812</b>	<b>143 291</b>	<b>282 368</b>

**Table 4. Estimated per capita costs of interventions (PHP), 2020–2030**

Mental health intervention package	2020	2021	2022	2023	2024	Total for 10 years	Total for 20 years
Anxiety disorders	1.9	3.1	4.4	5.8	7.1	95.1	224.8
Depression	1.8	2.6	3.5	4.3	5.2	67.5	153.6
Psychosis	13.5	15.4	17.4	19.5	21.6	264.7	520.4
Bipolar disorder	28.3	32.7	37.2	41.9	46.8	575.7	1 148.7
Epilepsy	4.7	5.0	5.2	5.5	5.8	67.3	112.8
Alcohol use/dependence	2.1	3.2	4.3	5.5	6.8	89.4	209.0
Pesticide ban	3.8	1.7	1.7	1.7	1.7	21.6	18.6
Universal school-based SEL intervention	0.8	0.9	7.1	7.1	7.1	68.7	102.6
Indicated school-based SEL intervention	1.4	1.5	5.6	5.6	5.6	55.7	82.7
<b>Total</b>	<b>58.3</b>	<b>66.2</b>	<b>86.6</b>	<b>97.0</b>	<b>107.6</b>	<b>1 305.8</b>	<b>2 573.3</b>

Clinical interventions for bipolar disorder incurred the largest estimated costs (because of the multiple care and support needs and the higher estimated prevalence than other severe mental health conditions such as psychosis). Implementation of the entire clinical intervention package would cost 63.2 billion PHP (or 576 PHP per capita) over the 10-year scaling-up period and 126.1 billion PHP (or 1 149 PHP per capita) over the 20-year scaling-up period.

The total costs for the three population-based mental health interventions (pesticide ban, universal and indicated school-based SEL interventions) were among the lowest of all intervention packages. Altogether, these would cost 16.0 billion PHP (or 146 PHP per capita) over 10 years and 22.3 billion PHP (or 204 PHP per capita) over 20 years.

Interventions involving intensive psychosocial treatment and anti-depressant medication have large planned costs. Nevertheless, numerous low-cost interventions exist, including basic psychosocial treatment (for anxiety disorders and depression particularly) and the nationwide regulatory ban of highly hazardous pesticides.

## Health impacts

All the interventions significantly increase the total number of healthy life years gained (absolute results presented in **Table 5**). The greatest impacts were observed for interventions for epilepsy (174 415 healthy life years gained over 10 years) and depression (171 394), followed by clinical interventions for anxiety disorders (115 306) and the universal school-based SEL intervention (110 154).

**Table 5. Estimated absolute health impacts**

Mental health package	Total healthy life-years gained		Prevalent cases averted		Total deaths avoided	
	20 years	10 years	20 years	10 years	20 years	10 years
Anxiety disorders	572 815	115 306	2 775 019	491 390	0	0
Depression	725 734	171 394	1 754 847	414 690	3 429	767
Bipolar disorder	193 065	47 044	Not applicable	0	Not applicable	0
Psychosis	184 606	44 394	Not applicable	0	Not applicable	0
Epilepsy	774 199	174 415	1 120 604	214 938	7 009	1 213
Alcohol use/dependence	263 909	47 021	667 539	137 130	14 149	2 632
Pesticide ban	15 468	8 181	0	0	681	344
Universal school-based SEL intervention	269 910	110 154	1 172 332 <sup>a</sup>	462 111 <sup>a</sup>	750 <sup>b</sup>	377 <sup>b</sup>
Indicated school-based SEL intervention	15 190	6 106	70 388 <sup>a</sup>	27 761 <sup>a</sup>	23 <sup>b</sup>	12 <sup>b</sup>
<b>Total</b>	<b>3 014 897</b>	<b>724 015</b>	<b>7 560 729</b>	<b>1 748 020</b>	<b>26 041</b>	<b>5 344</b>

<sup>a</sup> Prevalent cases of depression or anxiety  
<sup>b</sup> Deaths due to suicides attributable to depression

Certain interventions also reduce mortality, either as a direct result of the intervention (pesticide ban, school-based SEL interventions) or because of a reduced prevalence of conditions that are associated with an excess rate of mortality (depression, alcohol use/dependence).

