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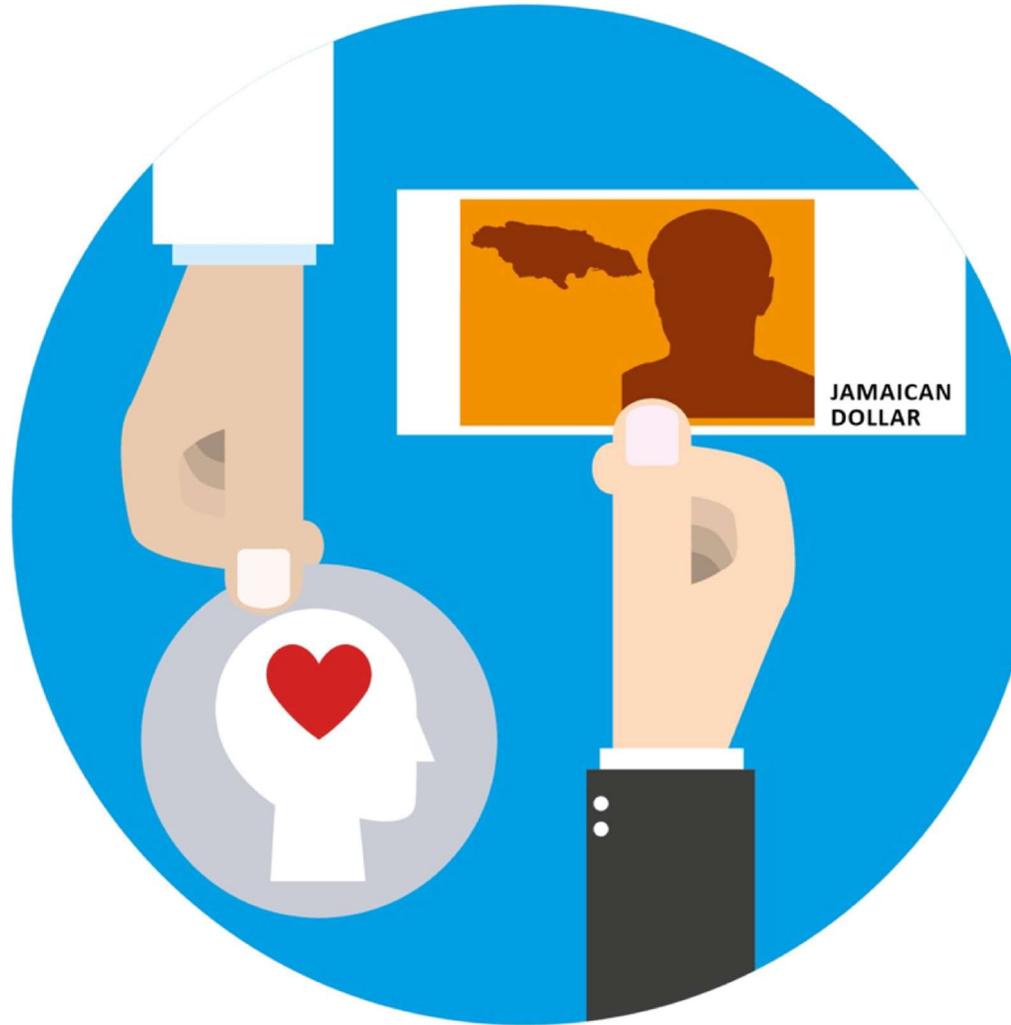
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# Care for Mental Health Conditions in Jamaica

## The Case for Investment

Evaluating the Return on Investment of Scaling Up Treatment for Depression, Anxiety, and Psychosis



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Evaluating the Return on Investment of Scaling Up Treatment for Depression, Anxiety, and Psychosis

Prepared for the Ministry of Health and Wellness of Jamaica  
by

Pan American Health Organization  
United Nations Development Programme



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Care for Mental Health Conditions in Jamaica: The Case for Investment. Evaluating the Return on Investment of Scaling Up Treatment for Depression, Anxiety, and Psychosis  
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## Executive Summary

Mental health is critical to personal well-being, interpersonal relationships, and successful contributions to society. Mental health conditions consequently impose a high burden not only on individuals, families and society, but also on economies, as those who suffer from mental disorders are more likely to experience premature death, exit the labor force, miss days of work (absenteeism), or work at a reduced capacity (presenteeism). Mental illness is thus increasingly acknowledged as a global health and development priority, including in the 2030 Agenda for Sustainable Development and considering the 2030 Agenda pledge to leave no one behind. Encouragingly, with timely and effective treatment, individuals suffering from mental illness can regain full health and wellness.

To help strengthen Member States' capacity to generate and use economic evidence on mental health, the Pan American Health Organization (PAHO) partnered with the Ministry of Health and Wellness of Jamaica, the World Health Organization (WHO), the United Nations Development Programme (UNDP), and RTI International, under the framework of the United Nations Interagency Task Force on the Prevention and Control of Noncommunicable Diseases, to develop this Investment Case for mental health in Jamaica.

This project aims to develop evidence and guidance to support the development, financing, and implementation of mental health interventions in Jamaica. Specifically, it estimates the return on investment (ROI) from scaling up interventions targeting anxiety, depression, and psychosis.

Overall, the results indicate that investing in mental health would support the Government of Jamaica to avoid significant economic losses and social costs. Over the period 2019 to 2033, scaling up the selected package of interventions would:

- **Improve health.** Scaled-up treatment for depression, anxiety, and psychosis would restore 75,883 healthy life years to the Jamaican population. For depression and anxiety, scaled-up treatment would increase healthy life years by 51,328 and 22,671, respectively, by reducing disability states and increasing remission rates. For psychosis, an extra 1,884 healthy life years would be gained from reduced disability states alone.
- **Provide total benefits (60 billion Jamaican dollars [J\$]) that significantly outweigh the costs (J\$ 14.2 billion).** Health gains from scaled-up treatment for depression, anxiety, and psychosis would lead to large economic productivity gains (J\$ 39 billion) and social benefits (J\$ 21 billion). These benefits significantly outweigh the medical (J\$ 12.5 billion) and intervention package implementation costs (J\$ 1.7 billion) associated with scaling up treatment.
- **Have a high return on investment.** Comparing the economic and social benefit from scaling up treatment for depression, anxiety, and psychosis to the cost, anxiety interventions have the highest return on investment: for every Jamaican dollar invested in clinical treatments for anxiety, Jamaica can expect 5.5 Jamaican dollars in return. The depression treatment package has the next highest return on investment (5.2), followed by the psychosis treatment package (1.1).