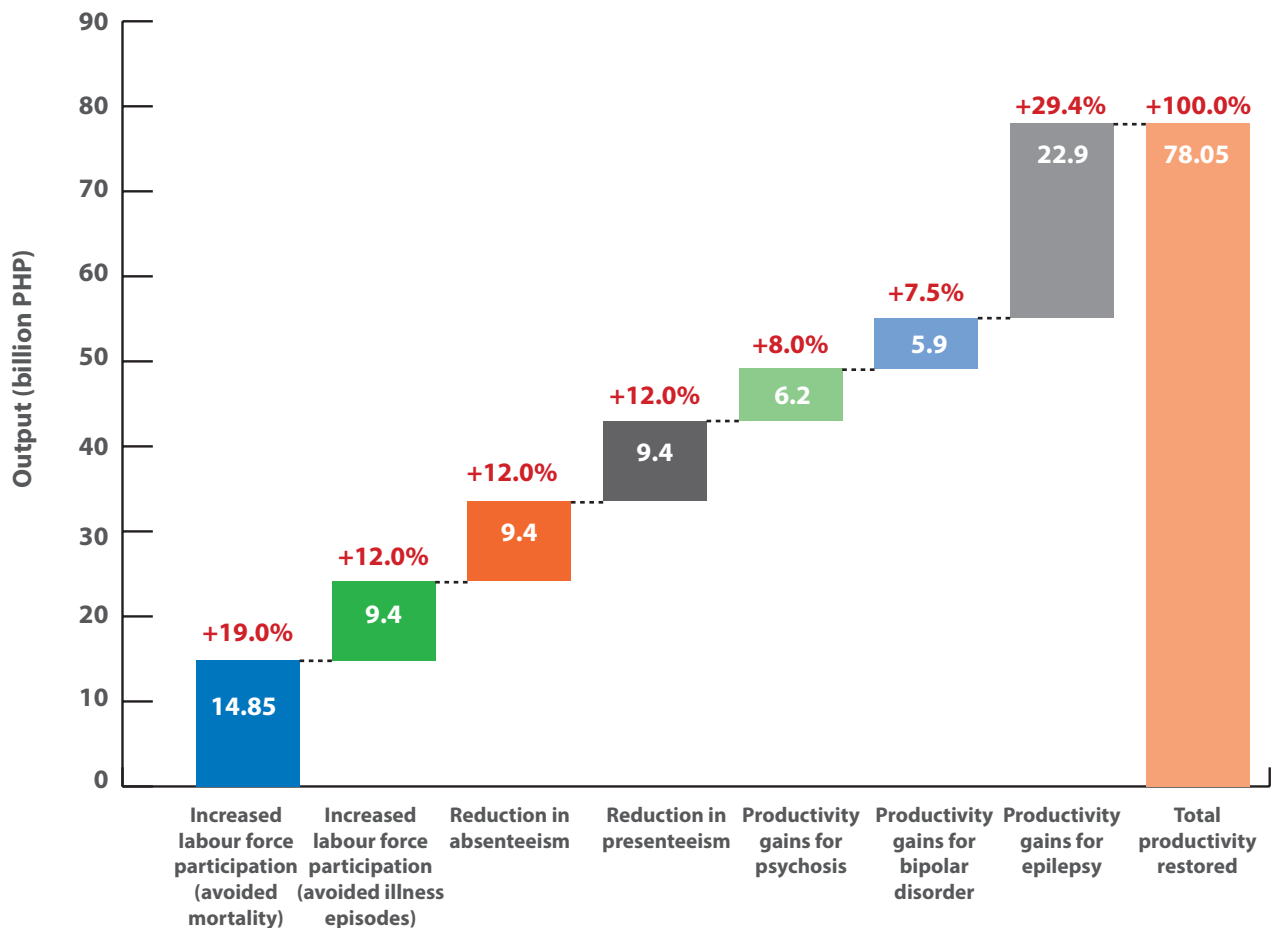
Bipolar disorder and psychosis are both rarer than conditions such as depression and anxiety, but they are severe mental health conditions that usually persist throughout the life of an affected individual. The main benefit of treatment is a reduction in the severity of symptoms and improvement in a person's daily functioning. This is reflected as a reduction in the disability weight

of these two mental health conditions. Hence, the primary impact on healthy life years gained is by reductions in the disability weight for these conditions and not reductions in the number of prevalent cases or deaths.

### Economic gains

The mental health conditions included in this analysis reduce labour force participation (due to premature mortality and cases of illness), lead to time off work due to illness (absenteeism) and impair job productivity while in the workplace (presenteeism). **Fig. 4.** demonstrates the labour productivity gains that would result from preventing deaths and reducing the prevalence and/or disability associated with each mental health condition over 10 years, as described in Table 5.

**Fig. 4. Recovered economic output expected from mental health interventions over 10 years**



Increased labour force participation and reductions in absenteeism and presenteeism are related to the following mental health conditions: anxiety disorders, depression, alcohol use/dependence and suicide.

For the mental health conditions other than psychosis, bipolar disorder and epilepsy, reduced mortality had an important impact (19%) on productivity due to increased labour force participation, followed by avoided cases of illness, reduced presenteeism and reduced absenteeism (each representing 12% of total productivity gains). In addition, productivity gains were seen from the treatment of psychosis (8%), bipolar disorder (7.5%) and epilepsy (29.4%). The mental health packages resulted in a net present value of 78 billion PHP in productivity gains over 10 years, which would accrue to 296 billion PHP over 20 years.

### Return on investment

Comparison of the total costs and productivity gains of each package of interventions shows that four of the packages (for alcohol use/dependence, anxiety disorder, depression and epilepsy) have benefit-cost ratios > 1 PHP for each 1 PHP invested over 10 years (Table 6).

**Table 6. Costs, benefits (productivity gains only) and benefit–cost ratios, by intervention package (2019 PHP, million)**

Intervention package	Total costs		Total gains	Productivity		Benefit–cost ratio (productivity gains only)		Return on investment (productivity gains only)	
	20 years	10 years	20 years	10 years	20 years	10 years	20 years	10 years	
Anxiety disorders	24 671	10 438	60 656	13 193	2.5	1.3	1.5	0.3	
Depression	16 859	7 410	47 751	13 654	2.8	1.8	1.8	0.8	
Psychosis	57 101	29 050	20 986	6 212	0.4	0.2	-0.6	-0.8	
Bipolar disorder	126 050	63 168	20 040	5 859	0.2	0.1	-0.8	-0.9	
Epilepsy	12 377	7 387	83 540	22 941	6.7	3.1	5.7	2.1	
Alcohol use/dependence	22 936	9 814	58 363	13 704	2.5	1.4	1.5	0.4	
Pesticide ban	2 038	2 373	2 180	1 268	1.1	0.5	0.1	-0.5	
Universal school-based SEL intervention	11 264	7 534	11 264	1 181	0.18	0.16	-0.8	-0.8	
Indicated school-based SEL intervention	9 072	6 116	9 072	36	0.007	0.006	-1.0	-1.0	
Total (all interventions)	282 368	143 291	282 368	78 049	1.0	0.5	0.0	-0.5	
<b>Total (benefit–cost ratio &gt; 1)</b>	<b>90 145</b>	<b>44 957</b>	<b>90 145</b>	<b>65 942</b>	<b>2.8</b>	<b>1.5</b>	<b>1.8</b>	<b>0.5</b>	

Interventions for epilepsy have the highest benefit–cost ratio: for 1 PHP invested in the package of these interventions, the expected return is 3.1 for 10 years and 6.7 PHP for 20 years. This is followed by the package of depression interventions, which provides a benefit–cost ratio of 1.8 over 10 years and 2.8 over 20 years; the alcohol use/dependence package with a benefit–cost ratio of 1.4 over 10 years and 2.5 over 20 years; and the anxiety disorders package with a benefit–cost ratio of 1.3 over 10 years and 2.5 over 20 years.

**Table 7** shows the impact of incorporating the social value of health in addition to productivity gains when calculating the benefit–cost ratio. (The social value of health is the intrinsic value of improving health as an end in itself, estimated to be one healthy life year gained multiplied by 1.5 times GDP per capita.) The benefit–cost ratios for the intervention packages for alcohol use/dependence, anxiety disorders, depression and epilepsy all increase substantially. More favourable benefit–cost ratios are also observed for banning highly hazardous pesticides and universal school-based SEL interventions. These interventions produced 1.2 and 3.0 PHP of economic benefit, respectively, for every 1 PHP spent over 10 years (2.4 PHP and 4.2 PHP for every 1 PHP spent over 20 years).