Though inadequate responses to mental illness pose a significant health and economic burden, the results from this analysis show that Jamaica can significantly reduce the burden of mental illness by investing in interventions designed to improve mental health.

## I. Introduction

Insufficient prevention, treatment, care, and management of mental health conditions is causing significant human suffering worldwide. It is also imposing high economic burdens on countries, since individuals who suffer from mental illness are more likely to exit the labor force, miss days of work (absenteeism), or work at a reduced capacity (presenteeism) (1, 2). In Jamaica, the burden of mental illness is considerable and is predicted to cause US\$ 2.76 billion in lost economic output from 2015-2030, a higher economic burden than from any single category of noncommunicable disease conditions except cardiovascular disease (3). Additionally, many mental health problems and illnesses begin in childhood or adolescence, making investments in addressing mental health important to improve quality of life from childhood through older age.

Over time, in Jamaica, there has been a rise in the number of individuals seeking treatment for mental illness. In 2013 and 2014, there were approximately 90,000 visits to public health facilities for mental health treatment annually (4). Visits increased by about 20% per year in the following two years, with nearly 108,000 visits in 2015 and 132,000 in 2016 (4, 5). These numbers may represent as little as half of the actual need for treatment, as the treatment gap for mental disorders in the Caribbean region ranges from 37.4% (non-affective psychoses) to 64.0% (bipolar disorder) (6).

In recognition of the unmet need and the imperative to improve mental health treatment, a 24-member Jamaican task force on mental health and homelessness was formed in 2016 to address resource challenges. Separately, in coordination with the Ministry of Health and Wellness of Jamaica, the Pan American Health Organization (PAHO), the World Health Organization (WHO), and the United Nations Development Programme (UNDP) began developing a mental health investment case in Jamaica in 2017. The investment case analyzes the costs and benefits of scaling up coverage of selected clinical interventions related to anxiety, depression, and psychosis that are part of the WHO Mental Health Gap Action Programme (mhGAP). The investment case in Jamaica is part of a series of investment cases designed to strengthen Member States' capacity to generate and use economic evidence to scale up cost-effective policy and clinical interventions for noncommunicable diseases and mental illnesses.

### WHO Mental Health Gap Action Programme

Recognizing the urgent need for action to reduce the burden of mental health conditions, the WHO developed the mhGAP. This action plan is an initiative to reduce the global treatment gap by scaling up treatment of mental, neurological, and substance use disorders (7). The mhGAP provides a framework—based on evidence about the effectiveness and feasibility of scaling up—for increasing coverage of care for mental, neurological, and substance use disorders.

To further assist Member States in the implementation of the mhGAP, the WHO developed the mhGAP Intervention Guide for Mental, Neurological and Substance Use Disorders in Non-Specialized Health Settings (mhGAP-IG). The mhGAP-IG provides a full range of recommendations to facilitate high-quality care for mental, neurological, and substance abuse disorders by non-specialized health care providers (8).

### **Investment Case Overview**

Mental health investment cases seek to help policymakers understand the expected benefits and costs from investing in mental health interventions in their respective countries. Generally, a country investment case consists of a combined economic analysis and institutional and context analysis (ICA).

The economic analysis evaluates the country-specific costs and benefits of scaling up a selected package of priority interventions identified in the WHO mhGAP-IG. Concretely, it examines the costs and benefits of scaling up treatment for 1) depression, 2) anxiety, and 3) psychosis, which together accounted for 93% of all mental health related visits to public health centers in Jamaica in 2016 (5). By providing policymakers with return on investment (ROI) estimates for interventions, the economic analysis also aims to inform the establishment of priorities for resource allocation within the framework of the country's mental health strategy. The economic analysis makes use of the OneHealth Tool (9, 10), along with the mhGAP costing tool (11), both developed by United Nations partners, to estimate the cost of clinical interventions and to project the expected health and economic benefits from their implementation.

The economic analysis is complemented by an ICA, developed to understand the diverse range of institutions, actors, and stakeholders relevant to mental health in a given context, including how ROI estimates on mental health would affect them. The ICA recognizes that policy and investment decisions usually consider more than social and economic data. Combining a desk review and interviews with key stakeholders, the ICA uncovers areas of consensus and opportunity as well as challenges and barriers. It supports institutions to examine the political space for adopting and implementing the investment case interventions and recommends context-specific strategies and approaches to increase that space.

## II. Situation Analysis on Mental Health in Jamaica

This section provides a brief overview of the mental health situation in Jamaica. It includes summaries on the epidemiological situation related to depression, anxiety, and psychosis as well as an overview of the institutional and societal contexts under which interventions for mental health conditions take place.

### Depression and Anxiety

Depression and anxiety are serious and debilitating mental health concerns. Depression, a persistent mood disorder that results in feelings of dejection, can pervade daily life, affecting basic activities such as eating and sleep, and provoke suicidal thoughts (12). Anxiety disorders, which involve a persistent state of worry or fear, similarly manifest in everyday activities, causing fatigue and sometimes hurting academic or professional performance (13).

Depression
<ul style="list-style-type: none"><li>• Around 3% of Jamaicans suffer from depression.</li><li>• Women have higher rates of depression and anxiety than men.</li></ul>

The 2017 Global Burden of Disease database shows that depression and anxiety disorders are among the most common mental health concerns facing the population of Jamaica. Around 3% of Jamaicans have a depressive disorder and 4.1% have an anxiety disorder. Women are at a disproportionate risk for both disorders, as 3.7% have depression and 4.3% have anxiety, compared to just 2.3% of men for each disorder (14).