**Table 7. Costs, benefits (productivity gains plus social value of health) and benefit–cost ratios at 10 and 20 years, by intervention package (2019 PHP, million)**

Intervention package	Total costs		Total gains	Productivity	Benefit–cost ratio (productivity gains only)		Return on investment (productivity gains only)	
	20 years	10 years	20 years	10 years	20 years	10 years	20 years	10 years
Anxiety disorders	24 671	10 438	149 686	35 138	6.1	3.4	5.1	2.4
Depression	16 859	7 410	162 137	46 509	9.6	6.3	8.6	5.3
Psychosis	57 101	29 050	51 512	15 248	0.9	0.5	-0.1	-0.5
Bipolar disorder	126 050	63 168	49 189	14 381	0.4	0.2	-0.6	-0.8
Epilepsy	12 377	7 387	205 054	56 310	16.6	7.6	15.6	6.6
Alcohol use/dependence	22 936	9 814	98 969	22 612	4.3	2.3	3.3	1.3
Pesticide ban	2 038	2 373	4 897	2 885	2.4	1.2	1.4	0.2
Universal school-based SEL intervention	11 264	7 534	47 335	22 484	4.2	3.0	3.2	2.0
Indicated school-based SEL intervention	9 072	6 116	2 605	1 215	0.3	0.2	-0.7	-0.8
Total (all interventions)	282 368	143 291	771 382	216 782	2.7	1.5	1.7	0.5
<b>Total (benefit–cost ratio &gt; 1)</b>	<b>90 145</b>	<b>44 957</b>	<b>668 077</b>	<b>185 938</b>	<b>7.4</b>	<b>4.1</b>	<b>6.4</b>	<b>3.1</b>

Despite their low ROIs, the packages of interventions for psychosis and bipolar disorder are critical to ensure that the Philippines has the services necessary to support human rights objectives and the Agenda 2040 pledge to leave no one behind. These conditions are also usually highly disconcerting and disruptive to both the individuals experiencing them and to their families and communities. The ROI for these packages was lower than those for the other mental health interventions because treatment mainly reduces the disability weight of these disorders, rather than prevalence or mortality. Furthermore, these treatment options have less potential to increase labour force participation. The intervention packages for anxiety disorders, depression and epilepsy and the universal school-based SEL interventions are the clearest “best buys” for maximizing productivity gains, as they result in the highest ROIs over 10 and 20 years.

The ROIs of the three population-based mental health interventions may be underestimated for the following reasons. In the case of a regulatory ban on highly hazardous pesticides, productivity gains are due only to reductions in premature mortality (valued over the course of the model timeframe), without the impacts on absenteeism or presenteeism. At present, pesticides represent a relatively small proportion of all causes of suicide in the Philippines (about 4% of all suicides), which may also contribute to the low ROI. In addition, the method used to cost the intervention might overestimate the costs, as these do not account for existing pesticide regulations. As the Philippines already has a system for banning and regulating hazardous pesticides, the marginal cost of banning an additional pesticide would be fairly low. The only productivity gains that were valued for the universal and indicated school-based SEL interventions targeting adolescents were those due to reductions in premature mortality. There is presently no method for calculating the net present value of future gains in productivity or employment due to better educational outcomes among adolescents when they reach adulthood.

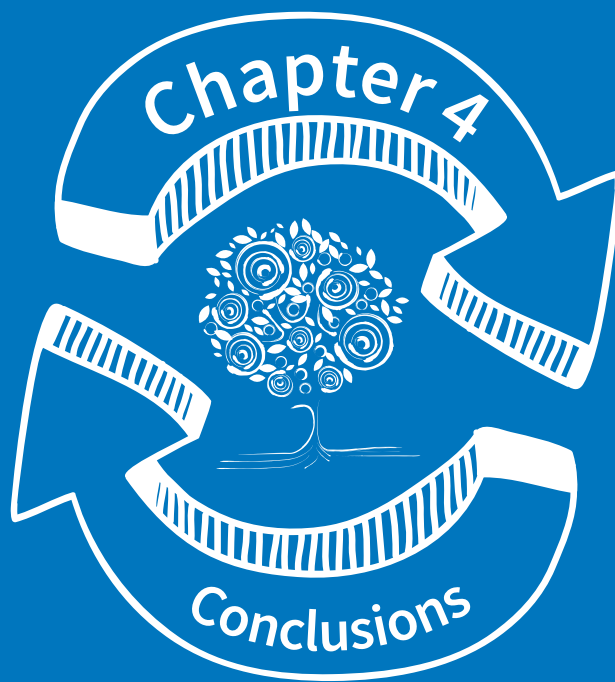
A one-way sensitivity analysis of the effect of halving the value attached to the instrumental value of a healthy life year (to 0.5 times GDP per capita) reduced the overall cost–benefit ratios for the interventions for psychosis, bipolar disorder and epilepsy by 20%; a further analysis, with application of the imputed value (of 1.0 times GDP per capita) for productivity gains to other conditions showed a substantial change for depression (overall cost–benefit ratio increased to 11.4) and alcohol use/dependence (overall cost–benefit ratio decreased to 3.0) but not for anxiety.



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## CONCLUSIONS

Many issues influence a country's decisions on how much to spend on mental health and, within mental health, the interventions to be prioritized. Choices differ among countries according to their demographics, conditions (including, for example, susceptibility to natural disasters), the priorities of local communities and other concerns. Mental health legislation, policy and strategic plans are central in indicating where changes and improvements are required. Critically important, however, in deciding whether, where and how to invest in mental health is the cost of interventions, their impacts and the ROI.

This analysis included nine possible interventions to improve mental health that are evidence based and have been recommended by WHO as important for improving mental health globally. Measurement of their costs and returns indicates high levels of return on most of them. One limitation of the analysis, however, is that these are not the only possible alternatives and should be considered by countries with other potential alternatives that they may consider relevant. For example, the Philippines may wish to add options such as mental health preparedness and response to natural disasters, maternal mental health programmes, provision of housing for people living with mental disorders and other options. Moreover, interventions that are more cost beneficial should not necessarily be prioritized over those that are less so, as emphasized in this report. Programmes for comprehensive care of people with severe conditions should not be compromised because of a lower ROI than, for example, interventions for people with depression.

Mental health conditions place a significant health, economic, social and sustainable development toll on Filipinos every year. In addition to their health and social impact, the investment case model estimated that these conditions caused 68.9 billion PHP (US\$ 1.37 billion) in total economic losses for the country in 2019. These losses include 2.7 billion PHP (US\$ 53 million) in direct Government expenditure and nearly 66.2 billion PHP (US\$ 1.31 billion) in indirect productivity losses, a total equivalent to 0.4% of the Philippine GDP in 2018.

Not only do mental health conditions impede the Philippines' efforts to increase efficiency in the health sector, reduce out-of-pocket expenditure and extend financial protection under universal health care coverage, but they also impede the country's broader development priorities of increasing human capital, reducing poverty and inequality and strengthening inclusive economic growth.

The aim of the Philippines' Mental Health Act and Mental Health Strategic Plan (2019–2023) is to improve the mental health of the population. This investment case provides substantial support for many of the directions outlined in the legislation and strategic plan. By providing detailed information on the financial returns that can be achieved by investing in mental health interventions, goals that might have been considered as aspirational because of economic constraints are shown to be not only affordable but to bring considerable returns. The investment case also provides evidence for future modifications and amendments to the legislation and policy. The results show that investment in selected evidence-based interventions could significantly reduce the adverse

consequences of mental health conditions and increase people's mental health and well-being, their life expectancy and quality of life while decreasing national productivity losses. Thus, these investments will contribute to the overall socio-economic development of the country, with "ripple effects" throughout society to accelerate economic growth and social development.

The investment case included clinical interventions to reduce the prevalence of and/or manage anxiety, depression, psychosis, bipolar disorder, epilepsy and alcohol use/dependence and also three population-based preventive mental health interventions. In economic modelling, account was taken of the baseline coverage of each intervention, with significant but realistic scaling-up of coverage. The main findings regarding the intervention packages are listed below.

- **Investing in all the modelled packages would save more than 5000 lives over 10 years** (more than 26 000 lives over 20 years) **and return 700 000 healthy life years to Filipinos** (3 million healthy life years over 20 years).
- **With respect to both productivity gains and the social value of health over 10 years, the packages for managing and reducing the number of cases of epilepsy and depression have the highest ROIs.**
  - » For epilepsy, every PHP invested in the modelled intervention package will return 6.6 PHP (15.6 PHP over 20 years). The overall cost over 10 years is 9.8 billion PHP (12.4 billion PHP over 20 years).
  - » For the package of depression interventions, every PHP invested will yield 5.3 PHP in return over 10 years (8.6 PHP over 20 years). The overall cost is 7.4 billion PHP (16.9 billion PHP over 20 years).
- **The interventions with the next highest return on investment over 10 years are for anxiety disorders (2.4), universal school-based SEL interventions (2.0) and alcohol use/dependence (1.3).** The packages would cost 10.4 billion, 7.5 billion and 9.8 billion PHP over 10 years, respectively.
- **The packages of interventions for psychosis and bipolar disorder have lower ROIs (benefit–cost ratios, 0.5 and 0.2, respectively) because they are relatively costly (29 and 63.2 billion PHP) and have less potential to increase labour force participation.** These packages are, however, critical to ensure that Filipinos have the necessary services to attain human rights objectives and the Agenda 2040 pledge to leave no one behind.