Local studies have also indicated that depression is a significant problem in Jamaica. The Jamaica Health and Lifestyle Survey 2007-2008 found that 20% of respondents aged 15-74 reported symptoms of depression within the past month (15). Depression and anxiety manifest in markedly different age groups. Jamaicans aged 60 and above are more likely to have depressive disorders than younger Jamaicans (5.2% among Jamaicans aged 60-74 and 5% among those aged 75+). In contrast, anxiety is most common in those aged 35-59 (5.5%), who suffer from anxiety disorders at higher rates than other age groups (14).

Anxiety
<ul style="list-style-type: none"><li>• Approximately 4% of Jamaicans suffer from anxiety.</li><li>• Most new cases of anxiety disorders appear in Jamaicans in the 20-34 and 35-59 age groups.</li><li>• Anxiety is common among working-age Jamaicans; 5.5% within the 35-39 age group suffer from anxiety.</li></ul>

### Psychosis

Psychosis is a mental health condition that manifests as hallucinations, erratic social behavior, and delusions, all of which may occur during 'psychotic episodes' when an individual's perception of reality is disrupted. Disorders such as schizophrenia, bipolar disorder, and severe depression or anxiety can cause psychosis. Substance abuse or general medical conditions such as Alzheimer's disease can also trigger psychotic episodes (16). The incidence of psychosis in Jamaica has been estimated at 2.09

Psychosis
<ul style="list-style-type: none"><li>• In Jamaica, psychosis was responsible for 106,674 visits to public health clinics for mental illness in 2016, accounting for more than 80% of mental illness related public clinic visits nationwide.</li></ul>

per 10,000 people (17), and psychosis and schizophrenia together account for 80% of mental illness related public clinic visits nationwide (5).

Psychotic disorders place a major burden on the social and physiological aspects of individuals' lives. In a comparison of bipolar and schizophrenic patients, schizophrenic patients were less likely to have marketable job skills than bipolar patients and schizophrenia was associated with lower educational attainment (18). Research suggests that psychotic disorders such as schizophrenia are stigmatized (19), a problem worsened by the fact that many Jamaicans with psychotic disorders also have substance abuse problems (20). Psychotic disorders can also lead to increased risk for other health problems: those with schizophrenia and other severe mental disorders have been found to die 10 to 20 years earlier than the general population, mostly due to cardiovascular disease and other preventable physical illnesses (21). Moreover, the costs of psychosis do not fall exclusively on the mentally ill. Caregivers for schizophrenic patients, for example, have a considerable burden, especially when patients cannot care for themselves (22). Long-term psychosocial intervention and case management services are effective measures that can be considered when managing psychosis, resulting in less people transitioning to long-term disability.

### **Institutional and Context Analysis**

Historically, mental health has not been a priority in Jamaica, but it is now of growing public and political concern. Considering the current government's simultaneous emphasis on general well-being and gross domestic product (GDP) growth, and the importance of addressing mental health for both, Jamaica is ripe for a significant push (23). It also has institutional and individual arrangements in place to scale up its mental health response. The multisectoral Jamaica National NCD Committee includes as sub-committees the Mental Health and Homelessness Task Force and the National Council on Drug Abuse, Tobacco, Alcohol and Cannabis, both of which are strongly engaged. At the time of the analysis, a National Mental Health Policy and National Strategic Plan are being prepared for Cabinet approval. The current Health Minister has been vocal about the need to address mental illness in Jamaica, including through public education to destigmatize affected persons (24,25).

Central to Jamaica's efforts to strengthen the national response to mental illness is its desire to transition from a hospital-focused mental health approach to a community-based one. This would support those with persistent issues to avoid mental hospitals and homelessness while increasing productivity.

To support this objective, in 2017, the Jamaica Task Force on Mental Health and Homelessness issued recommendations including integrating mental health services into primary care by expanding mental health training of health professionals (e.g., psychiatric nurse aides, and community and social workers) (26). A recent survey found that two-thirds of public sector doctors in the Kingston and St. Andrews parishes "felt that they were not adequately trained to deal with depression and less than 20% routinely screened patients with chronic illnesses for depression" (27, p. 1). Many individuals with depression and anxiety are never diagnosed or treated, and psychosocial support is generally only available in public sector facilities.<sup>1</sup>

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<sup>1</sup> Source: Ministry of Health, Mental Health and Substance Abuse Unit, personal communication, 2017.

The Task Force also recommended a concerted health promotion campaign aimed at stigma reduction. Stigma around mental illness can prevent individuals from accessing services or seeking assistance from family or friends to help cope with and treat psychological problems (28). In Jamaica, data from a 2006 national survey on mental health indicate stigma around mental health. Of 1,306 people surveyed, 64.9% said they seek to avoid mentally ill persons, and only 26.7% said that they felt comfortable with mentally ill persons (29).

Arthur et al. (2010) wrote that Jamaicans tend to organize mental illness into three distinct categories that correspond closely to medical terminology for mental disorders: considering some people healthy, others “mentally ill” (e.g., those who suffer from phobias, anxiety, or mild to moderate depression), and others as “mad” (e.g., schizophrenics, bipolar, major depressive disorder) (30). Similarly, there is a perception that being treated at a health center constitutes help and the possibility of recovery, whereas treatment at a formal mental health institution signals that a person is severely, and perhaps permanently, ill (31).

Besides recommending increasing integration of mental health into primary care and reducing stigma, the Task Force recommended more direct outreach to underserved and nonadherent populations through expansion of the number of “assertive outreach teams”. These teams provide emergency psychiatric response, home visits, and direct transportation to health facilities for those with moderate and severe forms of mental illness, helping to reach those most in need and ensuring they receive treatment.

Funding for mental health services is a significant challenge in Jamaica. Due to resource deficiencies, there is no organizational structure for community health posts, nor are there posts for social workers or psychiatrists. Instead, there is overreliance on contract jobs provided through regional authorities, which results in the defection of highly skilled, qualified personnel to more secure opportunities. Resource constraints also limit vehicle and bus provision for mental health services.

### III. Economic Analysis

The economic analysis evaluates the cost and benefits of selected mhGAP interventions. This section provides an overview of the methodology used to conduct the economic analysis, a description of the interventions modeled, and the results.

#### Overview of Methodology

**Step 1. Estimating medical costs.** An ingredients-based approach, whereby each resource required for the intervention is identified and valued, was used to cost the interventions. The total cost of providing treatment is a function of the resources used to treat patients (e.g., pharmaceutical drugs and diagnostics), as well as the cost of outpatient visits<sup>2</sup> or inpatient stays required as part of the regimen. Specifically, the quantity of resources used is multiplied by the unit cost of the resource, then by the

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<sup>2</sup> Outpatient visits may include visits to primary care providers for medication monitoring or psychosocial support (e.g., group or individual counseling).

additional number of patients who receive treatment, to arrive at the total cost of scaling up coverage rates in the population.

The costs of pharmaceutical drugs were sourced from the Jamaica National Health Fund (32). Based on the WHO CHOICE methodology, an additional cost, equivalent to 13% of the medicine's value, is added to account for the supply chain costs to import and distribute the medications throughout Jamaica (33). The average costs of an outpatient visit or inpatient stay are derived from the 2010 WHO CHOICE study (34). Outpatient and inpatient costs are modified—according to mhGAP Costing Tool assumptions—to estimate the cost of providing specialized mental health services, such as individual or group therapy.

**Step 2. Estimating package implementation costs.** In addition to the medical costs associated with treatment, the analysis accounts for program and health system costs that support the delivery of interventions and their uptake by individuals with mental illness. Within this category the analysis includes the costs of: 1) training a mental health workforce; 2) operating five “assertive outreach teams”<sup>3</sup> that provide emergency response, home visits, and transportation to health facilities for mental health patients; 3) promoting awareness and knowledge of mental health conditions through public education and a social media campaign, and 4) program management and administration costs for the Ministry of Health and Wellness’ Mental Health and Substance Abuse Unit (including human resources, supplies and equipment, and surveys).

The costs of items 1-3 listed above, were adapted from cost and resource-intensity estimates within the Proposal for Implementation of Recommendations from the Task Force on Mental Health and Homelessness, and from correspondence with the Ministry of Health and Wellness’ Mental Health and Substance Abuse Unit. The costs of program management and administration were extrapolated from assumptions within the WHO mhGAP Costing Tool.

To evaluate the total cost of scaling up interventions, the OneHealth Tool was used. The OneHealth Tool is a freely available software program produced by the WHO and other United Nations agencies, which has been used by United Nations agency actors and others to publish analyses of the benefits and financial return from implementing health interventions (35,36). The OneHealth Tool is customizable, meaning users can input data that reflect a country's health services and local costs. The tool also allows users to define intervention parameters (e.g., drugs prescribed, the number of outpatient and inpatient visits), their unit cost, the current coverage levels of interventions and the prevalence and incidence rates of diseases and risk factors.

**Step 3. Estimating health gains.** The OneHealth Tool was used to calculate the expected health gains from scaling up treatment for depression, anxiety, and psychosis. To estimate health gains, the OneHealth Tool calculates the depression, anxiety, and psychosis episodes that would occur in the population without scaling up any of the clinical interventions identified in the mhGAP-IG (the no scale-up scenario). It then calculates episodes of depression, anxiety, and psychosis that will occur with a scale-up (the scale-up scenario). The health gains from the investment case analysis are calculated as the reduction in the

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<sup>3</sup> The Task Force on Mental Health and Homelessness proposed the establishment of five “assertive outreach teams”.

prevalence of mental illness, healthy life years gained,<sup>4</sup> and lives saved from scaling up clinical interventions identified in the mhGAP-IG.

**Step 4. Monetization of economic and social value of health gains.** In this study, the economic and social value of health gains from scaling up treatment for depression, anxiety, and psychosis is monetized. The economic value of health benefits captures improvement in labor force outcomes, while the social value of health gains captures the monetary value of being alive and healthy to form and maintain relationships, pursue leisure interests, and make decisions in everyday life. To monetize the social value of health gains for the depression, anxiety, and psychosis treatment packages, the formula developed by Stenberg and colleagues is used: healthy life years gained from scaling up treatment interventions  $\times 0.5 \times$  per person income (36). The approach to calculate the economic value of health gains from scaling up depression and anxiety interventions was different than the approach used to calculate the economic value of health gains from scaling up psychosis interventions.

**Depression and anxiety.** To estimate the economic value of health gains derived from scaling up treatment for depression and anxiety, the report estimates the discounted value of future earnings from improved labor outcomes that result from saving lives, missing fewer days at work (absenteeism), reducing impaired activity while at work (presenteeism), and increased labor participation (35,37-39).<sup>5</sup>

**Psychosis.** Since there is currently no consensus on the impact of psychosis on mortality, presenteeism, absenteeism, and employment, we estimate the economic value of health gains solely from healthy life years gained. Approximately 1.1 x GDP per capita can be attributed to the economic value of an extra healthy life year (40).

The economic benefits and social value of health gains as well as the medical and package implementation costs are reported as present values in constant Jamaican dollars 2017 and discounted annually at a rate of 3%.

**Step 5. Return on investment.** Return on investment (ROI) analysis measures the financial gain from an investment relative to its costs. An investment is efficient in economic terms if the financial gain from the investment exceeds the cost of making the investment ( $ROI > 1$ ). This mental health investment case calculates the ratio of the total benefits (economic and social value of health gains) from scaling up treatment for depression, anxiety, and psychosis to the costs (medical and package implementation). An ROI greater than one indicates that the financial gains from scaling up treatment for depression, anxiety, and psychosis exceed its costs.