These interventions must also be accompanied by adoption of a broader perspective for mental health that accounts for the complex factors in the Philippines. The Philippines continues to confront growing mental health challenges associated with natural disasters, internal displacements, spousal violence, social deprivation and the COVID-19 pandemic, which require a broader framework of psychosocial interventions beyond individual clinical care.

## ESTIMATED HEALTH IMPACT

ALL INTERVENTION PACKAGES	10 years	20 years
LIVES SAVED	5 000	26 000
HEALTHY LIFE-YEARS GAINED	700 000	3 000 000

## PRODUCTIVITY GAINS AND SOCIAL VALUE OF HEALTH

MENTAL HEALTH PACKAGE	Total cost OVER 10 YEARS (PHP)	Total cost OVER 20 YEARS (PHP)	ROI FOR EVERY PHP INVESTED OVER 10 YEARS	ROI FOR EVERY PHP INVESTED OVER 20 YEARS
ANXIETY DISORDER	10.4 million	24.6 million	2.4	5.1
DEPRESSION INTERVENTIONS	7.4 million	15.8 million	5.3	8.6
PSYCHOSIS	29 million	57.1 million	-0.5	-0.1
BIPOLAR DISORDER	63.1 million	126 million	-0.8	-0.6
EPILEPSY INTERVENTIONS	7.4 million	12.4 million	6.6	15.6
ALCOHOL USE/DEPENDENCE	9.8 million	23 million	1.3	3.3
PESTICIDE BAN	2.3 million	2 million	0.2	1.4
UNIVERSAL SCHOOL-BASED SEL INTERVENTIONS	7.5 million	11.3 million	2.0	3.2
INDICATED SCHOOL-BASED SEL INTERVENTIONS	6.1 million	9 million	-0.8	-0.7

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## References

1. Mental health investment case: a guidance note. Geneva: World Health Organization, United Nations Development Programme; 2021 (<https://www.who.int/publications/item/9789240019386>).
2. Global health estimates 2016: Disease burden by cause, age, sex, by country and by region, 2000–2016. Geneva: World Health Organization; 2018 ([https://www.who.int/healthinfo/global\\_burden\\_disease/estimates/en/index1.html](https://www.who.int/healthinfo/global_burden_disease/estimates/en/index1.html)).
3. For the future. Towards the healthiest and safest region. A vision for WHO work with Member States and partners in the Western Pacific. Manila: WHO Regional office for the Western Pacific; 2019 (<https://www.who.int/docs/default-source/wpro---documents/regional-committee/session-70/rcm70-inf-1-for-the-future.pdf>).
4. Universal Health Care Act Republic Act No. 11223, 20 February 2019. Manila: Philippine Government; 2019 (<https://www.officialgazette.gov.ph/downloads/2019/02feb/20190220-RA-11223-RRD.pdf>).
5. RA 10036 Mental Health Act, 2018. Manila: Philippine Government; 2018 (<https://www.officialgazette.gov.ph/downloads/2018/06jun/20180620-RA-11036-RRD.pdf>).
6. Mental health strategic plan 2019–2023. Manila: Philippine Council for Mental Health; 2019.
7. The WHO special initiative for mental health (2019–2023: universal health coverage for mental health). Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/310981>).
8. Depression and other common mental disorders, Global health estimates; Global burden of disease study 2015. Geneva: World Health Organization; 2017.
9. Mental health atlas, Member State profile Philippines: World health statistics data visualisation dashboard. Geneva: World Health Organization; 2017 (<http://apps.who.int/gho/data/>).
10. Global Health Observatory data repository: suicide rate estimates, crude estimates by WHO region. Geneva: World Health Organization; 2020 (<https://apps.who.int/gho/data/view.main-wpro.MHSUICIDEREgv?lang=en>).
11. Redaniel MT, Lebanan-Dalida MA, Gunnell D. Suicide in the Philippines: time trend analysis (1974–2005) and literature review. BMC Public Health. 2011;11:536.
12. Global school based student health survey; Philippines, 2015: country report. Manila: Epidemiology Bureau, Surveys, Monitoring and Evaluation Division, Department of Health; 2015.
13. Dangerous Drugs Board in its Board (DDB) Regulation No. 7: Consolidated revised rules governing access to treatment and rehabilitation programs and services. Manila: Dangerous Drugs Board; 2019 ([https://www.ddb.gov.ph/images/Board\\_Regulation/2019/2019\\_BRD.REG.7-ConsolidatedRevisedRulesGoverningAccessToTreatmentandRehabilitationProgramsandServices.pdf](https://www.ddb.gov.ph/images/Board_Regulation/2019/2019_BRD.REG.7-ConsolidatedRevisedRulesGoverningAccessToTreatmentandRehabilitationProgramsandServices.pdf)).
14. Global status report on alcohol and health 2018. Philippines country profile. Geneva: World Health Organization; 2018 ([https://www.who.int/substance\\_abuse/publications/global\\_alcohol\\_report/profiles/phl.pdf?ua=1](https://www.who.int/substance_abuse/publications/global_alcohol_report/profiles/phl.pdf?ua=1)).
15. GBD 2016 Epilepsy Collaborators. Global, regional, and national burden of epilepsy, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet Neurol. 2019;18(4):357–75.