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<sup>4</sup> Reduction in the prevalence of mental illness is derived from remission of mental illness. Healthy life years gained, on the other hand, are derived from both remission and improved functioning as a result of treatment.

<sup>5</sup> Increases in hours worked were obtained from the literature.

## Interventions Modeled

The analysis modeled three categories or packages of mental health interventions: 1) depression, 2) anxiety, and 3) psychosis. This subsection overviews the interventions modeled under each package along with their respective targets and baselines. Where relevant, the increases in coverage levels recommended by the Jamaica Task Force on Mental Health and Homelessness were taken into account (27).

### Depression and Anxiety

According to the mhGAP-IG, psychosocial interventions are the first-line treatments for depression and other significant mental health complaints such as anxiety disorders. These treatments can be categorized as either basic or intensive. Basic psychosocial interventions can be carried out by nonspecialized health care providers with little extra training, while intensive psychosocial interventions require extensive training and take time to implement, usually over weeks or months.

Basic psychosocial interventions for depression and anxiety include teaching patients and caregivers about mental illness, addressing psychosocial stressors, reactivating social networks, designing structured physical activity programs, and offering regular follow-up. Recommended intensive psychosocial interventions for anxiety and depression include behavioral activation, relaxation training, problem-solving treatment, interpersonal therapy, and cognitive behavioral therapy.

For individuals with moderate to severe depression, or anxiety accompanied by depression, initiation of antidepressant medication may be necessary. The mhGAP-IG recommends selecting an antidepressant from the national or WHO formulary, such as fluoxetine, a selective serotonin reuptake inhibitor (SSRI), or amitriptyline, a tricyclic antidepressant (TCA). Patients on antidepressant medication should be monitored regularly for side effects, adherence, and response. The mhGAP-IG does not recommend pharmacological treatment for patients with mild depression or patients with anxiety disorders that have no depressive or other priority symptoms.

For patients with recurrent depressive episodes, therapy continues either on an episodic or a maintenance basis. Episodic therapy treats acute symptoms as they appear, while maintenance therapy is continued after the treatment of acute symptoms to reduce the risk of relapse (41).

The mental health investment case models the scaling up of interventions such that coverage is expanded to reach more patients in need. Table 1 presents current coverages (2018) and target coverages (2033) for the depression interventions in Jamaica. The estimates on current coverage were provided by Jamaica Ministry of Health and Wellness officials and represent the percentage of individuals with depression who are currently receiving each type of treatment. The target coverage goals—for scaling up treatment—over the next 15 years were also provided by Ministry of Health and Wellness officials.

Table 1. Current coverage rates and targets of selected interventions related to depression

Depression Package	Current Coverage (2018)	Target Coverage (2033)
<b>Depression Interventions</b>		
Basic psychosocial treatment	15%	50%
Basic psychosocial treatment and antidepressant medication for first episode moderate-severe cases	30%	65%
Intensive psychosocial treatment and antidepressant medication for first episode moderate-severe cases	50%	80%
Intensive psychosocial treatment and antidepressant medication for recurrent moderate-severe cases on an episodic basis	53%	80%
Intensive psychosocial treatment and antidepressant medication for recurrent moderate-severe cases on a maintenance basis	55%	80%

For patients with depression, the mhGAP-IG advocates for differential treatment based on severity of symptoms. Because multifaceted treatment is recommended for patients with moderate-severe depression, the study analyzes the five treatment combinations listed in Table 1 for patients with mild depression, first episode moderate-severe depression, and recurrent moderate-severe depression.

Table 2 presents current coverages (2018) and target coverages (2033) for the anxiety interventions in Jamaica. The estimates on current coverage were provided by Jamaica Ministry of Health and Wellness officials and represent the percentage of individuals with anxiety who are currently receiving each type of treatment. The target coverage goals were also provided by Ministry of Health and Wellness officials.

Table 2. Current coverage rates and targets of selected interventions related to anxiety

Anxiety Package	Current Coverage (2018)	Target Coverage (2033)
<b>Anxiety Interventions</b>		
Basic psychosocial treatment for anxiety disorders	11%	50%
Basic psychosocial treatment and antidepressant medication for anxiety disorders	26%	65%
Intensive psychosocial treatment and antidepressant medication for anxiety disorders	46%	80%

Because multifaceted treatment is recommended for patients with anxiety usually accompanied by depression, the study analyzes three treatment combinations for anxiety. These treatments combine either basic/intensive psychosocial interventions with antidepressant medication for cases accompanied by depression and use basic psychosocial interventions only for mild cases.

## Psychosis

The mhGAP-IG recommends both psychosocial interventions and antipsychotic medication for all patients with psychosis, though pharmacological treatment can eventually be discontinued if symptoms are controlled or the patient is in remission. Similar to depressive and anxiety disorders, basic psychosocial interventions for psychosis can be carried out by nonspecialized health care personnel with little extra training, while intensive psychosocial interventions require advanced training and take time to implement.

Basic psychosocial interventions for psychosis in the mhGAP-IG are focused on educating patients and their caregivers about psychosis and its treatment, facilitating rehabilitation into the community, and requiring regular follow-up. Intensive psychosocial interventions, on the other hand, include all basic psychosocial interventions plus family therapy and social skills therapy.

Recommended antipsychotic medications include haloperidol, chlorpromazine, and fluphenazine, among others. It is important to ensure regular follow-up with psychotic patients to assess symptoms, side effects, adherence to medication, and in some cases for routine laboratory monitoring.

Table 3 presents the current coverages (2018) and target coverages (2033) for the psychosis interventions in Jamaica. The estimates on current coverage were provided by Jamaica Ministry of Health and Wellness officials and represent the percentage of individuals with psychosis who are currently receiving treatment. The target coverage goals were also provided by Ministry of Health and Wellness officials.

Table 3. Current coverage rates and targets of selected interventions related to psychosis

Psychosis Package	Current Coverage (2018)	Target Coverage (2033)
<b>Psychosis Interventions</b>		
Basic psychosocial treatment and antipsychotic medication; & Intensive psychosocial treatment and antipsychotic medication	70%	90%

As evidenced by Tables 1-3, coverage rates for individuals with mental disorders are low. Under-resourced community mental health services, low levels of training among general health practitioners, and stigma around mental illness may all play a role in low screening, diagnosis, and treatment rates (5).

## Results

The analysis finds that implementing the intervention packages would result in significant health and economic benefits which exceed the needed financial investment. This subsection presents the health benefits, economic benefits, and ROI estimates of scaling up the selected packages of interventions outlined in the previous section. Overall, the analysis finds that all three packages of interventions (depression, anxiety, and psychosis) are cost-efficient, since the gains from these investments exceed their costs over the 15-year period (2019-2033).

### Health Benefits

Over 15 years, scaling up treatment for mental illness is expected to improve functioning (or reduce disability) for depression, anxiety, and psychosis patients and to increase remission rates for patients with depression and anxiety. For depression and anxiety patients, improvements in functioning and remission are expected to increase healthy life years by 51,328 and 22,671, respectively; reducing the prevalence of depression and anxiety cases by 120,259 and 108,968 cases, respectively, by 2033 (15-year period). For psychosis patients, the cumulative number of healthy life years gained over the 15-year period from improved functioning alone is 1,884. Table 4 shows results for two key health outcomes: healthy life years gained and cases averted (reduced prevalence).

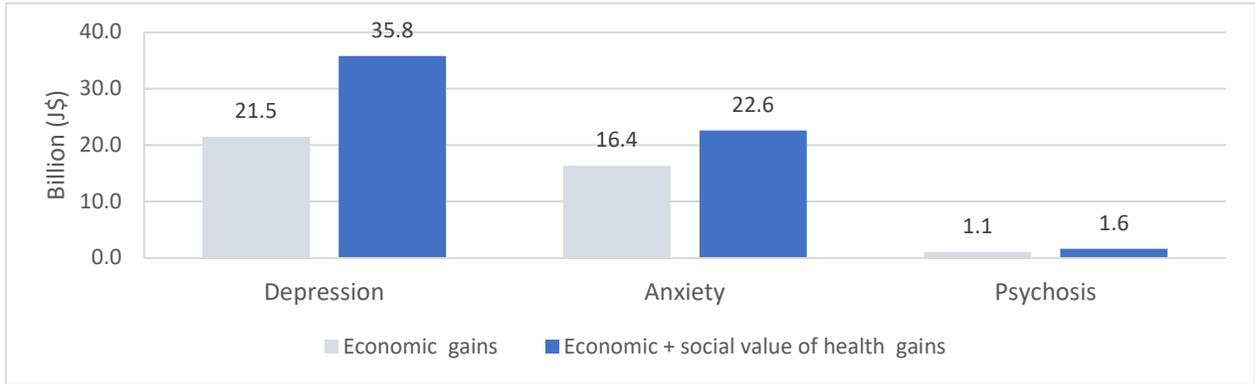
Table 4. Estimated health benefits over a 15-year time horizon

Intervention Package	Healthy Life Years Gained	Cases Averted
Depression	51,328	120,259
Anxiety	22,671	108,968
Psychosis	1,884	-

### Economic and Social Value of Health Gains

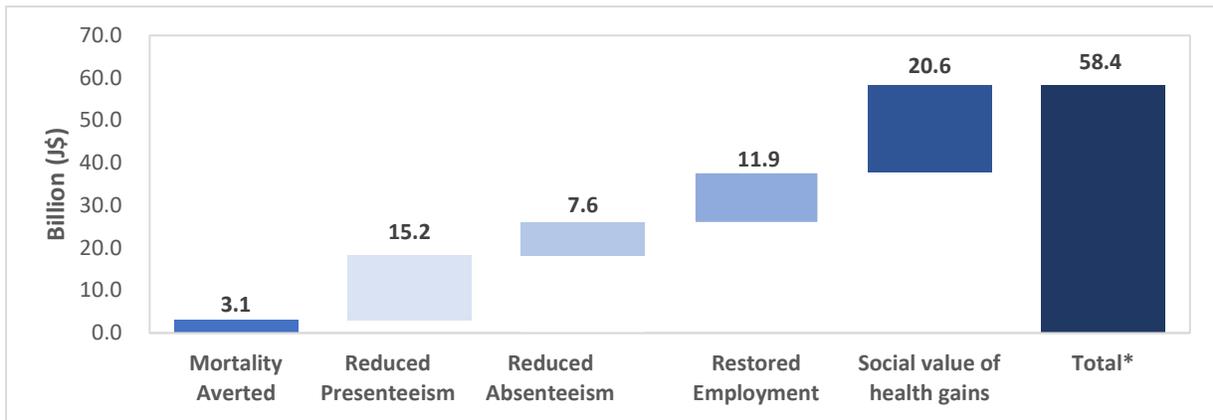
Monetizing the value of the health benefits, to account for both economic and social gains, yields a present value of J\$ 60 billion: J\$ 35.8 billion from the depression package, J\$ 22.6 billion from the anxiety package, and J\$ 1.6 billion from the psychosis package. The J\$ 60 billion in gains can be disaggregated into economic gains and social gains. The economic gains account for J\$ 39 billion: J\$ 21.5 billion from the depression package, J\$ 16.4 billion from the anxiety package, and J\$ 1.1 billion from the psychosis package. The social gains account for J\$ 21 billion: J\$ 14.3 billion from the depression package, J\$ 6.2 billion from the anxiety package, and J\$ 0.5 billion from the psychosis package. The present value of the economic and social gains from improved health are shown in Figure 1.