16. Epilepsy: a public health imperative. Geneva: World Health Organization; 2019 ([https://www.who.int/mental\\_health/neurology/epilepsy/report\\_2019/en/](https://www.who.int/mental_health/neurology/epilepsy/report_2019/en/)).
17. GBD compare Viz Hub. Seattle (WA): Institute for Health Metrics and Evaluation; 2021 (<https://vizhub.healthdata.org/gbd-compare/>, accessed May 2021).
18. Dominguez J, Fe de Guzman M, Reandelar M, Phung TKT. Prevalence of dementia and associated risk factors: a population-based study in the Philippines. *J Alzheimer Dis.* 2018;63(3):1065–73.
19. COVID-19 tracker. Manila: Philippines Department of Health; 2020 (<https://www.doh.gov.ph/covid19tracker>).
20. Ladrido-Ignacio L, Tan M, Quiring JS. Historical and cultural perspectives from the Philippines. In: *Mental Health in Asia and the Pacific*. Boston (MA): Springer; 2017:163–74.
21. Esterwood E, Saeed SA. Past epidemics, natural disasters, COVID19, and mental health: learning from history as we deal with the present and prepare for the future. *Psychiatr Q.* 2020;1:1–13.
22. Shukla J. Extreme weather events and mental health: tackling the psychosocial challenge. *ISRN Public Health.* 2013(4):1–7.
23. Mueller Y, Cristofani S, Rodriguez C, Malaguio RT, Gil T, Grais RF et al. Integrating mental health into primary care for displaced populations: the experience of Mindanao, Philippines. *Conflict Health.* 2011;5(1):1–7.
24. ABS-CBN News, 8 August 2017 (<https://news.abs-cbn.com/focus/08/08/17/mental-health-crisis-among-marawi-evacuees-alarms-officials>, accessed 29 October 2020).
25. Bressington D, Ho GW, Lam C, Leung SF, Leung AY, Molasiotis A et al. *Mental health literacy and health seeking behavior in the Western Pacific*. Manila: WHO Regional Office for the Western Pacific; 2017.
26. *Philippines national demographic and health survey 2017*. Manila: Philippine Statistics Authority; 2017.
27. Antal D, Oke A, Braithwaite P, Lopez GB. The effect of economic, physical, and psychological abuse on mental health: a population-based study of women in the Philippines. *Int J Fam Med.* 2014(2):852317.
28. Isaac M, Ahmed H, Chaturvedi S, Hopwood M, Javeed A, Kanba S et al. Postgraduate training in psychiatry in Asia. *Curr Opin Psychiatry.* 2018;31:396–402.
29. Philippines. Special initiative for mental health. Situational assessment. Geneva: World Health Organization; 2002 ([https://www.who.int/docs/default-source/mental-health/who-special-initiative-country-brief-report---philippines---2020-04-23-brief.pdf?sfvrsn=136a74f3\\_2](https://www.who.int/docs/default-source/mental-health/who-special-initiative-country-brief-report---philippines---2020-04-23-brief.pdf?sfvrsn=136a74f3_2)).
30. Patel V, Saxena S, Lund C, Thornicroft G, Baingana F, Bolton P et al. The Lancet Commission on global mental health and sustainable development. *Lancet.* 2018;392(10157):1553–98.
31. *Multisectoral action for mental health*. Copenhagen: WHO Regional Office for Europe; 2019 ([http://www.euro.who.int/\\_data/assets/pdf\\_file/0014/413015/Multisectoral-action-for-mental-health-Brief.pdf?ua=1](http://www.euro.who.int/_data/assets/pdf_file/0014/413015/Multisectoral-action-for-mental-health-Brief.pdf?ua=1)).
32. *AmBisyon Natin 2040. A long-term vision for the Philippines*. Manila: Philippine Government; 2016 (<http://2040.neda.gov.ph/wp-content/uploads/2016/04/A-Long-Term-Vision-for-the-Philippines.pdf>).
33. *The Philippine development plan (PDP) 2017–2022, abridged version*. Manila: Philippine Government; 2017 ([http://www.neda.gov.ph/wp-content/uploads/2017/12/Abridged-PDP-2017-2022\\_Final.pdf](http://www.neda.gov.ph/wp-content/uploads/2017/12/Abridged-PDP-2017-2022_Final.pdf)).