Figure 1. Economic and social value of health gains



For depression and anxiety, the methodology allows for further disaggregation of the gains from mortality averted, reduced absenteeism, reduced presenteeism, and restored employment. Of the J\$ 58.4 billion expected from scaling up treatment for depression and anxiety, mortality averted accounts for J\$ 3.1 billion, reduced presenteeism for J\$ 15.2 billion, reduced absenteeism for J\$ 7.6 billion, restored employment for J\$ 11.9 billion, and the social value of health gains for J\$ 20.6 billion. Figure 2 provides a breakdown of the present value of the total gains from scaled-up treatment of depression and anxiety interventions. As explained in the methodology section, for psychosis treatment, the economic gains could not be disaggregated as there is currently no consensus on the impact of psychosis on mortality, presenteeism, absenteeism, and employment.

Figure 2. Breakdown of total gains from scaled-up depression and anxiety treatment



\* Total is the sum of economic productivity gains and the social value of health gains from scaled-up depression and anxiety treatment. The results from psychosis (J\$ 1.1 billion economic gains & J\$ 0.5 billion in social value) are not added to the graph. The total would then be J\$ 60 billion.

## Return on Investment

Comparing the costs and benefits of each intervention package, the analysis finds that scaling up treatment for all three intervention packages—1) depression, 2) anxiety, and 3) psychosis—delivers an ROI higher than one, not just over the 15-year analytic period (2019-2033), but also in the very first year of implementation (2019), with the ROI continuing to increase steadily every year thereafter. Figure 3 illustrates the cumulative ROI over the 15-year period; at the 5-year mark, the ROI of the combined three packages is 2.4, and it grows to 4.2 by the 15-year mark, meaning that for every J\$ 1 invested in the mental health intervention packages analyzed, Jamaica can expect to see J\$ 4.2 in economic and social returns.

Figure 3. ROI in mental illness intervention packages by year over 15 years

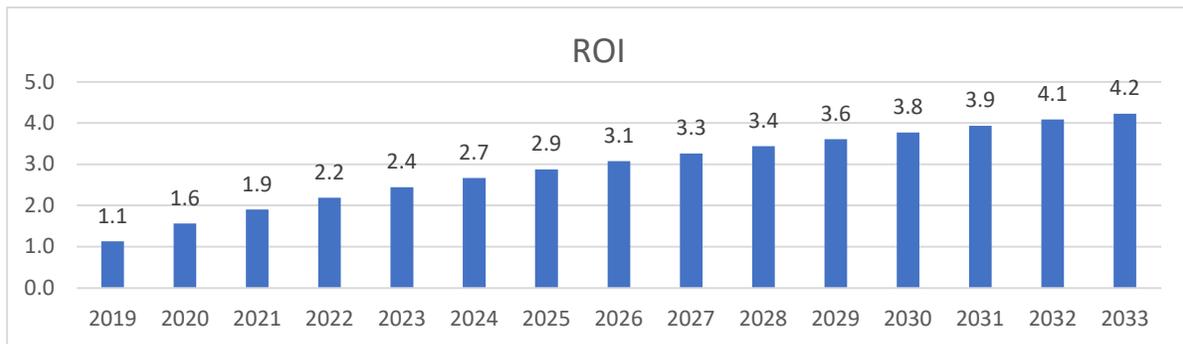
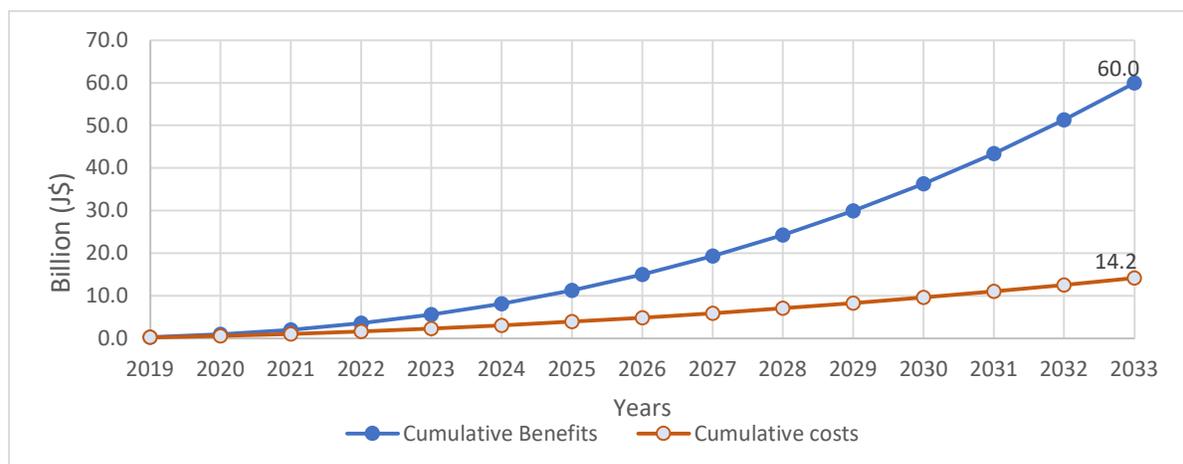


Figure 4 illustrates the cumulative value over the 15-year period of the two components that make up the ROI calculation: 1) the benefits of implementing the mental health intervention packages described above (blue line), and 2) the medical and implementation costs of the same packages (orange line). In 2033, total benefits from the combined three intervention packages are J\$ 60 billion while the investment costs are J\$ 14.2 billion. The figure shows that the combined policy packages are productive investments in the short-run but deliver even higher returns in the long-run as the gap between total benefits (economic and social) and costs (medical and implementation) increases over time.

Figure 4. Cumulative benefits and cost of all mental illness intervention packages over 15 years



Comparing the costs and benefits of the three intervention packages, the analysis finds that in the first five years, the depression treatment package has the highest social and economic benefits (J\$ 3.90 billion; ROI of 3.97), followed by anxiety (J\$ 1.49 billion; ROI of 3.35) and psychosis (J\$ 0.22 billion; ROI of 0.90).