34. Chisholm D, Sweeny K, Sheehan P, Rasmussen B, Smit F, Cuijpers P et al. Scaling-up treatment of depression and anxiety: a global return on investment analysis. *Lancet Psychiatry*. 2016;3(5):415–24.
35. Bertram MY, Stenberg K, Brindley C, Li J, Serje J, Watts R et al. Disease control programme support costs: an update of WHO-CHOICE methodology, price databases and quantity assumptions. *Cost Eff Resour Alloc*. 2017;15:21.
36. Stenberg K, Lauer JA, Gkountouras G, Fitzpatrick C, Stanciole A. Econometric estimation of WHO-CHOICE country-specific costs for inpatient and outpatient health service delivery. *Cost Eff Resour Alloc*. 2018;16:11.
37. Chisholm D, Sanderson K, Ayuso-Mateos JL, Saxena S. Reducing the global burden of depression: population-level analysis of intervention cost-effectiveness in 14 world regions. *Br J Psychiatry*. 2004;184:393–403
38. Chisholm D, Gureje O, Saldivia S, Villalón Calderón M, Wickremasinghe R, Mendis N et al. Schizophrenia treatment in the developing world: an interregional and multinational cost-effect analysis. *Bull World Health Organ*. 2008;86:542–51.
39. 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 Psychiatry*. 2005;187:559–67.
40. Chisholm D. Cost-effectiveness of first-line anti-epileptic drug treatments in the developing world: a population-level analysis. *Epilepsia*. 2005;46:751–9.
41. Hetrick SE, Cox GR, Witt KG, Bir JJ, Merry SN. Cognitive behavioural therapy (CBT), third-wave CBT and interpersonal therapy (IPT) based interventions for preventing depression in children and adolescents. *Cochrane Database Syst Rev*. 2016(8):CD003380.
42. Skeen S, Laurenzi CA, Gordon SL, du Toit S, Tomlinson M, Dua T et al. Adolescent mental health program components and behavior risk reduction: a meta-analysis. *Pediatrics*. 2019;144(2): e20183488.
43. Wasserman D, Hoven CW, Wasserman C, Wall M, Eisenberg R, Hadlaczky G et al. School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. *Lancet*. 2015;385(9977):1536–44.
44. Fazel M, Hoagwood K, Stephan S, Ford T. Mental health interventions in schools 1: Mental health interventions in schools in high-income countries. *Lancet Psychiatry*. 2014;1(5):377–87.
45. Fazel M, Patel V, Thomas S, Tol W. Mental health interventions in schools in low-income and middle-income countries. *Lancet Psychiatry*. 2014;1(5):388–98.
46. Jamison DT, Summers LH, Alleyne G, Arrow KJ, Berkley S, Binagwaho A et al. Global health 2035: a world converging within a generation. *Lancet*. 2013;382(9908):1898–955.
47. Stenberg K, Axelson H, Sheehan P, Anderson I, Gulmezoglu AM, Temmerman M et al. Advancing social and economic development by investing in women’s and children’s health: a new global investment framework. *Lancet*. 2014;383(9925):1333–54.
48. Robinson L, Hammitt J, Cecchini M, Chalkidou K, Claxton K, Cropper M et al. Reference case guidelines for benefit-cost analysis in global health and development. Boston (MA): Harvard T.H. Chan School of Public Health; 2019 (<https://sites.sph.harvard.edu/bcaguidelines/>, 4 April 2020).

49. DOH welcomes efforts to lower drug prices, reiterates MDRP to improve access to cheaper medicines. Press release, 19 December 2019. Manila: Department of Health; 2019.
50. Assessment instrument for mental health systems. WHO-AIMS version 2.2. Geneva: World Health Organization; 2005 ([https://www.who.int/mental\\_health/evidence/AIMS\\_WHO\\_2\\_2.pdf](https://www.who.int/mental_health/evidence/AIMS_WHO_2_2.pdf)).