Over the 15-year period, the depression treatment package continues to have the highest social and economic benefits (J\$ 35.8 billion), followed by anxiety (J\$ 22.6 billion), and psychosis (J\$ 1.6 billion). Comparing total benefits (economic and social) to the costs (medical and implementation) at year 15, anxiety interventions deliver the highest ROI: for every J\$ 1 invested in clinical treatment for anxiety, Jamaica can expect to see J\$ 5.5 in return. The depression treatment package has the next highest 15-year ROI (5.2), followed by the psychosis treatment package (1.1). Table 5 summarizes the benefits, costs and ROI of the three packages.

Table 5. Benefits, costs, and ROI of the mental illness intervention packages

Packages	5 Years of Implementation			15 Years of Implementation		
	Total Social and Economic Benefits (J\$ billion)	Total Costs (J\$ billion)	5-year ROI	Total Social and Economic Benefits (J\$ billion)	Total Costs (J\$ billion)	15-year ROI
Depression	3.90	0.98	3.97	35.8	6.9	5.2
Anxiety	1.49	0.45	3.35	22.6	4.1	5.5
Psychosis	0.22	0.24	0.90	1.6	1.5	1.1
<b>All packages</b>	<b>5.60</b>	<b>2.29*</b>	<b>2.4</b>	<b>60.0</b>	<b>14.2*</b>	<b>4.2</b>

\* The cost of “all packages” is not the sum of the costs of the depression, anxiety, and psychosis packages. In addition to medical costs, the package accounts for the cost to 1) train mental health professionals; 2) operate five mobile “outreach teams” that provide emergency response and transportation to health facilities, and conduct home visits; 3) promote awareness and knowledge of mental health conditions through public education and a social media campaign, and; 4) provide for program management and administration costs of the Ministry of Health and Wellness’ Mental Health and Substance Abuse Unit (including human resources, supplies and equipment, and surveys)—additional costs 5 years: J\$ 0.62 billion; 15 years: J\$ 1.7 billion. These additional program and health system costs support the delivery of the interventions and their uptake by individuals with mental illness. However, the additional social and economic benefits derived from these 4 supplemental non-medical costs were not assessed. Therefore, the ROI estimates for “all packages” at 5 years and 15 years are conservative.

## IV. Discussion

In Jamaica, mental health conditions are highly prevalent and major contributors to morbidity, disability, and premature mortality. Currently, access to mental health services in Jamaica is low, with insufficient resources allocated to scale up treatment. Without an enhanced national response, the health and economic burden of mental health conditions in Jamaica will become more severe and costlier for society.

Fortunately, proven interventions exist to reduce the burden of mental health conditions. The results from this analysis estimate an ROI greater than one from implementing selected psychosocial and pharmacological interventions related to depression, anxiety, and psychosis. These results show that Jamaica can significantly reduce the burden of mental illness and improve the quality of life of its citizens by investing in interventions designed to improve mental health. Encouragingly, Jamaica is favorable to strengthening the response to mental health conditions and mental health is gaining ground on the public agenda. In addition to implementing the interventions modeled in this report, opportunities to further strengthen national mental health in Jamaica include:

- 1. Accelerating momentum to transition from a hospital focus to a community-based response.** Community-based mental health services should be comprehensive and include psychosocial rehabilitation, allowing for early detection and social reintegration of persons with mental disorders. The integration of a mental health component into primary health care and the shift to a community-based response is a crucial strategy for alleviating the existing mental disorder treatment gap. Besides building capacity among health professionals, the shift also involves ensuring the availability of essential psychotropic drugs in community outpatient services and in primary health care.
- 2. Identifying and addressing common barriers to the improvement of mental health services.** Barriers include social stigma towards persons affected by mental health, misperceptions that care is not cost-effective and that only persons with psychosis should be seen by mental health providers, low numbers and limited categories of health workers trained and supervised in mental health care, and poor investment. The investment case counters misperceptions around the cost-effectiveness of mental health interventions, delivering a strong ROI even while including additional costs to train mental health professionals, operate mobile outreach teams, and promote mental health awareness and knowledge.
- 3. Encouraging a multisectoral response to mental health.** An approach that supports individuals at different stages of the life course is required. Integration of a mental health component should be available in settings other than hospitals and primary care, such as school health clinics, workplaces and within the criminal justice system. Mainstreaming the discourse and response among sectors beyond health, such as education, labor, justice, transport, environment, housing and social welfare, can deliver win-wins for health and sustainable development while reducing the social stigma associated with mental health conditions and with seeking mental health services.

4. **Reorienting mental health services.** This includes rethinking the focus of primary care with emphasis on management of common mental disorders and improvement of referral and back referral mechanisms. It requires defining a unique model of collaboration between mental health and primary care: a collaborative model (secondary care assisting primary care) or an integrated model (mental health specialist integrating primary care); promoting supervision of primary care.
5. **Improving the management of mental disorders** with the aim of decreasing morbidity and premature mortality. This also requires proper coordination of mental health services and the need for transitional funding to shift to community-based services.
6. **Leveraging investment case findings to show that action to improve mental health supports Jamaica's "5 in 4" economic growth plan.** The results of the study show that interventions targeting depression, anxiety, and psychosis have positive returns and support the economic growth plan by alleviating the financial and human toll. With an ROI greater than 1 reached in the very first year of implementation (2019) and steadily increasing ROI over the ensuing years, the mental health interventions deliver immediate economic gains to Jamaica which only escalate over time. Addressing mental health would not only support GDP growth but also improve general well-being and related endeavors, including moving towards universal health coverage and ensuring the right to health.

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The United Nations Inter-Agency Task Force on the Prevention and Control of Noncommunicable Diseases (UNIATF) was established in 2013 by the Secretary General and placed under the leadership of WHO to coordinate the activities of the UN System to support the realization of the commitments made by Heads of State and Government in the 2011 Political Declaration on NCDs. Joint activities included in the work plan of the Task Force are additive to various, more comprehensive efforts conducted by the UN agencies to prevent and control NCDs. These joint activities offer important opportunities to address cross-cutting issues and to advance capacity and learning in countries.



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